Stress Management

A Medical Dictionary, Bibliography,
and Annotated Research Guide to
Internet References

James N. Parker, M.D.
and Philip M. Parker, Ph.D., Editors

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About the Editors

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FORWARD

In March 2001, the National Institutes of Health issued the following warning: "The number of Web sites offering health-related resources grows every day. Many sites provide valuable information, while others may have information that is unreliable or misleading."[1] Furthermore, because of the rapid increase in Internet-based information, many hours can be wasted searching, selecting, and printing. Since only the smallest fraction of information dealing with stress management is indexed in search engines, such as **www.google.com** or others, a non-systematic approach to Internet research can be not only time consuming, but also incomplete. This book was created for medical professionals, students, and members of the general public who want to know as much as possible about stress management, using the most advanced research tools available and spending the least amount of time doing so.

In addition to offering a structured and comprehensive bibliography, the pages that follow will tell you where and how to find reliable information covering virtually all topics related to stress management, from the essentials to the most advanced areas of research. Public, academic, government, and peer-reviewed research studies are emphasized. Various abstracts are reproduced to give you some of the latest official information available to date on stress management. Abundant guidance is given on how to obtain free-of-charge primary research results via the Internet. **While this book focuses on the field of medicine, when some sources provide access to non-medical information relating to stress management, these are noted in the text.**

E-book and electronic versions of this book are fully interactive with each of the Internet sites mentioned (clicking on a hyperlink automatically opens your browser to the site indicated). If you are using the hard copy version of this book, you can access a cited Web site by typing the provided Web address directly into your Internet browser. You may find it useful to refer to synonyms or related terms when accessing these Internet databases. **NOTE:** At the time of publication, the Web addresses were functional. However, some links may fail due to URL address changes, which is a common occurrence on the Internet.

For readers unfamiliar with the Internet, detailed instructions are offered on how to access electronic resources. For readers unfamiliar with medical terminology, a comprehensive glossary is provided. For readers without access to Internet resources, a directory of medical libraries, that have or can locate references cited here, is given. We hope these resources will prove useful to the widest possible audience seeking information on stress management.

The Editors

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[1] From the NIH, National Cancer Institute (NCI): **http://www.cancer.gov/cancerinfo/ten-things-to-know**.

CHAPTER 1. STUDIES ON STRESS MANAGEMENT

Overview

In this chapter, we will show you how to locate peer-reviewed references and studies on stress management.

The Combined Health Information Database

The Combined Health Information Database summarizes studies across numerous federal agencies. To limit your investigation to research studies and stress management, you will need to use the advanced search options. First, go to **http://chid.nih.gov/index.html**. From there, select the "Detailed Search" option (or go directly to that page with the following hyperlink: **http://chid.nih.gov/detail/detail.html**). The trick in extracting studies is found in the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Journal Article." At the top of the search form, select the number of records you would like to see (we recommend 100) and check the box to display "whole records." We recommend that you type "stress management" (or synonyms) into the "For these words:" box. Consider using the option "anywhere in record" to make your search as broad as possible. If you want to limit the search to only a particular field, such as the title of the journal, then select this option in the "Search in these fields" drop box. The following is what you can expect from this type of search:

- **Coping With Caregiving: Stress Management for Caregivers of the Elderly**

  Source: Journal of Psychosocial Nursing. 28(1): 15-16, 19-21. January 1990.

  Summary: This article describes a study of stress management approaches to benefit caregivers of family members with Alzheimer's or other dementias. The study hypothesized that stress management training would promote more effective coping and more greatly reduce caregiving burdens in caregivers than a support group intervention. Results of the study suggest that specific stress management techniques adapted to meet the needs of caregivers can improve ways in which caregivers cope with frustrations more significantly than participation in support groups. However, the study did not show the ability of either support groups or the stress management program to alter the sense of burden caregivers experience. 35 references.

- **Stress Management in the Health Care Field: A Pilot Program for Staff in a Nursing Home Unit for Patients With Alzheimer's Disease**

  Source: Music Therapy Perspectives. 10(2): 110-113. 1992.

  Summary: This journal article describes a pilot stress management program developed for staff in a nursing home unit for patients with Alzheimer's disease. A survey of the nursing unit staff was conducted to determine how much work related stress the staff was experiencing, the sources of this stress, and how staff members were dealing with the stress. The results were used to develop a stress management program to meet the specific needs of the staff members. A series of weekly, half hour, voluntary stress management classes were implemented. The techniques varied from week to week and often utilized music therapy methods. These interventions included gentle stretching to music, guided imagery with music, and massage therapy with music. Although attendance remained low throughout the program, the majority of staff indicated they liked the program. It was often difficult for staff to attend at the scheduled time during a shift, yet they were not willing to use their own time before or after a shift to come to a class. There were no directly observable signs of reduced stress levels on the unit. The implications for developing future stress management programs are discussed. 16 references.

Federally Funded Research on Stress Management

The U.S. Government supports a variety of research studies relating to stress management. These studies are tracked by the Office of Extramural Research at the National Institutes of Health.[2] CRISP (Computerized Retrieval of Information on Scientific Projects) is a searchable database of federally funded biomedical research projects conducted at universities, hospitals, and other institutions.

Search the CRISP Web site at **http://crisp.cit.nih.gov/crisp/crisp_query.generate_screen**. You will have the option to perform targeted searches by various criteria, including geography, date, and topics related to stress management.

For most of the studies, the agencies reporting into CRISP provide summaries or abstracts. As opposed to clinical trial research using patients, many federally funded studies use animals or simulated models to explore stress management. The following is typical of the type of information found when searching the CRISP database for stress management:

- **Project Title: A CD-ROM WORKPLACE STRESS AND MOOD MANAGEMENT PROGRAM**

  Principal Investigator & Institution: Cook, Royer F.; President; Isa Associates, Inc. 201 N Union St, Ste 330 Alexandria, Va 22314

  Timing: Fiscal Year 2002; Project Start 01-SEP-2002; Project End 31-MAR-2003

  Summary: (provided by applicant): Stress, depression and other mental health disorders are prevalent, disabling conditions that have substantial effects on the health and productivity of the work force. Although effective approaches to the prevention and

[2] Healthcare projects are funded by the National Institutes of Health (NIH), Substance Abuse and Mental Health Services (SAMHSA), Health Resources and Services Administration (HRSA), Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDCP), Agency for Healthcare Research and Quality (AHRQ), and Office of Assistant Secretary of Health (OASH).

treatment of these problems are available, a large proportion of the work force - perhaps a majority of those afflicted - do not seek interventions for their problems, largely because of the stigma attached to the mental disorders, coupled with a lack of exposure to available interventions. The goal of this project is to develop and test an interactive, multi-media computer-based stress and mood management program for the workplace. By presenting topics of depression, anxiety and substance abuse within a program of **stress management** - a relatively non-stigmatized topic -- working adults can acquire the necessary awareness, skills and motivation to prevent, or seek treatment for, these costly disorders. In Phase I, a prototype CD-ROM stress and mood management program will be developed and tested in focus groups of working adults, and interviews will be conducted with human resource managers and workplace health professionals to assess the feasibility and commercial viability of the program. PROPOSED COMMERCIAL APPLICATION: Stress, depression and other mental disorders have considerable impact on the health care costs and the productivity of the American work force. Corporations and their managed care organizations are seeking effective techniques for the prevention and treatment of these costly, disabling disorders. Although computer-based programs exist for addressing stress or treating depression, the proposed approach - a CD-ROM-based interactive, multi-media program that addresses depression, anxiety and substance abuse within a **stress management** program - should have substantial appeal to major corporations and their managed care organizations.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: A CONTROLLED TRIAL OF CBT FOR MS INFLAMMATION**

  Principal Investigator & Institution: Mohr, David C.; Northern California Institute Res & Educ San Francisco, Ca 941211545

  Timing: Fiscal Year 2003; Project Start 01-SEP-2003; Project End 30-JUN-2008

  Summary: (provided by applicant): MS is a frequently disabling autoimmune disease affecting approximately 350,000 people in the United States. It is among the most disabling diseases in the United States, with 81% of all patients out of the workforce. More that two decades of research has consistently shown a relationship between stressful life events (SLEs), in particular non-traumatic family and work stressors, and subsequent clinical exacerbation. Furthermore, we have shown that non-traumatic SLEs increase the risk of the subsequent appearance of new gadolinium enhancing (Gd+) magnetic resonance imaging (MRI) brain lesions, an early marker of MS inflammation and blood-brain barrier (BBB' breakdown. The purpose of this study is to determine the efficacy of cognitive behavioral therapy for MS (CBT. MS), a **stress management** program we have developed specifically for MS, in reducing the occurrence of new brain lesions in people with relapsing-remitting multiple sclerosis (RRMS). RRMS was selected over other types, because it is the most common form of MS and it is more likely than other types to be associated with clinical exacerbation and Gd+ MRI. One hundred and twelve patients will be enrolled for 2 years. To ensure equivalent medical treatment across patients and treatment arms, all patients will receive neurological care through the University of California, San Francisco (UCSF) MS Center. Patients will be randomly assigned to either CBT-MS or treatment as usual (TAU). The **stress management** program will consist of 26 weekly group **stress management** training sessions followed by 12 monthly booster sessions to encourage maintenance of behavioral changes, Because MS exacerbation is episodic, with annual prevalence rates of.61 - 1.68, longer maintenance of behavioral changes will greatly increase the power to detect effects. Patients will be followed for 6 months following cessation of treatment

and booster sessions. To encourage retention, TAU patients will be offered 26 weeks of CBT-MS after completing the study. Consistent with Phase II clinical trials in MS, the primary outcome will be Gd+ MRI brain lesions acquired at screening, and months 3, 6, 12, 18, and 24. Secondary neuroimaging outcomes will include T2-weighted MRI and brain parenchymal fraction (BPF). Secondary clinical outcomes will include MS exacerbation rate, progression of disability, and neuropsychological impairment. Quality of life will be examined as a secondary outcome to evaluate clinical utility. We also wilt enhance our understanding of mechanisms by examining potential psychosocial, immune, and endocrine mediators of the relationship betweenSLEs and clinical and neuroimaging markers of MS inflammation.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: ACADEMIC TEACHING AND RESEARCH CAREER DEVELOPMENT**

  Principal Investigator & Institution: Amri, Hakima; Cell Biology; Georgetown University Washington, Dc 20057

  Timing: Fiscal Year 2002; Project Start 15-JUL-2002; Project End 31-MAY-2007

  Summary: (provided by applicant): The objective of the career development award is to help a junior faculty member develop academic teaching and research expertise in a specific field of interest. Currently, a significant number of Georgetown University faculty members are in the process of enhancing their institution's educational and research capacity in complementary and alternative medicine (CAM). As a member of this faculty pool who is considered one of the initiators of the drive towards integration of CAM modalities into the Georgetown University Medical School curriculum, I am already actively involved in realizing the goals of the R-25 educational grant, fulfilling a dual role as both academic teacher and researcher. My first goal is the successful implementation and academic integration of the CAM program. The career development award would greatly facilitate this endeavor by allowing me to increase the professional time dedicated to this cause from 30% as set forth by the R-25 educational grant to 100%. This would help assure the highest academic standards for our medical and graduate students. Secondly, I will be working closely with Dr. Haramati, my mentor and the program's educational director, to develop a curriculum for the envisioned CAM Master's program. This phase is scheduled to be completed by the third year of our R-25 grant, and it will be vital to receive adequate training in curriculum building and academic teaching. The third aim is to develop and launch research projects pertaining to CAM, which will constitute a much-needed training platform for our students and bring a strong evidence based perspective to the field. Having worked as a basic scientist in Dr. Papadopoulos' laboratory, I can draw on my expertise to bring together conventional and CAM research, much like I did when defining the mechanism of action of Ginkgo biloba and its role with respect to **stress management.** These research projects would complement the ongoing CAM research at Georgetown University and should add a new perspective to the process of uniting CAM and basic science. This in turn would allow Georgetown University to offer an improved research environment to the students by affording them additional opportunities in pursuing research-based CAM. The award would therefore (1) play a synergistic role in accomplishing the goals of the R-25 educational grant, (2) help expand my role in academic teaching and research, and (3) parley my current knowledge and abilities to help substantiate and enrich the current spectrum of CAM.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: ALTERNATIVE STRESS MANAGEMENT APPROACHES IN HIV DISEASE**

  Principal Investigator & Institution: Mccain, Nancy L.; Professor; Adult Health Nursing; Virginia Commonwealth University Richmond, Va 232980568

  Timing: Fiscal Year 2001; Project Start 01-AUG-2000; Project End 31-MAY-2005

  Summary: Description (adapted from the investigator's abstract): A growing body of research with HIV positive persons indicates that a variety of biobehavioral strategies for **stress management** can not only mitigate psychological distress and improve coping skills, but also enhance immune function through neuroendocrine-immune system modulation. Insights as to why such interventions might work are emanating from research in psychoneuroimmunology (PNI). The PNI paradigm accounts for the negative impact of perceived stress on HIV disease progression, primarily as a function of immunosuppression mediated by elevated cortisol. Thus, chronic and / or severe psychological stress associated with having HIV disease may further compromise immune functioning over the illness trajectory. Because of the partial effectiveness of traditional interventions tested to date, as well as to expand the repertoire of potential **stress management** interventions, we propose a randomized clinical trial for **stress management** in HIV disease: 1) A cognitive behavioral approach will include coping effectiveness training combined with relaxation training to create a fairly traditional intervention we will call positive living; 2) We will test Tai Chi training and spiritual growth group interventions two potentially effective alternative **stress management** techniques derived from the PNI framework, against the traditional approach; 3) We will test the effectiveness of booster sessions for 4 months following the original interventions for all groups and for 8 months for a randomly selected half of all groups; 5) A qualitative component of the study will further enhance understanding of the influences of **stress management** interventions for people living with HIV disease. The overall purpose of the proposed study is to determine whether three short-term **stress management** interventions along with booster strategies will improve and sustain improvements in the domains of psychosocial functioning, quality of life, and somatic health among persons with varying stages of HIV disease. Multiple indicators derived from the PNI paradigm will measure these three outcome domains, along with neuroendocrine mediation.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: AN INTERVENTION TO IMPROVE END-OF-LIFE SYMPTON DISTRESS**

  Principal Investigator & Institution: Redinbaugh, Ellen M.; None; University of Pittsburgh at Pittsburgh 350 Thackeray Hall Pittsburgh, Pa 15260

  Timing: Fiscal Year 2001; Project Start 28-SEP-2001; Project End 31-AUG-2005

  Summary: (provided by applicant): End-stage colorectal cancer is associated with physical and psychological symptoms that negatively affect patients' quality of life (QOL) [1,2]. Nonpharmacological interventions that promote relaxation and reduce psychological distress are associated with a reduction of pain [3] suggesting that psychological distress and anxiety may mediate the relationship between symptom severity and QOL. Pilot data from a sample of 28 end-stage cancer patients supports the mediational role of psychological distress in the symptom severity - QOL relationship. The results indicated that the mere presence or absence of a physical symptom is not related to patient QOL. Rather, greater symptom severity was associated with significantly poorer QOL, and when the effects of psychological distress were

controlled, the relationships between symptom severity and QOL were no longer significant. The proposed research focuses on psychological distress as an underlying mechanism of physical symptom severity among EOL cancer patients and a non-traditional approach (acupuncture) to relieving distress and symptom severity. Acupuncture has been used successfully with end-of-life populations (EOL) to reduce pain and shortness of breath [4]. Patients with psychological distress report the greatest benefit from acupuncture [5,6]. Rather than using acupuncture to treat pain and discomfort, the proposed research will evaluate acupuncture that targets acupoints associated with anxiety and emotional well-being. One hundred seventy patients with metastatic colorectal cancer will be recruited for the study through the University of Pittsburgh Cancer Institute (UPCI). Participating patients will be randomized into one of three conditions: 1) a "true" acupuncture condition, 2) a "sham" acupuncture condition, and 3) a usual care control group. Assessment procedures will gather demographic, QOL, physical and psychological symptomatology, medication use, and salivary cortisol data. Randomization will occur after baseline assessment, and participants randomized to one of the two intervention conditions will receive acupuncture treatments three times a week for four weeks. Follow-up assessments will occur weekly for four weeks following the intervention. The proposed study will 1) test the efficacy of an acupuncture intervention in reducing psychological distress and physical symptom severity and 2) examine acupuncture's role in regulating stress responses associated with hypothalamic-pituitary axis (HPA) activity. Findings from this study will 1) promote our understanding of psychological distress as a mechanism of physical symptom distress, and 2) promote the integration of Eastern healing philosophies (acupuncture) with the Western medical model (stress-related HPA activation).

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: ANIMAL MODELS OF CHILDHOOD AND ADOLESCENT DEPRESSION**

  Principal Investigator & Institution: Bylund, David B.; Professor and Chair; Pharmacology; University of Nebraska Medical Center Omaha, Ne 681987835

  Timing: Fiscal Year 2003; Project Start 14-AUG-2003; Project End 31-MAY-2006

  Summary: (provided by applicant): Major Depressive Disorder (clinical depression) is a severe and potentially incapacitating mental illness that is common in children and adolescents, with an estimated lifetime prevalence of 15 -20 % in this population. An important difference between clinical depression in children and adolescents, as compared to adults, is its response to antidepressant drugs. Tricyclic antidepressants have not been shown to be effective in treatment of child and adolescent clinical depression. Although antidepressant drugs have numerous neurochemical actions, the therapeutic mechanisms of action of antidepressant drugs in relieving depression remain unknown. In non-depressed persons antidepressant drugs are not euphoriant or stimulant. Therefore, investigations related to which of the many neurochemical effects of antidepressant drugs are functionally related to their therapeutic efficacy in relieving depression requires research using a behavioral animal model of clinical depression. To better understand the neurobiology underlying the differences between children and adolescents, and adults in the response to pharmacological treatment of clinical depression, animal models of childhood and adolescent depression are needed. Currently, there are no established juvenile animal models of clinical depression. Although the models developed in adult animals can serve as a starting point, they must be adapted and validated in juvenile animals due the many differences between juvenile and adult animals. The overall goal of this proposal is to assess the validity and

usefulness of two well-established rat animal models of adult clinical depression as models of childhood and adolescent clinical depression. Specifically, we propose to assess the usefulness of the forced-swim test and of learned helplessness as animal models for clinical depression in juvenile rats. The key questions which are addressed by this proposal are: 1) Do juvenile rats respond to antidepressant drugs with decreased immobility in the forced swim? 2) Do juvenile rats develop learned helplessness after inescapable stress in both the acute and persistent paradigms, as demonstrated by shuttlebox testing? 3) Do juvenile rats respond to antidepressant drugs in the both acute and persistent learned helplessness paradigms with decreased escape latencies in shuttlebox testing? Ultimately, the models may facilitate a better understanding of the underlying neurobiology of clinical depression, and serve as predictive measures of antidepressant efficacy in children and adolescents.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: ATTEN ALLOCATION AND CONJOINT TOBACCO AND ALCOHOL USE**

  Principal Investigator & Institution: Kassel, Jon D.; Psychology; University of Illinois at Chicago 1737 West Polk Street Chicago, Il 60612

  Timing: Fiscal Year 2001; Project Start 15-SEP-1998; Project End 31-AUG-2003

  Summary: Individuals who smoke cigarettes are more likely to drink alcohol and, conversely, those who drink tend to smoke. Moreover, alcohol and tobacco are frequently used at the same time. The relationship between these drugs, however, is not presently well understood. Given the synergistic health risks posed by the joint use of these substances, research on tobacco-alcohol interactions is urgently needed as it can inform prevention, treatment, and policy at multiple levels. There is reason to believe that both of these drugs are frequently used as a means of coping with stress. Moreover, recent work examining the parameters of alcohol/stress and tobacco/stress interactions has implicated the role of cognitive processes. One line of research suggests that both drugs' anxiolytic effects are attentionally mediated. Specifically, both smoking's and drinking's calming effects may depend on the presence of benign distraction: Each drug appears to narrow the focus of attention (through a reduction in cue utilization), thereby reducing anxiety by facilitating distraction from stressful cognitions. A different cognitive perspective posits that people use tobacco when they drink in order to counteract alcohol's depressant effects with nicotine's stimulant effects, thereby compensating for alcohol-related performance decrements. Both of these cognitively based theories provide excellent conceptual frameworks for assessing alcohol/tobacco interactions. Alcohol and tobacco may be used concurrently (1) for their additive, attentionally mediated effects on stress reduction, and/or (2) because nicotine's enhancement of attentional processing capacity compensates for processing capacity reductions induced by alcohol. Working from this theoretical base, the overall objective of the proposed project is to assess the separate and combined effects of alcohol and nicotine both on emotional response in stressed participants and on attentional processing capacity. The primary hypothesis being tested is that two genuinely different cognitive mechanisms work simultaneously to account for the covariance in use of alcohol and tobacco. Results provided from this study should improve our understanding of the link between tobacco and alcohol use.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: BEHAVIOR TREATMENT FOR CHRONIC PTSD**

  Principal Investigator & Institution: Turner, Samuel M.; Professor; Psychology; University of Maryland College Pk Campus College Park, Md 20742

  Timing: Fiscal Year 2003; Project Start 10-APR-2003; Project End 30-MAR-2006

  Summary: (provided by applicant): Post-traumatic stress disorder (PTSD), a severe and chronic anxiety disorder that follows traumatic experiences (e.g., combat, physical, and sexual assault), is characterized by acute symptoms of re-experiencing, emotional numbing, avoidance, hyperarousal, and severe impairment in social functioning. There is lifetime prevalence, as high as 14% in the general population and over 30% among combat veterans. Intensive exposure therapy reduces the hallmark features of chronic PTSD (e.g., intrusions, physiological reactivity) and much of the associated general anxiety, and currently is considered the psychosocial treatment of choice. However, exposure therapy does not reduce the "negative" symptoms of PTSD (e.g., avoidance, skill deficits, social isolation, interpersonal difficulties, anger control). Trauma Management Therapy (TMT), a multi-component behavioral treatment for chronic combat-related PTSD addresses all aspects of the clinical syndrome, using a combination of patient education, exposure therapy, social skills training (including emotional management) and systematic homework assignments. Preliminary evidence shows that overall TMT results in broad improvement across the wide spectrum of PTSD symptoms in veterans treated within the VA. This application is the next step in the evaluation of the efficacy of TMT. Specifically, this project is a prospective randomized study comparing TMT to Exposure Therapy only for treatment of chronic PTSD in combat veterans within the VA. Forty-eight subjects will be recruited from VA Medical Centers in Washington, D.C. Treatment will be administered over a 17-week period (active treatment phase); and subjects will be followed for an additional 12-months (follow-up phase) to ascertain long-term effects of treatment across four domains of functioning: (1) core PTSD symptoms; (2) social and emotional function; (3) symptoms of other psychiatric conditions (e.g., depression); and (4) treatment credibility and satisfaction. This application is submitted under the R21 (Exploratory/Developmental Grants) Mechanism.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: BEHAVORIAL INTERVENTIONS FOR WOMEN WITH HIV/AIDS**

  Principal Investigator & Institution: Weiss, Stephen M.; Professor & Vice Chair for Research; Psychiatry and Behavioral Scis; University of Miami-Medical Box 248293 Coral Gables, Fl 33124

  Timing: Fiscal Year 2001; Project Start 30-SEP-2000; Project End 31-AUG-2005

  Summary: (Adapted from Applicant's Abstract): The principal objective of this proposed multisite clinical trial is to continue efforts to develop the most effective combination of behavioral interventions to optimize the health status of the most neglected and understudied population affected by the AIDS epidemic in this country: poor women of color living with HIV/AIDS. Findings from the current study with this population affirm the utility of cognitive-behavioral **stress management** training combined with expressive-supportive therapy (CBSM+) in reducing distress (depression, anxiety) and denial, while improving social support, self-efficacy, coping skills and quality of life. The proposed study will extend these findings in seeking to determine whether exposure to CBSM+ can significantly improve the ability of the participants to take advantage of a health behavior change program encouraging the adoption and maintenance of healthier lifestyle behaviors (high levels of medication adherence,

appropriate nutritional intake and physical activity, safer sexual practices and reduced substance use/abuse) essential for optimal health in the context of living with HIV/AIDS. A corollary objective will be to determine whether the proposed intervention program will be beneficial to less-acculturated segments of the affected population (i.e., non-English speaking women with HIV/AIDS) by establishing culturally- and linguistically-sensitive versions of the program in Spanish and Creole. To accomplish these objectives, the proposed Phase III multisite clinical trial described in two linked interactive research project grant applications (Miami- S. Weiss, P.I.; New York/New Jersey- J. Tobin, P.I.) will randomize 450 ethnically diverse women living with HIV/AIDS in the three major epicenters for women (Miami: n = 180; New York: n = 180; New Jersey: n = 90) into a group CBSM+ condition and an individual psycoeducational comparison condition (Phase I). Following Phase I, participants will be randomized by group or cohort into a group "Healthier Lifestyles" skills training program or an individual health educational control condition (Phase II) devoted to improving medication adherence, nutrition, physical activity, safer sex and substance use reduction. Follow-up assessments will be carried out at 6, 12, and 24 months after treatment.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: BIOBEHAVIORAL MECHANISMS OF BLOOD PRESSURE DIPPING**

  Principal Investigator & Institution: Sherwood, Andrew; Associate Professor; Psychiatry; Duke University Durham, Nc 27706

  Timing: Fiscal Year 2003; Project Start 01-SEP-2003; Project End 31-AUG-2007

  Summary: (provided by applicant): The primary objective of the proposed research is to further our understanding of the causes and consequences of individual differences in blood pressure (BP) dipping during nighttime sleep. Growing evidence indicates that elevated nighttime BP is superior to either clinic BP or daytime ambulatory BP as a prognostic indicator of cardiovascular morbidity and mortality. Blunted BP dipping favors the development of concentric left ventricular hypertrophy (LVH), a geometric restructuring of the heart that is often evident early in hypertension. LVH is the strongest known predictor of cardiovascular morbidity and mortality, other than advancing age. Despite compelling evidence for the pathophysiological consequences of blunted BP dipping, its biobehavioral determinants remain to be defined. The proposed study will evaluate several likely mechanisms of blunted BP dipping, including: (i) Sleep Quality; (ii) Psychosocial Stress; (iii) Sympathetic nervous system (SNS) activity, as well as: (iv) Vascular disease, in 200 men and women with high normal BP or Stage 1 hypertension. In addition, this study will characterize BP dipping in terms of the underlying hemodynamic mechanisms by supplementing 24-hour ambulatory BP monitoring with concurrent monitoring of cardiac output (CO) and systemic vascular resistance (SVR).The study will include a focus on African American ethnicity, and on menopause in women, because they are established risk factors for LVH. These factors are also related to blunted BP dipping, and to the biobehavioral mechanisms of BP dipping that we propose to assess. By defining the factors responsible for individual differences in BP dipping, the proposed research will yield information that should facilitate the development of effective biobehavioral interventions (e.g., pharmacological therapy, sleep therapy, **stress management** training) aimed at optimizing nighttime BP, and reducing cardiovascular disease risk.

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- **Project Title: CAREGIVERS OF CANCER PAIN PATIENTS: COPING INTERVENTION**

  Principal Investigator & Institution: Weitzner, Michael A.; Professor of Oncology & Psychiatry; Psychiatry and Behavioral Med; University of South Florida 4202 E Fowler Ave Tampa, Fl 33620

  Timing: Fiscal Year 2002; Project Start 30-SEP-2002; Project End 30-JUN-2007

  Summary: (provided by applicant): Three out of four families in the United States will have at least one family member diagnosed with cancer. In the majority of these families, one or more members will be responsible for providing care to the cancer patient. Up to 50- 80% of these patients will have significant pain, the majority not receiving adequate treatment. Important forces such as the movement out of the hospital created by diagnosis-related groups and the significant force of managed care have created a reality in which families and patients are finding themselves at home providing very complex care when that may not be their preference. The provision of this care is made more difficult by the presence of unrelieved pain. The reality is that the living room has become the intensive care unit and the place where family caregivers are exhausted and burdened. Family caregivers who have very little information about pharmacology, dosing of medications, and assessing or treating pain are asked to become around-the-clock care providers. Attention to caregiving issues is important in order to understand how this major, unpaid segment of our health care system works and what we can do to minimize the stress of caregiving. Research focusing on the family caregiver of the cancer patient with pain is limited. Much descriptive work has focused on the cancer patient with pain, with few outcome measures included for the caregiver. Most work suggests that caregivers have increased emotional distress. The impact of caregiving for cancer patients with pain on family members' quality of life (QOL) remains unclear since valid caregiver-specific QOL instruments have not been used. Another factor limiting research progress is the lack of an empirically validated conceptual model for understanding individual differences in QOL or improving QOL among caregivers of cancer patients with pain. The proposed program of research seeks to increase knowledge about caregiving for cancer patients with pain by using a valid, caregiver-specific QOL instrument and an empirically validated stress process model. Using the stress process model for caregiving, a psycho-education and coping skills intervention will be evaluated using a randomized, controlled design. Caregiver/patient dyads (n = 300) will be randomly assigned to standard care or standard care plus the coping skills intervention. The caregiver will attend six weekly one-hour visits containing didactic information regarding pain assessment, pain medications, side effects, recognition of emotional distress in the patient, **stress management,** and communication with the pain team, as well as role play scenarios around these themes. The effectiveness of the intervention will be tested as well as identification of potential mediators and moderators of the effectiveness of the intervention.

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- **Project Title: CBSM, PSYCHOLOGICAL & PHYSICAL HEALTH IN HIV+ CHILDREN**

  Principal Investigator & Institution: Dixon, Denise A.; Psychiatry; Univ of Med/Dent Nj Newark Newark, Nj 07103

  Timing: Fiscal Year 2003; Project Start 09-SEP-2003; Project End 31-AUG-2005

  Summary: (provided by applicant): This 2-year pilot project, which will complement two currently funded investigations, is designed to test the effects of an 8-week group

cognitive behavioral **stress management** (CBSM) intervention on affective distress, physical health and adherence in 50 school-aged children with HIV infection. We will evaluate the effects of CBSM on health status by measuring changes in HIV load and CD4+ cell counts. Research with children has demonstrated that cognitive-behavioral treatments (CBT) represent effective modalities for improving coping and diminishing affective distress. Research with HIV-infected adults has found that CBSM enhances or maintains adaptive coping strategies, decreases maladaptive coping, and improves immune status. We propose that a CBSM intervention tailored to children can enhance coping skills, and thus improve psychological and behavioral adjustment, thereby maximizing the opportunity to reconstitute compromised immune systems. While parental involvement may represent an important component of treatment for school-aged children, we plan to focus first on improving coping and self-management skills in children in order to enhance the feasibility of this small-scaled pilot investigation. This project closely integrates the psychological care of pediatric populations by recruiting participants, completing assessments and running the intervention sessions within the medical clinics of the university hospital. The study is a 2x4 randomized experimental design with experimental conditions (CBSM plus standard of care [SC]) versus a SC wait-list control (WLC) as the between-group factor and time point (baseline, pre-treatment, post treatment, 2-month follow-up) as the within-group factor. We hypothesize that the children who receive CBSM, when compared with the WLC group, will demonstrate lower levels of psychological distress, improved coping, better adherence, lower mean viral loads and decreased disease progression after receiving the psychosocial intervention. The long-term objective of the research is to evaluate whether children provided with coping skills and relaxation training will demonstrate improved psychological adjustment and better adherence, with concomitant improvement in immune status.

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- **Project Title: CENTER FOR MULTIDISCIPLENERY STUDIES OF CFS PATHOGENESIS**

  Principal Investigator & Institution: Klimas, Nancy G.; Professor of Medicine, Microbiology, And; Medicine; University of Miami-Medical Box 248293 Coral Gables, Fl 33124

  Timing: Fiscal Year 2001; Project Start 30-SEP-1999; Project End 31-JUL-2003

  Summary: Recent advances in our understanding of neuroendocrine mediators in CFS have raised more questions than answers. Certainly two areas of research stand out and are intertwined: the biology of orthostatic hypotension and the biology of reactivity. Several novel observations are made in this Center application and the four projects will complement each other in a way that, like pieces of a puzzle, bring the overall picture and understanding of CFS into clearer focus. Project I examines autonomic mechanisms that would lead to the low RBC mass as well as the potential for CFS associated cytokines to inhibition erythropoietin production. This leads to a study of RBC mass expansion vs. volume expansion vs. placebo to further delineate our understanding of renal hemodynamics. Project 3 uses the blood volume manipulation to study mechanisms of autonomic and cardiovascular interactions in CFS, and pools data with Project I for a complete picture of this shared study population. Project 2 also manipulates the biology of CFS by modifying the stress response through a cognitive behavioral **stress management** paradigm, and evaluating its impact on potential mediators of the illness, such as immune function and inflammatory cytokine production. Project 4 capitalizes on the availability of pre intervention post intervention

samples to look at mechanisms of natural killer cell dysfunction in CFS, including the role of stress hormones (catecholamines, cortisol) and inflammatory cytokines (TNF-(x) on NK cell function at the molecular level. These projects will each be supported by administrative, health, psychosocial, and laboratory assessment core units.

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- **Project Title: CLINICAL TRIAL OF MEDITATION FOR CVD IN OLDER BLACK WOMEN**

  Principal Investigator & Institution: Lollis, Charlie M.; Maharishi University of Management 1000 N 4Th St, Ste 2 Fairfield, Ia 52557

  Timing: Fiscal Year 2001; Project Start 24-SEP-2001; Project End 31-JUL-2002

  Summary: There is no text on file for this abstract.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: CNS AND GENETIC MARKERS IN CHILDREN OF ALCOHOLICS**

  Principal Investigator & Institution: Noble, Ernest P.; Pike Professor of Alcohol Studies; None; University of California Los Angeles 10920 Wilshire Blvd., Suite 1200 Los Angeles, Ca 90024

  Timing: Fiscal Year 2001; Project Start 01-SEP-1997; Project End 31-AUG-2004

  Summary: Growing evidence, from animal and human studies, suggests the involvement of the dopaminergic system in alcohol- and other drug-seeking behaviors. The main purpose of this proposal is to determine whether or not genetically- and/or environmentally (stress)-induced deficits in the brain dopaminergic system predict susceptibility to these behaviors in adolescent children of alcoholic parents. A sample of 100 boys and 100 girls (13-15 year old) will be rigorously screened and selected for study. Each child will be assessed at entry for dopaminergic-related markers. These include: 1) molecular genetic (alleles (forms) of the D2 dopamine receptor and D4 dopamine receptor genes), 2) neurocognitive (P3000 amplitude and latency of the event-related potential and visuospatial abilities), 3) personality (Novelty Seeking and Extraversion) and 4) environmental (stress and response to stress) markers. The neurocognitive, personality and environmental markers will be reassessed during the 3rd year of the childrens' involvement to determine the stability of these markers. Alcohol and other drug use behaviors will be ascertained as children enter the study and also during their 3rd and 4th years of participation in the study. Finally, from this data, differential susceptibility to alcohol and other drug use behaviors will be determined from the best molecular genetic, neurocognitive, personality and stress markers, using multiple regression and confirmatory statistical modeling analyses. Previous studies from the PI's laboratory and from laboratories elsewhere provide evidence for an interrelationship among the various elements indicated above. The unique feature of this proposal is that it presents a model system which integrates genetic and environmental factors (through the common-dopaminergic system) in predicting differential susceptibility to "real-world" alcohol and other drug use behaviors. This model system will be tested in a prospective longitudinal design on children of alcoholics. It is now well-acknowledged that alcohol and other drug use behaviors are a major health an social problem among adolescents in this Nation. In deed, recent surveys indicate a worsening of the problem. It is hoped that by understanding the underlying factors contributing to this problem, a more rational basis emerges for identifying high risk individuals and improving the efficacy of focused prevention efforts.

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- **Project Title: COGNITIVE BEHAVIOR THERAPY FOR SOMATIZATION DISORDER**

  Principal Investigator & Institution: Allen, Lesley A.; Psychiatry; Univ of Med/Dent Nj-R W Johnson Med Sch Robert Wood Johnson Medical Sch Piscataway, Nj 08854

  Timing: Fiscal Year 2001; Project Start 01-SEP-1999; Project End 31-AUG-2003

  Summary: This is a proposal for a three-year program of research and career development. Over the course of the program the principal investigator will begin to establish herself as a behavioral medicine intervention researcher while conducting a randomized, controlled, treatment trial for adults with somatization disorder. The proposal is the initial step in the principal investigator's long-term pursuit to develop effective treatments for this refractory problem. The intervention trial aims to assess the efficacy of a 10- session cognitive behavior therapy (CBT) manual for patients with somatization disorder, a problem characterized by numerous medically unexplained physical symptoms. Seventy-two patients will be randomly assigned to either the CBT condition or the control comparison condition, standard medical care. All 72 patients will be evaluated by a blind rater and with self-report questionnaires at four points during the study, i.e., pretreatment, post-treatment, six months post-treatment, and twelve months post-treatment. It is hypothesized that patients who receive CBT will report greater reductions in disability and in severity of somatic complaints than the patients in the control condition at all three post-treatment evaluations. Also, CBT patients are expected to have a greater reduction in health care expenditures over the year following treatment than will control patients. Finally, preliminary exploratory analyses will be conducted to examine whether certain cognitive characteristics of somatizers predict their treatment response. The career development plan is designed to assist the principal investigator in (1) augmenting her knowledge of somatoform disorders, behavioral medicine, and health psychology, and (2) refining her skills in **stress management,** medical cost analysis, data analysis, and the proper conduct of clinical intervention trials. The knowledge and skills will be acquired through course work, independent study, research meetings and discussions with consultants. The multidisciplinary team of sponsors, consultants, and colleagues will broaden the scope of both the research project and the principal investigator's intellectual development.

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- **Project Title: COGNITIVE BEHAVIORAL TREATMENT OF HIV+ DRUG ABUSERS**

  Principal Investigator & Institution: Malow, Robert M.; Professor; Psychiatry and Behavioral Scis; University of Miami-Medical Box 248293 Coral Gables, Fl 33124

  Timing: Fiscal Year 2001; Project Start 30-SEP-2000; Project End 31-AUG-2005

  Summary: (Applicant's Abstract) Cognitive Behavioral **Stress Management** (CBSM) is an intervention developed by our project team during over a decade of NIH-funded research to address the unique primary and secondary prevention issues of the HIV+ population. This proposed 5-year study is designed to evaluate the effects of an adapted version of this intervention, CBSM-RDA, aimed at the unique needs of HIV+ recovering drug abusers (RDAs) and the ethnic/cultural factors that may mediate outcome. In particular, this study heeds the national priority on translational research and adaptation of proven interventions to benefit minority HIV+ subgroups, who are culturally different, less affluent, and who bear the added burden of a history of drug abuse and the special needs of recovery. Because this is a grossly understudied

population, especially with regard to CART adherence (Combination Antiretroviral Therapy), a key aim of this study is to focus CBSM-RDA on improving medication adherence and on understand the trajectories of success due to our intervention. We propose a randomized clinical trial to test relative effects of CBSM-RDA and a Health Promotion Comparison (HPQ condition, designed to be structurally equivalent in time, attention, and interest value. Employing a 2 (CBSM-RDA vs. HPQ) x 5 (pre-, post-intervention, 4, 8, and 12-month follow-up assessments) design, we will provide the intervention to a culturally diverse, predominantly minority population of HIV+ RDA men (N= 160) and women (N= 160) and comparatively assess the therapeutic effects of CBSM-RDA and HPC on key endpoints: distress and quality of life, drug abuse relapse, unsafe sex, CART adherence, and health status. Another key motivation of this research is to specify the mediators and moderators of these endpoints to address issues of mechanism of action and generalizability, respectively. Hierarchical Linear & Structural Equations Modeling will be used to explore how study variables interrelate to predict outcome. If successful, this research will provide important new intervention strategies that can be practically implemented with HIV+ drug abusers.

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- **Project Title: COGNITIVE CONSEQUENCES OF THE STRESS RESPONSE**

  Principal Investigator & Institution: Jennings, Peggy J.; Psychology; University of Wyoming Office of Research Laramie, Wy 82071

  Timing: Fiscal Year 2001; Project Start 01-AUG-2001; Project End 31-AUG-2002

  Summary: (provided by applicant) The Specific Aims of this study are to explore changes in cognitive processes associated with acute stress. The proposed study extends previous research suggesting that acute stress is associated with (a) a shift in cognitive processes, favoring enhanced reaction time and short-term memory at the expense of long-term memory consolidation, and (b) enhanced automatic cognitive processes and habitual responses. These Specific Aims are intended to elucidate the cognitive processes that may be associated with relapse (Specific Aim 1) and successful recovery (Specific Aim 2) from drug addiction. Specific Aim 1. Acute stress may facilitate the automatic cognitive processes that support habitual responses. Experiment 1 tests the hypothesis that acute stress is associated with enhanced automatic cognitive processes and reduced effortful cognitive processes. Using a well-established stress-induction paradigm (and a control condition) participants will complete cognitive tasks that allow dissociation of the influences of automatic and conscious (effortful) processes on cued recall of verbal material. This experiment will examine psychological, autonomic, and neuroendocrine indicators of acute stress and their relations with measures of automatic and effortful processes. Specific Aim 2. Previous research has established that acute stress is associated with enhanced reaction time and short-term memory at the expense of long-term memory consolidation. A state of relaxation, in contrast to acute stress, may be associated with a mode of cognitive processing that supports effortful, long-term, and declarative processes. Experiment 2 tests the hypothesis that an acute state of relaxation using a stress-reduction technique will be associated with enhanced long-term memory consolidation and reduced reaction speed and short-term memory' capacity.

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- **Project Title: CRH RECEPTORS AND STRESS RESPONSE PATHWAYS**

  Principal Investigator & Institution: Stenzel-Poore, Mary P.; Associate Professor; Molecular Microbiology and Immunology; Oregon Health & Science University Portland, or 972393098

  Timing: Fiscal Year 2003; Project Start 01-JAN-2003; Project End 31-DEC-2007

  Summary: (provided by applicant): The goals of this R01 application are focused on the recovery phase of the stress response and the concept that inappropriate adaptations to stress lead to stress-associated pathology. We propose that corticotropin-releasing hormone (CRH) and its receptors are critical in achieving proper initiation and termination responses to stress. We posit that the two known CRH receptors, CRH-R1 and CRH-R2, play distinct but complementary roles in mediating the response to stress and adaptations to stress. CRH-R1 has a clear role in the initiation of the response to stress. We propose that CRH-R2 is critical in the recovery phase of the response to stress. We will use CRH receptor knockout mice lacking one or the other of these receptors to assign their positions in neuroendocrine and behavioral responses to stress. These studies will be complemented by assessment of gene expression in central CRH pathways in CRH-R2 KO and wild-type mice exposed to acute and chronic stress. In addition, we shall use CRH-transgenic (CRH-tg) mice as a model of excess production of CRH which leads to pathologic neuroadaptations manifest by increased sensitivity to stress and altered recovery. The specific aims are: Aim 1. Determine whether CRH-R2 mediates neuroendocrine recovery responses to acute and chronic stress. Aim 2. Test the role of CRH-R2 in recovery from stress using behavioral measures. Aim 3. Determine the roles of CRH and glucocorticoids in delayed recovery from chronic stress in CRH-tg mice. Aim 4. Distinguish the relative roles of CRH receptors, CRH-R1 and CRH-R2, in mediating the effect of chronic stress and recovery in CRH-tg mice. These studies are paramount to determine the functions of CRH-R1 and CRH-R2 in orchestrating the stress response. Our long-term objective is to elucidate the role of CRH pathways in governing the recovery phase of the response to stress

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- **Project Title: DELAY OF GRATIFICATION--SUBSTANCE USE/ABUSE/DEPENDENCE**

  Principal Investigator & Institution: Chen, Kevin; Psychiatry; Univ of Med/Dent Nj Newark Newark, Nj 07103

  Timing: Fiscal Year 2001; Project Start 01-SEP-1998; Project End 31-AUG-2003

  Summary: (Applicant's Abstract) The proposed research will investigate the relationships between the willingness/ability to delay gratification and substance use, abuse and dependence, as well as other risk factors associated with continuous substance use, abuse and dependence by adolescents and young adults. Through an initial cross-sectional survey of 8th-12th graders and a planned follow-up in the near future, the investigator attempts to examine factors associated with further involvement in substance use, abuse or dependence after experimental use, and to make a significant step toward a basic theory of addictive personality. The specific aims of the research include: (1) to reconcile various concepts in delay of gratification and to develop a reliable and valid instrument to measure the multi-component concept, based on a paper-pencil instrument and some behavioral observations; (2) to explore the relationships between the willingness/ability to delay gratification and the degree of substance involvement among adolescents; (3) to examine systematically the risk factors associated with further involvement in substance use, abuse and dependence, given

lifetime use, particularly the roles of the willingness/ability to delay gratification; (4) to investigate the association between delay of gratification components and the known risk factors of substance use/abuse, such as stress-coping strategies, problem behavior, and harmful life-styles; and to evaluate their assumed roles in the etiology of substance use/abuse; (5) to inspect the relations between the willingness/ability to delay gratification and cessation and relapse of substance use and abuse. These aims will be achieved through a pre-test of 110 10th grader for instrument development, a school-based cross-sectional survey of 1,000 8th to 12th graders and a supplemental sample of 80-100 same-age adolescents who are seeking treatment or counseling services for substance-related problems. The correlation, ANOVA, multivariate regression and logit analyses, as well as structural equation models, will be used to examine a series of hypotheses on these relationships. Significant implications for drug prevention and treatment programs, and for the study of other health-related behaviors are anticipated.

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- **Project Title: DELVING INTERVENTION AND MINDBODY INTEGRATION**

  Principal Investigator & Institution: Price, Cynthia J.; Physiological Nursing; University of Washington Seattle, Wa 98195

  Timing: Fiscal Year 2002; Project Start 01-SEP-2002; Project End 31-AUG-2004

  Summary: (provided by applicant): In clinical practice, symptoms of dissociation and lack of bodily self-awareness are frequently associated with chronic physical pain and/or psychological distress due to illness, stress or trauma. These factors are thought to hinder the recovery processes, prompting mind-body researchers to examine alternative therapeutic approaches. The long-term goal of this research is to develop a foundation for research in body-oriented psychotherapy with bodywork as an integral component of the therapy. The immediate purpose of this proposal is to examine the effects of 'delving,' a body-oriented psychotherapy approach developed to facilitate integration of psyche and soma through bodily awareness. The specific study aims are to examine the efficacy of delving compared to massage, and to explore change associated with the therapeutic process across time. The study uses a 2-group, repeated measures design with 40 participants randomized to experimental or control group. Repeated-measures ANOVA, trend analyses, and correlational techniques will be used to test outcome efficacy and to explore the hypothesized intervention processes. This study is novel because it combines bodywork with highly specified focusing processes. Its significance lies in exploration of integration processes to enhance understanding of dissociation in general and of bodily self awareness in mind-body healing and health.

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- **Project Title: DEPRESSION-DIABETES MECHANISMS: URBAN AFRICAN AMERICANS**

  Principal Investigator & Institution: Musselman, Dominique L.; Assistant Professor; Psychiatry and Behavioral Scis; Emory University 1784 North Decatur Road Atlanta, Ga 30322

  Timing: Fiscal Year 2003; Project Start 18-JUL-2003; Project End 30-APR-2008

  Summary: (provided by applicant): African-Americans have increased prevalence of both diabetes and diabetes complications, reflecting combined psychobehavioral and metabolic dysfunction. Depression may contribute to both the genesis of Type 2 diabetes, and difficulties in management; we find that many African-Americans with diabetes also have depression, that depression is a factor in nonadherence, and that

nonadherence leads to poor glycemic control- a major cause of complications. (1) To establish the prevalence, socioecoloqic associates, and. qlycemic impact of depression, we will study patients presenting to the Grady Diabetes Clinic; evaluate socioeconomic status, literacy, and access to care; and relate depression to these factors and to metabolic control both at presentation and after one year of care. (2) To define the pathways through which depression contributes to metabolic imbalance, we will study patients exposed to progressive psychobehavioral challenge (depression and/or early life stress), and assess (a) hypothalamic-pituitary-adrenal activation; (b) counter-regulatory hormones; and (c) immunoinflammatory cytokines; in relation to (d) insulin resistance. (3) To determine the psychobehavioral and neurohormonal mechanisms of treatment, we will conduct a randomized, placebo-controlled, double-blind trial: patients with depression will receive **stress management** videotapes and either placebo or the selective serotonin reuptake inhibitor (SSRI) citalopram, and we will assess (a) overall glycemic control (HbAlc levels), and (b) patient adherence -to a prescribed diet/exercise program, to use of medications, and to scheduled return appointments; in relation to (c) depressive symptoms and (d) neurometabolic function as defined in Aim #2. These questions will be addressed by a multidisciplinary team with experience in both neuroendocrine analysis, clinical psychiatry, and diabetes management. The goal of this proposal is to use state-of-the-art psychobiological techniques to define the neurobehavioral and neurometabolic abnormalities and their response to treatment in urban African-Americans with type 2 diabetes and depression, as needed to improve basic understanding of disordered metabolism in this patient population and to help relieve their disparity in health.

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- **Project Title: DEVELOPMENT OF A VIDEO TO TEACH THE LIFESKILLS WORKSHOP**

  Principal Investigator & Institution: Williams, Virginia P.; Williams Lifeskills, Inc. 2020 W Main St, Ste 100 Durham, Nc 27705

  Timing: Fiscal Year 2001; Project Start 08-MAY-1998; Project End 31-AUG-2003

  Summary: This revised Phase II SBIR application proposes research and development related to NIMH research topic #l22B - "Development of effective videotape services aimed at mental disorder prevention and mental health promotion." The long term objective of this research is to develop a videotape - the "Williams LifeSkills Video" - that will enable both patients and wellness seekers to reduce psychosocial risk factors (depression, anxiety, hostility, and social isolation) that prior research has shown to be not only distressing in themselves but also to hasten the onset and worsen the prognosis of life-threatening medical illnesses. In our Phase I research, we developed and demonstrated feasibility of a prototype module of this video that presents the basics of one of the eight LifeSkills, Assertion. In this application for a Phase II award, we propose to develop and produce the complete 11-module Williams LifeSkills video and evaluate its effectiveness in reducing psychosocial risk factors and improving the ability to cope with real life stress as indexed by the biomarkers salivary cortisol and resting blood pressure and heart rate. Toward this end, we will conduct a randomized trial in which community volunteers with an elevation of at least one psychosocial risk factor are randomized to one of four groups: l) Wait List control (N=50); 2) Video Only (N=50); 3) LifeSkills Workshop Only (N=7l); or 4) LifeSkills Workshop plus Video (N=71). Psychosocial risk factors and biomarkers will be assessed prior to 3-week intervention or wait list periods, immediately afterwards, and at two and six month follow-up. We predict the Video alone and both Workshop conditions will be superior to Wait List in

reducing psychosocial risk factors acutely and during the follow-up period, and that the Workshop plus Video will be superior to Workshop Only in maintenance of benefits at six-month follow-up. Successful completion of this research program will result in technological innovation that enables health care providers and prevention programs to deliver - in standardized, reproducible and cost-effective manner - manualized training that reduces psychosocial risk factors and improves mental health and ability to cope with stress. PROPOSED COMMERCIAL APPLICATION: 1. Demand management for high utilizers of medical care in HMOs, estimated at 5 million patients with potential annual savings of $5 billion. 2. Corporate wellness/prevention programs with potential market composed of hundreds of corporations in the U.S. and worldwide and government agencies (where we already have two contracts).

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- **Project Title: DIABETES PREVENTION PROGRAM**

  Principal Investigator & Institution: Ehrmann, David A.; Associate Professor; Medicine; University of Chicago 5801 S Ellis Ave Chicago, Il 60637

  Timing: Fiscal Year 2001; Project Start 20-AUG-1994; Project End 30-JUN-2003

  Summary: We propose a multi-center trial in which subjects would be screened for inclusion and exclusion criteria. A primary prevention subgroup will consist of subjects with impaired glucose tolerance (IGT) by National Diabetes Data Group (NDDG) criteria with a fasting plasma glucose (FPG) equal to or more than 110 mg/dl. A secondary intervention subgroup will consist of individuals with NIDDM by NDDG criteria and a FPG < 140 mg/dl. The subjects will been randomized in a 2 x 2 factorial design to: 1) intensive program of diet, exercise and stress reduction versus standard dietary and exercise advice as well as 2) therapy with either glipizide or placebo. We propose that the diet/exercise intervention be modeled after the PATHWAYS program (diet, exercise and stress management) which has been validated as an effective method of weight reduction in inner city African American women. Four thousand individuals would be followed at twenty centers to test whether these interventions can: l) prevent the worsening of glucose tolerance in these subjects over 5 years and 2) reduce cardiovascular morbidity and mortality. We believe our center is uniquely prepared to participate in both the design and execution of this major trial aimed at developing a program that can be easily translated into public health measures to reduce the epidemic of NIDDM and its consequent morbidity and mortality.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: DISTRESS AND IMMUNE FUNCTION IN CERVICAL DYSPLASIA**

  Principal Investigator & Institution: Fang, Carolyn Y.; Assistant Member; Fox Chase Cancer Center Philadelphia, Pa 19111

  Timing: Fiscal Year 2001; Project Start 15-JUL-1999; Project End 30-JUN-2004

  Summary: The important role of certain types of human papillomavirus (HPV) in the etiology of cervical cancer is well-established. However, the contribution of possible psychosocial and immunological factors to the progression of high-risk HPV-related cervical lesions needs further exploration. The proposed project aims to examine the potential interrelations between psychosocial (i.e., stress, coping processes) and immunologic (e.g., natural killer cell activity) measures in women with mild dysplastic lesions of the cervix due to infection with highly oncogenic subtypes of HPV. Specifically, two studies are proposed. Study 1 is designed to identify potential behavioral and immunologic correlates of stress and coping, with a particular emphasis

on the effects of avoidant coping strategies on cancer risk and development. Eighty-four women referred for a follow-up colposcopy will complete baseline psychosocial assessments and provide a blood sample (for immune assays) prior to their colposcopy. Follow-up assessments will be conducted at 6-months and 12-months post-baseline. Psychosocial assessments include measures of stressful life events, cancer-specific intrusive and avoidant ideation, and a variety of coping strategies. Relevant immune measures include T-cell numbers, natural killer cell numbers and functional activity, and lymphocyte proliferative response to mitogen stimulation. In addition, medical outcome (regression, persistence, or progression of cervical lesions), demographic variables, and behavioral risk factors will be assessed. Study 2 will provide a preliminary evaluation of a relaxation and coping skills intervention that is designed to reduce cancer-related distress and provide effective coping skills for facilitating adherence to screening recommendations. The identification of potential interrelations among psychosocial, behavioral, and immunologic variables has important implications for cancer prevention and control programs as they can be used to guide the development of psychological and behavioral interventions aimed at reducing distress and avoidance, which may lead to improved behavioral, immunologic, and health outcomes.

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- **Project Title: DISTRESS, COPING, & INFLAMMATION IN WOMENS HEALTH**

  Principal Investigator & Institution: Lutgendorf, Susan K.; Associate Professor; University of Iowa Iowa City, Ia 52242

  Timing: Fiscal Year 2001; Project Start 01-DEC-2000; Project End 30-NOV-2001

  Summary: The goal of this study is to provide descriptive information on psychological morbidity and predictors of well-being, and critical data on the relationship of stress with symptom exacerbation, which will be utilized in treatment models for subjects with interstitial cystitis.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: EARLY EXPERIENCE AND ADULT RESPONSES TO STRESS**

  Principal Investigator & Institution: Sanders, Brian J.; Associate Professor; Psychology; Drake University 25Th St and University Ave Des Moines, Ia 50311

  Timing: Fiscal Year 2003; Project Start 15-AUG-2003; Project End 31-JUL-2006

  Summary: (provided by applicant): Chronic exposure to stress has been implicated in a variety of physical (e.g., cardiovascular, gastrointestinal, respiratory) and psychological (e.g., anxiety, depression) conditions, resulting in substantial human, medical and financial toll. Stress is not a unitary phenomenon, however, and although there are some common biological and behavioral response patterns in most species, each organism responds to stress in a unique manner that reflects its particular experience, life history and genetic code. Thus, much basic and applied science has focused on understanding the internal and external forces that modulate the response to stress, which in turn helps inform us about the etiology of a variety of stress-induced physical and mental disorders. The influence of early environmental events in shaping an organism's biology and behavior has been explored using a variety of paradigms and species, including pre- and post-natal manipulations in rodents (largely due to their relatively short pre- and post-natal timeframes). Studies using prenatal stressors, postnatal handling, maternal separation and cross-fostering all illustrate the biobehavioral sensitivity of the developing organism. These studies leave little doubt about the potent effect that

environmental experience can exert on an organism's developmental trajectory. However, these approaches may tell only part of the story. An organism's genotype is often expressed in the context of a dynamic interplay with external circumstances, in essence allowing environmental programming to shape the expression underlying genetic tendencies. The current proposal therefore seeks to extend these findings by using maternal separation and cross-fostering in a model of heightened reactivity to determine the effects of early experience on behavioral, cardiovascular, and neural response systems. Completion of the project will require behavioral observations, cardiovascular profiling, pharmacologic assessment, and central neural studies in order to direct multiple levels of analyses on the experimental questions. These data have the potential to provide information regarding the regulation of normal biobehavioral processes as well as suggesting etiologic mechanisms which may be involved in certain physical and mental disorders. Consistent with the mission of the AREA program, this project will provide a significant training and educational opportunity for undergraduate students.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: EFFECTS OF GROUP EMOTIONAL DISCLOSURE ON HEALTH OUTCOMES**

  Principal Investigator & Institution: Manier, David C.; Herbert H. Lehman College Bedford Park Blvd W New York, Ny 10468

  Timing: Fiscal Year 2003; Project Start 01-JUL-2003; Project End 30-JUN-2007

  Summary: Each year, millions of Americans are adversely affected by stress and trauma, which can have a serious impact on health (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). The goal of the proposed research is to analyze how stress and trauma affect health, and how a particular intervention ("emotional disclosure" in the context of group conversations) can lead to benefits. We propose to address these issues by studying the effects of trauma and stress on an urban, largely female, ethnically diverse population of students attending a public college in a large city. Trauma and stress can be harmful; however we hypothesize that the negative effects of trauma and stress on health and psychosocial adjustment can be mitigated through an "emotional disclosure" intervention (cf. Pennebaker, 1997a). The intervention involves expressing one's thoughts and feelings about specific stressful events in a succession of three twenty-minute sessions. We propose to study emotional disclosure in the context of group conversations. A research assistant will provide a group with a topic to discuss. One experimental group will discuss their thoughts and feelings about stresses caused by terrorism subsequent to 9/11. Another group will discuss their thoughts and feelings about the stress of attending college. A control group will talk about a concrete and mundane topic, such as their furniture. One recent study (Crow, Pennebaker & King, 2001) found that expressive writing can lead to reductions in blood pressure. If this is true, then this intervention (a relatively simple and economical form of stress management) may prove to be useful in reducing hypertension. Group disclosure has some advantages over individual disclosure that are familiar to clinicians, who recognize that group treatments can be more efficient and cost-effective (cf. Whitman, 1972; Guilford, 1972; Relinger, Bornstein, Bugge, Carmody, Zohn, 1977). Demonstrating that group disclosure can help to lower blood pressure in some individuals would therefore be a most interesting finding. Thus the proposed research seeks to examine the links between stressful/traumatic events and health in an ethnically diverse population, and to evaluate the effect of a group disclosure intervention on blood pressure (and other health-related indices). The emotional disclosure intervention also involves

participants producing narratives about important stressors. We will use computer text analysis and qualitative analysis to study these narratives as sources of detailed information about the stresses and traumas faced by college students, and how these stresses vary depending on demographic variables (cf. Pennebaker & Francis, 1996).

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: EFFICACY OF HEALING TOUCH IN STRESSED NEONATES**

  Principal Investigator & Institution: Mcdonough-Means, Sharon I.; Pediatrics; University of Arizona P O Box 3308 Tucson, Az 857223308

  Timing: Fiscal Year 2001; Project Start 20-SEP-2001; Project End 31-AUG-2003

  Summary: (provided by applicant): Stress is an inherent part of the experience for the neonate who is critically ill and unstable during the initial days in the Neonatal Intensive Care Unit (NICU). Individualized developmentally appropriate nursing care is standard of care (SOC) and provides significant reduction in stressful stimulation. Developmentally appropriate, nurturing stimulation is often lacking. Touch is critical in development of neonatal self-regulation. Healing Touch (HT), a gentle touch and energy healing therapy, is proposed to ameliorate stress and enhance regulatory system development. This R21 feasibility study will involve 40 critically-ill neonates on admission to the NICU, in a parallel, randomized controlled trial, single blind design of 2 groups (N=20 each). In each day for a total of 7 days, each subject will have 2 study conditions: a significant, routinely-occurring, specified stressor followed immediately by either HT+SOC or SOC alone. The treated group will have HT + SOC following a stressor for one study condition and SOC alone for the second study condition; the SOC group will have only SOC for both study conditions. This design allows the treated group to be paired to its own control on each day. During each study condition, markers of stress response will be collected: physiological [heart rate (HR), respiratory rate (RR), oxygen saturation (Sa02) and respiratory sinus arrhythmia (RSA) for cardiac vagal tone (Vna)] and behavioral [Brazelton states 1-6 and cues (self-regulatory and stress) per Bigsby]. The primary hypotheses (all in comparison to SOC alone) are: a) HT will result in improved stress recovery within each study condition, reflected by HR, RR, and Sa02;.b) HT will result in an accumulative improvement in the stress response from day 1-7, reflected by HR, RR and Sa02; c) In infants > 30 weeks gestation, HT will result in + _ improved stress response within each study condition, reflected by increased amplitude of RSA and increased cardiac vagal tone (Vna), or stress reactivity; and d) In infants > 30 weeks gestation, HT will result in an accumulative + _ improvement in the stress response from day 1-7, reflected by increased amplitude of RSA and increased cardiac vagal tone (Vna) both in stress reactivity (measured during the stress response) and in stress vulnerability (measured during sleep). Secondary hypotheses are: a) HT will result in improved neonatal behavioral state and cues during stress recovery within each study condition, as compared with standard of care alone; b) HT will result in accumulative improvement in behavior from day 1-7, during the stress response, as reflected by decrease in stress cues, increased self-regulatory cues, more relaxed behavioral state or decreased frequency of state change. Data analysis will be done using comparison measures [paired, grouped and multiple T-tests]. To assess the data longitudinally, a general linear mixed model will be used; [repeated measures analysis of variance and GEE model]. This study will begin our research in enhancement of neonatal regulatory system development and response to stress and will lay a foundation for larger scale prospective effectiveness and mechanism studies.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: ENHANCING SUPPORT FOR WOMEN AT RISK FOR HEART DISEASE**

  Principal Investigator & Institution: Toobert, Deborah J.; Research Scientist; Oregon Research Institute 1715 Franklin Blvd Eugene, or 97403

  Timing: Fiscal Year 2001; Project Start 12-APR-1999; Project End 31-MAR-2003

  Summary: ABSTRACT=The overall goal of this project is to test a practical, theory-based intervention to achieve long-term behavior change for women with Type 2 diabetes at high risk for developing coronary heart disease (CHD). Epidemiological and clinical studies suggest that diabetes is associated with increased risk for CHD that is greater in women than in men. CHD is a major cause of death and functional limitations in women, but the vast majority of CHD studies have primarily involved middle-aged men. There is convincing research evidence that healthy lifestyle behaviors, including low-fat diet, physical activity, **stress management,** smoking cessation, and social support, can reduce CHD risk. We will conduct a randomized trial to compare short-term (6-month) outcomes in women receiving usual care compared to a modified Ornish-type comprehensive lifestyle management (CLM) intervention. After 6 months, women in the CLM condition will be randomized to one of two approaches for providing support either lay-led group support or personalized computer-based support - to evaluate these strategies in enhancing longer-term maintenance of effects. Outcomes will include multiple CHD lifestyle behaviors (e.g., dietary intake, exercise levels, **stress management,** smoking cessation), physiological risk factors associated with CHD (e.g., serum lipids, hypertension, weight, vascular reactivity), HbA1c and quality of life (e.g., depression, functioning).

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: HEALTH PROMOTION FOR WOMEN WITH FIBROMYALGIA**

  Principal Investigator & Institution: Stuifbergen, Alexa K.; Professor and Associate Dean for Researc; None; University of Texas Austin 101 E. 27Th/Po Box 7726 Austin, Tx 78712

  Timing: Fiscal Year 2003; Project Start 30-SEP-1996; Project End 31-MAY-2007

  Summary: (provided by applicant): Women with chronic disabling conditions such as fibromyalgia syndrome (FMS) must manage a wide variety of disease-related, intrapersonal, and environmental demands to maintain their health and quality of life. Engaging in health-promoting behaviors is one strategy recommended to manage disease symptoms and enhance quality of life (USDHHS, 2000). The purpose of this four-year study is to test a theoretically and empirically based intervention to promote the health and well being of women with the chronic disabling condition of fibromyalgia. This wellness intervention, originally developed and tested in a randomized clinical trial of women with MS (N=113), resulted in significant improvements in self-efficacy, health behaviors and improvements in pain, and mental health. The specific aims of this study are to examine the effects of the adapted wellness intervention on self-efficacy, resources, barriers, health behaviors and health outcomes for women with fibromyalgia. A sample of 160 women with FMS will be recruited to participate in a randomized clinical study to determine the effects of this wellness intervention that includes an eight-week health promotion/behavior change component and 3 months of follow-up phone support. Women will be randomly assigned to either the intervention or the attention control group. Women in the intervention group will receive content regarding **stress management,** lifestyle adjustment, physical activity, nutrition and women's health issues with an emphasis on the unique adaptations and associated skills required to empower women with the tools for exercising personal

control over their health behaviors. The effects of the intervention on outcome variables will be assessed over an 8-month period with measurements at baseline, 2 months (immediately after the educational/skill-building component), 5 months (after 3 months of phone support) and at 8 months. Hierarchical linear modeling techniques will be used to determine the significance of group by time interactions across the four measurement periods.

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- **Project Title: HORMONES, QUALITY OF LIFE & BREAST CANCER SUPPORT GROUPS**

  Principal Investigator & Institution: Roper, Kimberly D.; Medical Oncology; University of Colorado Hlth Sciences Ctr P.O. Box 6508, Grants and Contracts Aurora, Co 800450508

  Timing: Fiscal Year 2002; Project Start 30-SEP-2002; Project End 31-AUG-2004

  Summary: (provided by applicant): Recent studies have indicated a link between social support provided by support groups and outcome in cancer patients. These support groups not only affect the emotional state of the patient, but they may also change the regulation of stress hormones that influence the immune system. Indeed, some studies suggest patients who attend support groups survive longer. Much of what is known is either anecdotal or poorly documented scientifically. Few scientific studies have followed in a systematic manner the behavioral and hormonal responses of participants in these support groups. This study will investigate the acute and long-term effects of an intense weekend psychosocial workshop on stress hormone levels and several psychosocial variables including mood, quality of life, stress and coping. In the proposed study, 30 breast cancer patients will be recruited from a local breast cancer center and randomly assigned to treatment or control group. Participants will complete measures of coping, mood, stress and quality of life upon entry, immediately after the workshop, and at one and six months and one-year follow-ups. Participants will provide saliva samples for assessment of stress hormones in conjunction with psychological testing. Half of the participants will participate in a Qualife Breast Cancer Weekend Wellness workshop consisting of approximately 20 hours of experiential education to improve wellness and coping. After the six-month assessment, the remaining participants will receive the same treatment. The primary hypothesis is that the workshop will normalize regulation of stress hormones, decrease stress, and improve mood, coping, and quality of life.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: ILLNESS BEHAVIOR AND SOMATIZATION IN CHILDREN**

  Principal Investigator & Institution: Walker, Lynn S.; Professor of Pediatrics; Pediatrics; Vanderbilt University 3319 West End Ave. Nashville, Tn 372036917

  Timing: Fiscal Year 2001; Project Start 01-AUG-1997; Project End 31-MAY-2006

  Summary: (provided by applicant): The long term goal of this program of research is to understand biopsychosocial processes associated with children's illness behavior (i.e., somatic complaints, disability, health service utilization). We are particularly concerned with children who maintain extensive illness behavior that is out of proportion to medical findings. Children with recurrent abdominal pain (RAP) serve as a prototype for our study of children with high levels of illness behavior not associated with significant organic disease. Our recent work showed that the within-subject correlation between daily stressors and somatic complaints was significantly stronger for children

with RAP than for Well children, suggesting that children with RAP may be distinguished from their peers by a tendency to react to stress with somatic symptoms. In the next stage of this research, our first major goal is to identify mechanisms linking environmental and somatic stressors to illness behavior. Specifically, using experimental methods in a laboratory setting, we will: (Aim 1) assess the influence of a challenging cognitive task on children's physiological activity, selective attention to somatic cues, and symptom reporting; and (Aim 2) assess the influence of visceral stimulation and parental responses on children's pain complaints. In addition, we will create an index of stress reactivity based on laboratory performance and will assess the utility of that index in predicting health outcomes. Our second major goal is to identify subgroups of RAP that may have different treatment needs. Specifically, we will: (Aim 3) identify diagnostic subgroups of patients with RAP and compare these with respect to symptomatology, psychosocial characteristics, and course of illness over 3 months, and (Aim 4) cross-validate a typology of pain coping profiles for patients with RAP and assess the utility of these profiles in predicting health outcomes. The proposed project combines self-report and psychophysiological measures, experimental laboratory methods, and a longitudinal design. Participants in the Baseline Assessment will include 396 patients with RAP and 842 Well children (ages 8-15). From these groups, children and their parents will be recruited for the Laboratory Computer Task (n =200) and the Laboratory Water Load Task (n = 220). Study results have the potential to yield insights into mechanisms linking stress to illness behavior in RAP and, in addition, to identify intervention targets that prepare children and their parents to better manage RAP.

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- **Project Title: IMPACT OF LIFESKILLS TRAINING ON BLOOD PRESSURE IN YOUTH**

  Principal Investigator & Institution: Barnes, Vernon A.; Williams Lifeskills, Inc. 2020 W Main St, Ste 100 Durham, Nc 27705

  Timing: Fiscal Year 2003; Project Start 25-SEP-2003; Project End 31-AUG-2004

  Summary: (provided by investigator): Essential hypertension (EH) affects one out of four adults and is a primary risk factor for coronary heart disease (CHD), the leading cause of death in the US. Essential hypertension (EH) has its patho-biologic origins in childhood. Since blood pressure (BP) ranking tracks from late childhood onward, adolescents with high normal BP are at risk for development of EH. Clinical research has shown behavioral interventions to have great promise in reducing BP levels. To date few such programs targeting students have been implemented in the high school setting. This application requests support to adapt the Williams LifeSkills (WLS) workshop (a protocol-driven 12-session stress/anger management workshop) for use in high schools. This study will develop an innovative intervention designed to reduce ambulatory BP, BP reactivity to stress, hostility, anger, and school-related problem behaviors among a population of adolescents with high normal BP. The specific aim of Phase I is to identify adaptations in format and timing necessary to successfully conduct the 12-session WLS Workshop in a high school setting. This aim will be accomplished through-- a) focus groups and interviews with students to guide fine-tuning of the program content; b) conducting two pilot cycles of workshop, to obtain feedback from the students regarding course content, style of presentation and materials. This project will adapt a highly developed anger/stress management program that will become available for Health Education curriculums in schools across the country. If successful, this project presents a tremendous potential for not only reduction in hostility, anger and school-related conduct problems, but more importantly for prevention of

cardiovascular disease via reduced BP and a concomitant enormous reduction in health care costs.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: IMPACT OF MIND-BODY INTERVENTIONS POST ORGAN TRANSPLANT**

  Principal Investigator & Institution: Gross, Cynthia R.; Professor; Experimental College; University of Minnesota Twin Cities 200 Oak Street Se Minneapolis, Mn 554552070

  Timing: Fiscal Year 2003; Project Start 01-AUG-2003; Project End 30-APR-2008

  Summary: (provided by applicant): Solid organ transplant recipients require life-long immunosuppressive therapy that leads to side effects, complications and chronic symptoms, and reduces health-related quality of life. Pharmacologic options for managing symptoms increase the risks of side effects and drug interactions, and may reduce adherence by complicating an already challenging medication regimen. In contrast, mind-body based complementary therapies, such as mindfulness-based stress reduction (MBSR), may be ideal to treat distressing symptoms and negative emotions after transplantation. Our long-range objective is to develop evidence-based recommendations for non-pharmacologic strategies that provide symptom relief to transplant recipients, and are safe, practical and cost-effective. The specific aims are to: 1) Test the effectiveness of a MBSR program on symptom management (as measured by well-validated, self-report scales for symptoms of depression, anxiety and sleep disturbance), objective sleep changes, health-related quality of life and overall quality of life in transplant recipients at 6- and 12-mos follow-up; and 2) Evaluate the impact of this MBSR program on health care utilization and costs at 6- and 12-mos follow-up. We will randomize patients (N=150) to: 1) a MBSR intervention arm (8 wks of group instruction in mindfulness meditation techniques followed by home practice combined with individualized telephone monitoring); or 2) a health education (HE) active control arm, delivered in a format to match MBSR for instructor attention and group support. The sample will consist of kidney, kidney/pancreas, pancreas, lung, liver, heart or heart-lung transplant recipients at least 6-mo after transplant surgery. A two-stage randomization scheme will form a temporary, Delayed-Intervention (DI) inactive control arm for internal validation. The DI group will be randomized to MBSR or HE after 26 weeks of observation. This is a low cost, low risk intervention that, if successful, could be replicated easily, and result in important reductions in health care costs while improving the well being of patients with organ transplants.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: INTERACTIVE CD-ROM FOR COPING WITH BREAST CANCER**

  Principal Investigator & Institution: Levin, Will; Mpower Llc 261 E 12Th Ave Eugene, or 07401

  Timing: Fiscal Year 2002; Project Start 02-SEP-2002; Project End 31-AUG-2003

  Summary: (provided by applicant): Breast cancer is the most frequently diagnosed cancer in American women. One in eight women will develop breast cancer in her lifetime. Understandably, a diagnosis of breast cancer is frequently associated with high levels of psychosocial distress. Participation in psychosocial support groups has improved coping, improved immune response and increased survival. Unfortunately, it is estimated that only 10% of eligible breast cancer patients attend support groups. There is a need for an alternative intervention for addressing psychosocial stress among women with breast cancer. The goal of this study is to develop and pilot test an

interactive instructional program that will teach practical skills relevant to women with breast cancer for enhancing social support and decreasing the negative effects of stress. The program will be evaluated by recruiting 60 women with a diagnosis of breast cancer, and obtaining interview and questionnaire data before and after a four week trial of using the CD-ROM. Phase II will extend and enhance the content and media richness of the product, and will apply a randomized controlled evaluation research design. A prototype internet-deliverable product will also be developed. The products will be marketed and disseminated through cancer care facilities and other health care institutions.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: INTERGENERATIONAL TRANSMISSION OF ILLNESS BEHAVIOR**

  Principal Investigator & Institution: Levy, Rona L.; Professor; None; University of Washington Seattle, Wa 98195

  Timing: Fiscal Year 2003; Project Start 01-APR-1999; Project End 31-MAR-2007

  Summary: (provided by applicant): This is an application for competitive renewal of RO1 HD36069. Recurrent Abdominal Pain (RAP) is a disorder in children for which there is no identifiable organic or physiological cause, yet which has significant societal and personal costs. We have conducted a series of studies which suggest that illness behavior is, at least in part, learned during childhood when parents model sick role behavior or respond to their children's somatic complaints in a way that encourages or reinforces sick role behavior. These results suggest that interventions to teach parents to reduce modeling and reinforcement of excessive illness behavior would be beneficial for children with RAP. However, prior research on interventions for RAP which have incorporated such parental training have been methodologically limited. The aim of the proposed study is to evaluate a comprehensive social learning and cognitive behavior therapy approach for children with recurrent abdominal pain derived from our previous research under this grant. This study will test three primary hypotheses: 1) Children in a social learning and cognitive behavior therapy group (SLCBT) will exhibit a greater decrease in symptoms of RAP, health care utilization for RAP symptoms, and functional disability, including school absences, at the end of treatment and during follow up than children in an education and support alone condition (ES). 2) Children in the SLCBT condition will demonstrate greater use of cognitive coping, relaxation and **stress management** skills, and parents in this condition will demonstrate greater reductions in solicitous responses to illness behavior at the end of treatment and during follow up than children and parents in the ES condition. 3) Children in the SLCBT condition will exhibit greater reductions in anxiety, depression, and somatization at the end of treatment and during follow up than children in the ES condition. A secondary objective will be to Investigate the influence of potential moderating variables on treatment effects. To test these hypotheses, we propose to randomize 200 children with RAP to two conditions: 1) a SLCBT and 2) an ES comparison condition that controls for therapist attention and contact. Information about children's symptoms and illness behaviors, among other variables, will be collected at baseline, end of treatment, and three, six, and 12 months post-treatment.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: INTERNET-BASED STRESS MANAGEMENT FOR COLLEGE STUDENTS**

  Principal Investigator & Institution: Chiauzzi, Emil J.; Director of Multimedia Development; Inflexxion, Inc. Newton, Ma 02464

Timing: Fiscal Year 2003; Project Start 01-APR-2001; Project End 30-JUN-2005

Summary: (provided by applicant): The proposed Phase II project is intended to further develop an interactive, web-based multimedia program for college students that is designed to promote increased awareness of stress-related health risks and motivate stress reduction practices, and is called MyStudentbody.com: Stress. The proposed program will be offered through colleges and universities to help students understand stress and learn effective, tailored **stress management** strategies. The first step in Phase II will be to complete production and usability testing of the prototype to be field-tested. The prototype will then be field tested with college students to assess end-user satisfaction and acceptance of the website. In the Efficacy Study four main hypotheses will be assessed. Compared to students in the Control I (educational website) and Control II (assessment only) groups, students exposed to MyStudentBody: Stress will demonstrate 1) significantly lower reported stress, 2) significantly improved college adjustment, 3) significantly lower psychological distress, and 4) significantly greater self-reported use of active coping strategies. The final product will be marketed as part of a comprehensive college health website.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: INTERPERSONAL DISCLOSURE PROCESSES AND HEALTH**

  Principal Investigator & Institution: Pennebaker, James W.; Professor and Chair; Psychology; University of Texas Austin 101 E. 27Th/Po Box 7726 Austin, Tx 78712

  Timing: Fiscal Year 2001; Project Start 01-AUG-1996; Project End 30-JUN-2005

  Summary: Writing or talking about upsetting emotional experiences is associated with improvements m mental and physical health, including lower rates of depressive symptoms, adjustment difficulties, and well as common illnesses and physical symptoms. The goal of this project is to explore the social, physiological, and personality correlates of this phenomenon. Over the five year proposed grant period, the four issues will be addressed: 1. Defining and measuring social integration and coherence using a recording device that measures real-world language and social behaviors. In developing a social integration model, the components to be measured include time talking in-depth with others, more concentrated time on task, greater correspondent between speaker and listener, and changes in linguistic content congruent with markers of physical and mental health - with particular attention to markers of stress, depression, and psychological adjustment. 2. Learning how writing about an emotional experience increases levels of social integration and coherence compared with writing about control topics. This model will be tested with healthy college students, medical students facing their first dissections, and stressed city employees. In addition to changes in social behaviors, the various studies will examine changes in depression, cortisol levels, and autonomic nervous system activity before and after writing. 3. Identifying individual differences to learn who is most likely to benefit from disclosive writing. The first lab study will determine if individuals who are most likely to benefit from emotional writing are the same individuals who are least likely to benefit from superficial writing. A second study will learn who benefits from writing by using a variety of questionnaires and tasks to identify those people who can best construct narratives and/or benefit independently from constructing narratives. A third project will determine the heritability of language usage by drawing on an archive of data from Mz and DZ twins raised together and apart. 4. Mapping how individuals talk, interact, and move about in the natural environment using the environmental monitor recording procedure. Once established, one or more studies will examine how individuals use their social resources when dealing with significant emotional upheavals in their

worlds. Measures of physician use, autonomic functioning, and illness reports will serve as outcome measures and correlates in each of the studies.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: INTERVENTION FOR COPING WITH HIV AND TRAUMA**

  Principal Investigator & Institution: Sikkema, Kathleen J.; Associate Professor; Psychiatry; Yale University 47 College Street, Suite 203 New Haven, Ct 065208047

  Timing: Fiscal Year 2001; Project Start 30-SEP-2000; Project End 31-AUG-2004

  Summary: (adapted from the applicant's abstract): The prevalence and adverse emotional consequences of sexual abuse and trauma are well established. Although descriptive studies have established the relationship between a history of child sexual abuse and HIV risk behavior, there has been limited research focused on the experience and impact of sexual abuse histories among people living with HIV disease. This application requests four years of support to evaluate the effectiveness of a secondary prevention intervention for people with HIV infection who are coping with traumatic stress related to sexual abuse. The intervention model integrates the cognitive theory of stress and coping and the transactional framework for under- standing sexual abuse outcomes. The multi-session group intervention will include five key components: 1) development of social support to establish a sense of safety and stability; 2) identification and expression of emotions related to past trauma and current HIV-related stressors; 3) development of adaptive coping skills and mastery over trauma symptoms and HIV-related stressors; 4) cognitive and behavioral skills to enhance self-care activities, including HIV medication adherence, substance abuse treatment, and reduction of sexual risk behaviors; and, 5) goal setting, problem-solving and support-seeking skills development for maintenance of behavioral and emotional changes. 240 men and women with HIV infection who are experiencing trauma-related stress and psychiatric distress will be randomly assigned to an HIV and trauma coping group or a support group comparison condition. Assessments collected at baseline, post-intervention, and 4-, 8- and 12- month follow-up points will be used to determine intervention outcome effects. It is hypothesized that, relative to HIV-infected participants assigned to the comparison condition, HIV infected participants in the HIV and trauma coping intervention will exhibit: (a) reduced psychological distress as assessed by measures of traumatic stress, global psychiatric distress, depression and anxiety; (b) development and implementation of adaptive ways of coping with HIV and traumatic stress; (c) higher ratings of quality-of-life; (d) decreased substance use and sexual risk behavior; (e) increased treatment adherence and health care services utilization; and, (f) improved health status as indicated by HIV symptomatology, CD4 cell and viral load counts. If successful, this research will identify an HIV and trauma coping intervention model for the secondary prevention of mental health disorders and disease progression among HIV-infected persons, which is urgently needed for medical and mental health programs that serve persons with HIV infection.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: MECHANISM OF FLAVOPROTEIN REDUCTASES**

  Principal Investigator & Institution: Blanchard, John S.; Professor; Biochemistry; Yeshiva University 500 W 185Th St New York, Ny 10033

  Timing: Fiscal Year 2001; Project Start 01-APR-1984; Project End 31-JAN-2005

  Summary: (adapted from applicant's abstract): This competing continuation application proposes the extension of mechanistic and structural analyses of flavoenzymes that

function in key physiological and protective roles in microorganisms. Typical examples of flavoprotein disulfide reductases that serve this function include the sequence-related alkylhydroperoxide reductase, NADH peroxidase, glutathione reductase and the trypanosomal ortholog, trypanothione reductase, found uniquely in parasitic protozoans. With the determination of the genome sequence of the human pathogenic bacterium, Mycobacterium tuberculosis, the identification of putative flavin-containing enzymes using advanced sequence searching methods has become possible. Using these methods, a number of genes have been identified which are likely to encode flavoproteins. The subsequent cloning of these genes, and the expression and purification of the gene products has confirmed putative assignments based on primary sequence considerations. One example of the application of this method includes the identification of the flavin-containing disulfide reductase that catalyzes the reduction of the oxidized form of mycothiol; a recently discovered, structurally unique thiol present at high concentrations in mycobacteria and a limited number of additional bacterial species. It is likely that this enzyme is responsible for maintaining a reducing intracellular environment, and may contribute to the ability of the bacterium to survive the hostile oxidizing environment encountered in the macrophage phagolysosomal compartment. Two other sequence-related flavoenzymes have been identified, and the principal investigator will attempt to define the physiological function of these two proteins, determine their chemical mechanism and attempt to determine their three-dimensional structure. The principal investigator proposes that these latter enzymes play key roles in the oxidative **stress management,** survival of the organism and propagation of the infection. The experiments described are designed to assess these roles, and if found to be correct, could ultimately lead to the development of specific inhibitors with chemotherapeutic utility.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: MEDITATION FOR HIGH BLOOD PRESSURE**

  Principal Investigator & Institution: Lane, James D.; Psychiatry; Duke University Durham, Nc 27706

  Timing: Fiscal Year 2001; Project Start 01-SEP-2001; Project End 31-AUG-2004

  Summary: (provided by applicant): High blood pressure is a major public health problem that affects nearly 25 percent of adults in the United States and contributes to increased risks of morbidity and mortality via cardiovascular and renal diseases. Although anti-hypertensive medications are often effective in the treatment of hypertension, non-pharmacological therapies are recognized as important first-line or adjunctive treatments for blood pressure management. A variety of relaxation and **stress management** techniques have been tested for their potential contributions to blood pressure control through stress reduction. Among these interventions, meditation training has shown the greatest promise as an adjunctive behavioral treatment for lowering blood pressure. This project investigates the effectiveness of a meditation-training program for the reduction of blood pressure. The 3-year study is a randomized, controlled clinical trial involving 120 adult men and women with hypertension or high-normal blood pressure recruited from the community. After extended screening and baseline testing, participants will be assigned at random to receive the experimental meditation training program (N= 60), to receive a progressive muscle relaxation training program that serves as a placebo control (N = 30), or to continue with usual care (N= 30). Post-treatment testing will be conducted 1, 2, and 3 months after training begins. Treatment outcome will be assessed by changes in laboratory-based and 24-hour ambulatory measures of blood pressure from baseline to follow-up. In addition, the

study will test whether stress-reduction is a plausible mechanism that can account for clinical outcomes, using measurements of treatment-related changes in neuroendocrine and subjective measures of stress. Finally, the study will investigate the characteristics of those who respond best to this treatment and determine whether those individuals who begin training with higher levels of stress and anxiety show greater improvements in blood pressure and measures of stress than those who begin with lower levels. Meditation training may be a cost-effective non-pharmacological treatment for the management of high blood pressure. The results of this trial will advance our understanding of the potential benefits of this behavioral intervention, the mechanisms through which it works, and the kind of person who will benefit most from it.

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- **Project Title: MINDFULNESS BASED STRESS REDUCTION & MYOCARDIAL ISCHEMIA**

  Principal Investigator & Institution: Sheps, David S.; Professor and Director; Medicine; University of Florida Gainesville, Fl 32611

  Timing: Fiscal Year 2003; Project Start 01-MAY-2003; Project End 30-APR-2008

  Summary: (provided by applicant): Acute and chronic psychological stress has been shown to be a risk factor for cardiac events. More recently, with the advent of new technology allowing cardiac imaging, acute psychological stressors have been shown to produce myocardial ischemia in certain subsets of patients with coronary artery disease. Several studies have shown that the production of myocardial ischemia in response to acute psychological stress in the laboratory is a marker for adverse events in patients with coronary artery disease. Several pathways by which psychologically induced stress may trigger ischemic events have been proposed and a number of studies have provided evidence that stress effects ischemic events via these pathways. Stress interventions have been shown to have a positive impact on CAD outcomes, with only one thus far testing their effects on psychological stress induced ischemic events. Further, some studies have reported positive results with coronary risk factors using meditation and yoga. Current clinical meditation literature suggests that a mindfulness meditation based stress reduction program (i.e., multicomponent, psychoeducational program based in mindfulness meditation which cultivates an ability to pay attention to one's moment-to- moment experiences in a nonjudgemental, nonreactive fashion) will be able to reduce stress reactivity in CAD patients. It is predicted that such reduction in stress reactivity will result in reduced radionuclide imaged perfusion defects during a laboratory mental stress task. Although it has not been used with heart patients, it has demonstrated good results with both stress and symptomology in the general and other medical populations. We believe that similar results will be seen in CAD patients with effects acting through the following pathways; 1) decreased sympathetic tone, and 2) increased parasympathetic tone. The overall goal of the proposed study is to evaluate the efficacy of a meditation based stress reduction program for the reduction of mental stress induced ischemia.

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- **Project Title: MINDFULNESS-BASED ART THERAPY FOR CANCER PATIENTS**

  Principal Investigator & Institution: Monti, Daniel A.; Psychiatry and Human Behavior; Thomas Jefferson University Office of Research Administration Philadelphia, Pa 191075587

  Timing: Fiscal Year 2001; Project Start 24-SEP-2001; Project End 31-AUG-2003

Summary: (provided by applicant): Psychosocial interventions, especially supportive-expressive group therapies, have been associated with significant improvements in health status, quality of life and coping behaviors, in patients with cancer. The purpose of the proposed pilot research study is to investigate a newly developed group therapy for cancer patients, MBAT. This proposed, randomized, controlled study follows a successful preliminary investigation of MBAT conducted at Thomas Jefferson University Hospital. MBAT integrates known benefits of art therapy, group therapy, and mindfulness-based stress reduction. Each of these fundamentally different modalities has documented usefulness in the treatment of cancer patients. The multi-modal approach is designed to enhance both the supportive and expressive aspects of the group experience. The study will be done with 96 patients who have a variety of cancer types. Participants will be matched for age and assigned randomly to either the MBAT experimental group or a non-intervention control group. Both groups will continue to receive their usual oncologic/medical care. The MBAT program consists of eight weekly meetings of two and one half-hours in length. At the end of the eight weeks, participants in the control group will be crossed over to the experimental intervention arm for an additional eight weeks. Participants will be assessed pre- and post-intervention on measures of health-related quality of life, psychological distress, and coping, using standardized outcome instruments (SF-36, SCL-90-R and COPE). Our long-term goal is to collect sufficient data to determine the overall efficacy of this promising intervention and to identify which patients are particularly likely to benefit from MBAT.

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- **Project Title: MODIFYING RISK IN YOUTH WITH HIGH BLOOD PRESSURE**

  Principal Investigator & Institution: Saab, Patrice G.; University of Miami Coral Gables Box 248293 Coral Gables, Fl 33134

  Timing: Fiscal Year 2001; Project Start 01-JUL-1986; Project End 31-JUL-2006

  Summary: (provided by applicant): During the past 4 years, this project has examined the aggregation of cardiovascular disease risk factors among adolescents having either elevated or normal blood pressure (BP). It was found that adolescents with elevated BP had greater body mass, a poorer lipid profile, elevated blood glucose, decreased insulin sensitivity, and increased left ventricular mass (LVM). In preliminary studies we have provided evidence that a program involving **stress management,** diet and exercise counseling can reduce body weight, enhance physical activity, and lower BP. The purpose of the competitive project renewal is to examine the long-term effects of 3 intervention conditions: 1) a 3 month self-management intervention program partially completed as part of the currently funded supplement; 2) a 6 month augmented self-management skill acquisition intervention program; 3) and usual care. The self-management interventions are designed to increase physical activity, improve nutrition, and enhance **stress management.** The study has three primary objectives: 1) to determine the impact of the interventions on lifestyle behaviors, cardiovascular risk factors, and preclinical disease states as indexed by LVM, endothelial function, and carotid intima medial thickness; 2) to examine the maintenance of behavior change and treatment effects across conditions; and 3) to determine what factors are associated with maintenance. Adolescents withth persistently elevated BP at or above the 90 percentile adjusted for age, gender, and height will be randomized to one of three intervention conditions after the pretreatment assessments. The 3 conditions vary in level of demand. The 3 month self-management condition involves 10 group sessions plus some parental involvement. The augmented self-management condition involves 12 group and 6 individual sessions over 6 months with active parental involvement. Both self-

management interventions will be followed by 6 monthly maintenance phone calls. Usual care involves one session in which the participants are provided with a participant workbook (summarizing the content and recommendations of the self-management intervention) and are asked to follow the suggestions. Participants in the 3 month self-management condition and the usual care condition will be reassessed at post-treatment (corresponding to 3 months post randomization), at 3 month follow-up, and at 6 months post treatment. Similarly, participants in the augmented self-management condition will repeat assessments following 3 months and 6 months of treatment and at 3 and 6 months post treatment. This design permits examination of treatment effects, and both short-term and long-term maintenance.

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- **Project Title: NEUROENDOCRINE MODULATION OF NEONATAL ANTIVIRAL IMMUNITY**

  Principal Investigator & Institution: Bonneau, Robert H.; Assistant Professor; Microbiology and Immunology; Pennsylvania State Univ Hershey Med Ctr 500 University Dr Hershey, Pa 17033

  Timing: Fiscal Year 2001; Project Start 16-JUL-2001; Project End 30-JUN-2006

  Summary: The neonate is an immunodeficient host that is severely compromised in its ability to generate an immune response to pathogens which may be encountered at, or shortly after birth. Thus, neonates rely heavily on maternally-derived immunity, obtained both prenatally via transplacental means postnatally via the colostrums and breast milk, to protect them from a variety of infections during the first few weeks of like. The broad objective of this application is to determine the impact of maternal psychological stress and its associated production of neuroendocrine-derived peptides and hormones on neonatal immunity and susceptibility to infectious disease. The rationale for the proposed research is based on the fact that, in the adult, there is substantial evidence that psychological stress significantly affects immune function via a variety of neuroendocrine-associated mechanisms. However, despite the clear existence of neuroendocrine- immune interactions in adults, there is a dearth of knowledge as to the role that such interactions play in the neonate and young infant and, in particular, how such interactions affect immune-mediated defense against pathogens. The studies described in this proposal will use a well-established murine model of herpes simplex virus (HSV) infection to test the hypothesis that pre- and postnatal maternal stress (both acute and chronic), and stress-associated activation of the maternal hypothalamic-pituitary adrenal (HPA) axis alters both the transfer of maternally-derived antibody to the neonate and the levels of maternal corticosterone to which the neonate and young infant are exposed. It is expected that both of these factors will, in turn, affect both the availability and utilization of maternal-derived immunity in the neonate and the generation of HSV-specific immunity in the young infant. The effects of each of these parameters on the pathogenesis of neonate HSV infection will also be determined. Overall, these studies will determine the impact of maternal stress on neonatal susceptibility to not only HSV but also its potential impact on susceptibility to other pathogens that are immunologically resisted and pose a threat to neonatal health. Such studies may serve as the impetus for efforts to provide maternal counseling on issues such as **stress management** and the establishment of social support networks as a means to enhance neonatal immunity.

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- **Project Title: OPTIMIZING THE CONTROL OF PAIN FROM SEVERE BURNS**

  Principal Investigator & Institution: Patterson, David R.; Rehabilitation Medicine; University of Washington Seattle, Wa 98195

  Timing: Fiscal Year 2001; Project Start 01-APR-1990; Project End 30-JUN-2003

  Summary: (adapted from investigator's abstract): The primary long term objective of this project is to improve pain control and reduce resulting disability in all age groups of burn survivors (e.g., pediatric, adult, and elderly). This will be accomplished by determining the optimal combinations of opioid analgesics, anxiolytics and psychological approaches, and matching treatments with patient characteristics that may predict therapeutic effects. Because extensive burn injuries are clearly an etiology of acute pain that produce substantial challenges in its treatment, the results will be generalizable to other causes of pain. A second primary objective will be to determine how pain and other factors related to burn injuries influence long-term physical and psychological adjustment. To accomplish these objectives, the investigators will conduct [five] studies, of which three have randomized, controlled designs, one has an observational methodology and one uses longitudinal measurement. These studies will specifically 1) investigate the synergistic effects of a benzodiazipine (lorazepam) and a psychological technique (hypnosis) in reducing burn pain and stress level, relative to the individual use of such techniques, as well as opioid analgesics alone and 1a) introduce and test a new set of variables for their ability to predict the analgesic effects of the modalities used (e.g. opioid analgesic, lorazepam, hypnosis, virtual reality), 2) provide the first controlled study of the use of virtual reality in reducing pain from skin graft dressing changes, 3) continue previous studies in order to gain a large enough sample to determine the effects that opioid pain medication scheduling has on acute pain levels in pediatric patients, 4) perform the first ever prospective analyses of the opioid analgesic needs of elderly burn patients, and (5) test a predictive model for determining the longitudinal impact of burn injuries on psychological adjustment and health outcome. The anticipated benefits of this project will be that they will provide information enabling health care professionals to treat acute pain more effectively across the life span. This will not only reduce unnecessary suffering, but might improve health outcomes by minimizing the deleterious effects of acute pain.

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- **Project Title: PARENTAL ROLE IN PEDIATRIC CANCER PAIN AND SURVIVORSHIP**

  Principal Investigator & Institution: Albrecht, Terrance L.; Professor; Family Medicine; Wayne State University 656 W. Kirby Detroit, Mi 48202

  Timing: Fiscal Year 2003; Project Start 19-SEP-2003; Project End 31-AUG-2006

  Summary: (provided by applicant): Children with cancer experience stress/trauma during certain treatment-related procedures (e.g.,lumbar punctures, bone marrow aspirations). Negative behavioral/psychological reactions to treatments may make the child a more difficult patient and may place the child at greater risk for psychosocial disorders and possibly even maltreatment (Bugental, 2000). Adverse reactions to cancer-related treatments may thus seriously affect the long-term survivorship and quality of life of the pediatric cancer patient. The goal of this study is to determine the influence of the following variables on differences in children's reactions to painful treatments: prior medical history, personal attributes of the child, personal attributes of the child's primary adult caretaker, the nature of the child-caretaker relationship, and the adult's thoughts, feelings, and actions immediately prior to and during an actual treatment

session. The study aims are: 1) to identify the personal attributes of children, personal attributes of their adult caretakers, and the adult-child interaction patterns that covary with the child's affective and behavioral reactions to invasive and painful cancer treatments; 2) to examine the extent to which a child's affective and behavioral reactions to a treatment covary with post-treatment psychosocial and health status, and other factors related to long-term survival; and 3)to conduct a preliminary test of significant portions of a multilevel model of the relationships between the hypothesized causes of children's affective and behavioral reactions to painful treatments and the psychosocial, behavioral, and medical consequences of these reactions. One-hundred thirty-five children undergoing lumbar puncture/bone marrow aspirations and their primary caretaker will be recruited for the study. Interviews will be conducted with the children and parents in the home several days prior to the procedure to collect self-report data and physiological data related to general reactions to stressors. Next, the child-parent-staff interaction will be videotaped during the child's procedure. Additionally, child/parent saliva samples for cortisol level will be used to measures stress, and unused spinal fluid drawn from the child during treatment will be analyzed for brain chemical activation related to mood, emotion, arousal, attention, and stress. Finally, psychosocial and health status will be assessed several days after treatment procedure.

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- **Project Title: PLACEMENT DECISIONS FOR RELATIVES WITH DEMENTIA**

  Principal Investigator & Institution: Winslow, Betty W.; None; Loma Linda University Loma Linda, Ca 92350

  Timing: Fiscal Year 2002; Project Start 01-JUL-2002; Project End 30-JUN-2005

  Summary: (provided by applicant) Over 70% of the estimated 4 million Americans with Alzheimer's disease or a related disorder (ADRD) live at home, with family and friends providing 75% of their care. In addition, half of nursing home patients are estimated also to have ADRD. Research has established that caregivers experience stress and, in time, may choose to institutionalize their relative. Timing of institutionalization can have consequences for patients, families, and society. Premature placement may be associated with unnecessary stress, negative health outcomes for patients, and increased costs for society. Delaying placement can have negative consequences for caregivers and for patients. Although patient and caregiver characteristics that predict placement have been identified and some studies have examined the placement experience of frail elders, little is known about how family caregivers of relatives with ADRD decide to place their relative or how formal service providers participate in the decision. The specific aim of this study is to describe and analyze the process of placement decision-making of family caregivers of relatives with ADRD, including the participation of formal service providers (e.g. nurses, social workers, case managers, physicians, counselors, etc.) in the decision. This longitudinal qualitative descriptive research design will include a non-probability sample of family caregivers (N = 40) that are in the process of deciding to place their relative in institutional care and their involved formal service providers. A grounded theory approach (Strauss & Corbin, 1990, 1998) will be the primary method used for data collection and analysis. A combination of qualitative and quantitative data will be collected and analyzed to achieve the purpose of this study. Findings will be used to understand the caregiver's experience throughout the placement process including how service providers influence the decision and what behaviors are found to be supportive of caregivers. The research will result in theoretical refinement, education of formal service providers, and development of an intervention

project directed toward primary and secondary prevention of family caregiver stress associated with institutional placement of their relative.

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- **Project Title: POST-MIGRATION HEALTH & BEHAVIOR CHANGE: MIDLIFE WOMEN**

  Principal Investigator & Institution: Miller, Arlene M.; Associate Professor; Pub Hlth/Mental Hlth/Admin Nur; University of Illinois at Chicago 1737 West Polk Street Chicago, Il 60612

  Timing: Fiscal Year 2001; Project Start 07-SEP-1999; Project End 31-AUG-2003

  Summary: The purpose of this prospective study is to examine the longitudinal influence of modifiable behaviors that mediate the effects of acculturation on post-migration health. The study will identify strategic points in time during which nursing interventions would be most effective for midlife immigrant women from the former Soviet Union. Immigration is a non-normative developmental transition that takes place in the context of the family system. Older age at immigration and female gender are important predictors of vulnerability. Significant deterioration in physical and psychological health has been documented cross- sectionally as duration of residence increases. Longitudinal methods have not been used, however, to systematically study the effects of acculturation and behavioral risk factors on health status. The specific aims of the study are to 1) track changes over time in acculturation, using indicators of English language usage, adoption of U.S. lifestyle, cultural identity, and acculturation attitudes; 2) track changes in modifiable behavioral mediators, including **stress management** resources, family adaptation, diet and physical activity; 3) track changes over time in health status, using indicators of physical and psychological health; and 4) identify background factors, acculturation characteristics, and behavioral mediators that are correlates of change in health status. Participants will include 225 women, 40 to 70 years old, who are less than 6 years post- migration at entry into the study. Data collection will include questionnaires, 24-hour dietary recalls, and physical measurements (e.g., blood pressure, serum cholesterol and percent body fat), assessed every 9 months (5 times) over 3 years. The sample will be stratified by age and duration of residence. Data analysis will employ an innovative application of hierarchical linear models to document within-individual change over time and estimate group change over the first 9 years post-migration. Prudent targeting of intervention is critical to facilitating effective allocation of health care research while improving health status for new immigrants. The resource methodology validated by this study can be applied to other populations to identify high risk periods and design multifocal programs that are age, gender and culture specific.

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- **Project Title: PRESURGICAL STRESS REDUCTION MENTAL HEALTH AND CANCER**

  Principal Investigator & Institution: Cohen, Lorenzo; Associate Professor; Behavioral Science; University of Texas Md Anderson Can Ctr Cancer Center Houston, Tx 77030

  Timing: Fiscal Year 2001; Project Start 01-AUG-1998; Project End 31-JUL-2003

  Summary: Stress associated with a life threatening illness contributes to poor adjustment and psychological and physiological consequences harmful to adaptation and recovery from surgical treatment. Cancer and its treatment are associated with considerable distress, impaired quality of life, poor mental health, and reduced physical function.

This is particularly true for men with prostate cancer undergoing a radical prostatectomy (RP), the surgical treatment of prostate cancer. Recovery from RP is often associated with urinary and sexual dysfunction in addition to more common sources of stress associated with surgery. At least 50 percent of RP patients have permanent impotence and many experience prolonged periods of urinary incontinence. In addition to the distress associated with these quality of life changes, prostate cancer patients face the fear of recurrence, progression, and death. Recent research has found that psychosocial and psychoeducational interventions can increase quality of life and mental health of cancer patients, and may also improve immune status, pain indices, hospital costs, and length of survival. Despite the dramatic increase in research on psychosocial aspects of cancer and of interventions for cancer patients, relatively little work has considered prostate cancer or the specific impact of surgery for cancer. The proposed study will randomly assign prostate cancer patients undergoing RP to a pre-surgical **stress management** group, an attention control group, or a usual care control group. Dimensions of response to surgery and recovery will include measures of mental health and psychological status, quality of life, and immune, endocrine, and cardiovascular function, as well as pain, use of analgesic medication, and length of hospital stay post- surgery. This design will allow characterization of distress associated with prostate cancer and RP and examination of psychological, physiological, and quality of life changes associated with surgery and short- and long-term recovery. We will also evaluate a theoretical model developed to examine dispositional and environmental factors as predictors of response to surgery and long-term recovery. We hypothesize that pre-surgical **stress management** will reduce the negative impact of RP assessed by psychological, physiological, and quality of life measures.

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- **Project Title: PSYCHOIMMUNE OUTCOMES: INTERVENTION IN BREAST CANCER**

  Principal Investigator & Institution: Kang, Duck-Hee H.; Associate Professor; None; University of Alabama at Birmingham Uab Station Birmingham, Al 35294

  Timing: Fiscal Year 2001; Project Start 01-MAY-2000; Project End 31-JAN-2004

  Summary: The specific aims of this study are (1) to examine immunological, psychosocial, and clinical symptom outcomes of an 8-week integrated support program for patients with newly diagnosed breast cancer, and (2) to determine whether the support program has differential effects on patients with persistently low versus high baseline natural killer cell (NK) activity pattern (below versus above median NK activity x 2). The integrated support program includes weekly **stress management** and social support programs and exercise training activities three times a week. Background and Significance: Cancer diagnosis and treatment are a major source of significant psychological, emotional, and physical distress. Most previous interventions have been limited by a unidimensional approach (psychosocial or physical support, not both), and by the lack of immunological assessments. Given the importance of mind-body interactions in human functioning, an integrated approach of concurrent psychological and physical support will be most beneficial to assist patients in distress. Further, there is indication that breast cancer patients with lower baseline NK activity pattern have a poorer prognosis than those with higher baseline NK activity pattern. A comprehensive examination of an integrated approach will provide insights to improving quality of life for patients with newly diagnosed breast cancer. Design and Method: Using a longitudinal, experimental design with pretest and posttest, 90 patients with stage I-IV newly diagnosed breast cancer will be stratified by disease stage (I-IIB vs. locally

advanced) and randomly assigned to the Experimental (intervention) or Control (wait-list) group. NK activity will be examined twice prior to the beginning of intervention to determine the pattern of NK activity. The intervention will begin at the start of chemo- or radiotherapy. Post-intervention data will be collected immediately after intervention and at 6 and 12 months from the initiation of intervention, coinciding with patients' routine clinic visits. Dependent Measures and Analysis: The impact of intervention will be measured on immune responses (NK activity and number, lymphokine activated killer cell activity, IL-1alpha, IL-2 and interferon-gamma), psychosocial well-being (distress, mood states, and quality of life), and clinical symptoms (fatigue, nausea, vomiting, and sleep). Longitudinal data analysis methods will be employed to analyze repeated measures of outcome variables, whereas 2-sample t-test or nonparametric Wilcoxon rank-sum test will be used to perform univariate analysis.

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- **Project Title: PSYCHONEUROIMMUNOLOGY AND CERVICAL CANCER**

  Principal Investigator & Institution: Wenzel, Lari B.; Associate Adjunct Professor; Medicine; University of California Irvine Irvine, Ca 926977600

  Timing: Fiscal Year 2003; Project Start 01-JUL-2003; Project End 30-JUN-2005

  Summary: (provided by applicant): Cervical cancer patients experience significant illness-specific stress that includes physical, emotional and sexual problems years after diagnosis. However, there is a paucity of literature on interventions designed to minimize the stressors and disruptions associated with cervical cancer. An intervention that reduces stress and enhances adaptive coping skills could decrease the burden caused by cervical cancer by improving QoL and health outcomes. For example, recent descriptions of neurologic and neuroendocrine interactions with the immune system provide a rational basis for the mind-body bridge between the psychosocial (QoL) and physiologic (anti-tumor) clinical effects. An underpinning for modulations of the immunologic environment could affect acute and memory anti-tumor immune responses. Therefore, our long-term objective is to test a psychosocial telephone counseling (PTC) intervention, which could positively impact the quality of life of cervical cancer patients, with an associated modulation of the psychoneuroimmunologic axis resulting in an accentuated Th1 and anti-tumor memory T cell immune response. The proposed exploratory study will permit us to examine the methodologic feasibility and benefits associated with a novel counseling intervention, and test the hypothesis that intervention-induced longitudinal modulations in quality of life measures will be associated with longitudinal modulations in neuroendocrine and immune parameters. SPECIFIC AIMS: 1) Determine the methodologic feasibility and QoL benefits of a psychosocial telephone counseling (PTC) intervention for cervical cancer patients, 2) evaluate longitudinal immune and neuroendocrine parameters in cervical cancer patients +/- PTC, and 3) evaluate the correlation between PTC associated modulation of QoL measures and biologic parameters (neuroendocrine and immune). To achieve these aims, we will randomize cervical cancer patients to telephone counseling (N=25) or usual care (N=25), and collect neuroimmune and quality of life data on all patients at baseline (3-9 months post diagnosis), and four months post enrollment. All patients will be identified through the Cancer Surveillance Program of Orange, Imperial and San Diego Counties (CSPOC/SanDIOC).

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- **Project Title: PSYCHOPATHOLOGY, CORTISOL, AND MEMORY IN YOUNG CHILDREN**

  Principal Investigator & Institution: Heffelfinger, Amy K.; Neurology; Medical College of Wisconsin Po Box26509 Milwaukee, Wi 532264801

  Timing: Fiscal Year 2003; Project Start 01-APR-2003; Project End 31-MAR-2005

  Summary: (provided by applicant): Memory has a steep developmental trajectory in early childhood, which is necessary for the associated rapid acquisition of skills, facts, and cognitive concepts. The neural systems sub-serving memory have been shown to be susceptible to early negative influences, which may diminish future learning and memory ability. The investigator and colleagues have been the first to show that as early as the preschool period, stress induced alterations in cortisol are related to poorer memory performance. Although this has significant educational implications, the possible risk and protective factors that result in decreased memory abilities as a result of altered HPA axis function have not been investigated to date. The presence of very early psychopathology is hypothesized as a robust risk factor, because of the breadth of animal and human literature. Children with psychopathology are known to be at high risk for comorbid learning difficulties, which may be associated with HPA axis dysfunction. The investigator proposes to 1) replicate earlier associations between post-stress cortisol and memory abilities in young children found in a clinical sample in a community sample, 2) investigate whether young children with internalizing and/or externalizing disorders have poorer memory performance as a result of cortisol dysfunction compared to children without psychopathology, and 3) examine potential risk and protective factors for memory difficulties as a result of cortisol alterations, such as child temperament and parent-child relationship. Two existing data sets, one focused on early psychopathology and the other on risk factors will be examined. An investigation of both data sets will allow for increased generalizability of findings. They have remarkably similar, multi-informant, and comprehensive assessment measures, and both data set PIs and the investigator have an established history of collaboration on studies of early psychopathology with the MacArthur Foundation Research Network on Psychopathology and Development. Investigating memory difficulties as a result of HPA axis dysfunction and psychopathology will result in implications for education, mental health prevention and treatment, and early **stress management** and prevention.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: PSYCHOPHYSIOLOGIC OUTCOMES: CHILD ANGER INTERVENTION**

  Principal Investigator & Institution: Rice, Marti H.; None; University of Alabama at Birmingham Uab Station Birmingham, Al 35294

  Timing: Fiscal Year 2002; Project Start 30-SEP-2002; Project End 30-JUN-2006

  Summary: (provided by applicant) Specific Aims: The aims of this study are to examine the effectiveness of a 17-month, integrated multidimensional intervention on psychological, behavioral, physiological and health outcomes 9 and 10-year old children initially and over time. The multidimensional approach of cognitive-behavioral and physical activity strategies will be used in the integrated anger and **stress management** and self-concept enhancement program that is designed to reduce anger and stress and enhance self-concept and positive coping strategies. Background and Significance: Anger, chronic stress, ineffective methods of expressing anger and coping are risk factors for disease and have negative health outcomes for children. High levels of anger and stress and low levels of self-confidence are amenable to intervention in children.

Most previous interventions have been limited to a single focus (anger management or stress management) and were unidimensional in their approach (cognitive-behavioral or physical activity). Although the unidimensional approaches and single focus programs have been effective, the effects have been limited. An integrated program with multidimensional approaches is anticipated to produce synergistic and longer-lasting effects on the psychological, behavioral, physiological, and health outcomes. Design and Method: A two-group, repeated measures, experimental design is employed in this study. Schools will be randomly assigned to experimental or control groups. At least 490 4th grade children (245 experimental; 245 control) will be recruited. Using standardized instruments and laboratory assays, data will be collected 6 times over the course of the study: once prior to the intervention (baseline), immediately after the intensive phase, at 3 and 6 months of the reinforcement phase, immediately after and 3 months after the intervention. Dependent Measures and Analysis: The impact of the intervention will be measured on psychological (trait anger, patterns of anger expression, self-concept, perceived resources for coping), behavioral (use of coping strategies, in-school behavior problems), physiological (blood pressure, salivary cortisol, secretory IgA) and health (number of viral infections, illness related absences) outcomes. Two by five mixed effects generalized linear models will be used to examine the group differences in the repeated measures of outcome variables.

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- **Project Title: PSYCHOSOCIAL INTERVENTION FOR ORAL CANCER PATIENTS**

  Principal Investigator & Institution: Baum, Andrew; University of Pittsburgh at Pittsburgh 350 Thackeray Hall Pittsburgh, Pa 15260

  Timing: Fiscal Year 2001; Project Start 01-AUG-1999; Project End 31-JUL-2004

  Summary: Oral cancer constitutes a significant threat to health and well being. It is caused by a variety of environmental, genetic, viral, and behavioral factors including tobacco and alcohol use. Treatment poses threats to body image due to potentially disfiguring surgery. Threats of death and/or recurrence of disease, communication problems, and eating and breathing difficulties are also possible. In addition, treatment requires cessation of tobacco and alcohol use. These are significant stressors that are likely to affect psychological adjustment and quality of life. However, comprehensive psychosocial interventions have been applied to oral cancers. Despite the likelihood of significant distress associated with oral cancer and the recent success of group and individual interventions in enhancing adjustment and reducing stress, there are no systematic data bearing on these issues in oral cancer patients. The proposed research will complete development of a psychosocial intervention for oral cancer patients and will evaluate the effectiveness of this intervention in reducing stress, facilitating alcohol and tobacco cessation, reducing psychological distress, and enhancing quality of life. This study will be a randomized investigation for the psychosocial intervention for oral cancer patients involving comparison of a range of outcomes among intervention and control groups of oral cancer patients. Patients randomized to the experimental group will receive a seven-session psychosocial psychosocial intervention, beginning during post-surgery inpatient hospitalization. Patients in the control group will receive information about cancer of the oral cavity and its treatment in seven brief session with the same therapist who administers the intervention. All participants will complete a pre-intervention assessment and will provide similar data one and six months after the intervention and one year later. Evaluation of the intervention will be accomplished by comparing several psychological and medical outcomes of patients receiving the intervention and the control group of similar patients who receive information and

standard care. Outcomes will include the measures of stress, anxiety, depress, smoking, smoking cessation, and quality of life. Disease related outcomes (e.g new evidence of disease) will also be monitored.

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- **Project Title: RANDOMIZED NURSING INTERVENTION FOR ABUSED PREGNANT WOMEN**

  Principal Investigator & Institution: Curry, Mary A.; Professor; Family Nursing; Oregon Health & Science University Portland, or 972393098

  Timing: Fiscal Year 2001; Project Start 01-JAN-1993; Project End 31-JAN-2005

  Summary: It is estimated that 7 to 34 percent of pregnant women are abused during pregnancy. Abuse is associated with low birth weight (LBW), which is probably a result of psychosocial stress and unhealthy behaviors, including substance use. Abuse is also connected to increased prenatal hospitalizations and may escalate in the year after birth. The goal of this randomized controlled trial of a nursing case management intervention is to improve maternal and infant outcomes for women who are at high risk for abuse. The specific aims are to: 1) increase women's opportunities to disclose abuse during pregnancy; 2) test the effect of the intervention on reducing psychosocial stress and severity of abuse; 3) decrease the incidence of hospital admissions; 4) estimate the effect of the intervention on reducing LBW; and 5) describe women's transitions through the abuse process during pregnancy and the year after birth and identify what they found helpful. An ethnically diverse sample of 1088 urban and rural women from sites in Oregon and Missouri will be inducted between 16-20 weeks gestation. Data regarding psychosocial stress, abuse, and substance use will be collected at induction (T1) and again between 32-36 week gestation (T2) by research assistants. Women will be randomized to control or treatment groups following the T1 assessment. Women in the intervention group will be categorized as either low risk or high risk for abuse based on their TI data. All low risk women will be given the opportunity to watch the video Faces of Abuse following this initial data collection and provided 24-hour telephone access to a study Nurse Case Manager (NCM), the basic Connections Intervention package. In addition, to the basic package, high-risk women will be offered Connections Plus, which includes the empowerment abuse prevention protocol and individualized case management. The case management will focus on reducing psychosocial stress and the severity of abuse. Medical records will be used to record hospital admissions, the extent of social services received by control group women, and outcome data, including infant birth weight. Study hypotheses will test the differences in psychosocial stress, severity of abuse, number of prenatal hospitalizations and infant birth weights between intervention and control women within and between sites. Data regarding substance use, which will be collected by confidential self-report, will be used to describe and control for this variable in the birth weight analyses. A subset of 20 abused women from each site (N=40), will complete four qualitative interviews during pregnancy and the first postpartum year to describe their transitions through the Abuse process, determine if abuse escalated in the year after delivery, and identify what they found helpful.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: REDUCING FAMILY CAREGIVER UPSET WITH DISRUPTIVE BEHAVIOR**

  Principal Investigator & Institution: Gitlin, Laura N.; Professor and Director; Nursing; Thomas Jefferson University Office of Research Administration Philadelphia, Pa 191075587

Timing: Fiscal Year 2002; Project Start 30-SEP-2002; Project End 31-AUG-2007

Summary: (provided by applicant): This application is in response to the RFA NR-02-001 "Informal Caregiving Research for Chronic Conditions." It proposes a randomized control trial to test the effectiveness of a targeted intervention to reduce family caregiver upset with disruptive behaviors and burden, and frequency of behavioral occurrences in persons with Alzheimer's disease and related disorders (ADRD). The study targets 272 highly stressed racially diverse family caregivers providing in-home care to persons at moderate stage dementia, a point in the disease in which behavioral disturbances typically occur and caregiver stress significantly increases. The in-home intervention we plan to test is theory-driven and multidisciplinary and combines empirical evidence with knowledge of best clinical practice. To enhance its clinical applicability, the intervention is designed to be reproducible and its components reimbursable under current Medicare guidelines. The intervention provides families with the requisite knowledge and skills to control their own stress and identify, manage and reduce both the internal (e.g., medical causes) and external (e.g., environmental) factors that may contribute to disruptive behavior in the home. The first intervention component involves a home visit from an advanced practice nurse who will provide education to caregivers about dementia and disruptive behaviors, and screen for and coordinate treatment of underlying medical conditions (e.g., infection) that may contribute to the behavioral disturbance in the person with ADRD. Regardless of medical outcome, the next intervention component involves home visits and telephone contacts by an occupational therapist who will provide in-home caregiver training in (1) stress reduction, (2) problem solving to identify antecedent environmental conditions that provoke behaviors, (3) communication, task and environmental simplification techniques to prevent and manage disruptive behaviors; and (4) environmental modifications (e.g., placement of visual cues, de-cluttering, assistive devices) to minimize excess stimulation and disorientation contributing to target behaviors. The intervention will be tested using a randomized two-group design in which 272 caregivers will be assigned to 6-months of intervention or a usual care control group, and evaluated at baseline, 4 and 6-months. The specific aims are to (1) test immediate intervention effectiveness (4-months) to reduce caregiver upset with targeted disruptive behaviors (primary outcome): (2) test immediate intervention effectiveness (4-months) to reduce caregiver burden (secondary outcome); (3) test immediate intervention effectiveness (4-months) to reduce occurrence of targeted disruptive behaviors in persons with dementia (secondary outcome); (4) test the intervention maintenance effect (6-months) on caregiver upset and burden and targeted disruptive behaviors; and (5) assess the cost and cost effectiveness of the intervention. We also propose two exploratory aims. We will evaluate the mechanisms of action, or the pathways by which treatment gains are obtained, by examining whether improvement in quality of caregiving through skill acquisition (e.g., self-efficacy, caregiver use of positive communication and task simplification techniques), mediates treatment effectiveness. Second, given that previous research suggests that caregiver characteristics may moderate caregiving experiences and treatment outcomes, we plan to evaluate whether there is a differential treatment effect based on the caregiver's gender, race and relationship to the ADRD patient.

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- **Project Title: REDUCING STRESS /SLEEP DISTURBANCES IN CAREGIVERS OF AD**

  Principal Investigator & Institution: Hall, Martica; University of Pittsburgh at Pittsburgh 350 Thackeray Hall Pittsburgh, Pa 15260

Timing: Fiscal Year 2003; Project Start 01-DEC-2002; Project End 30-NOV-2007

Summary: The stress of caregiving is associated with a number of adverse health outcomes including psychiatric morbidity, immune system dysregulation, increased susceptibility to illness and disease, and increased risk for mortality. Sleep complaints are common among caregivers, and stress-related sleep disruptions may signal vulnerability to, or play a causal role in, the adverse health consequences of caregiving. The general aim of this revised study is to test the efficacy of an intervention designed to reduce stress and improve sleep in a sample of spousal careqivers of patients with Alzheimer Disease (AD). The intervention will be compared to an attention-only control condition. Specific aims of this study are: 1. To characterize stress-related sleep disruptions in spousal caregivers of AD patients. 2. To test the short-term efficacy of a stress management+healthy sleep practices (SM+HSP) intervention for improving sleep and health outcomes in AD caregivers. 3. To test the durability of SM+HSP in AD caregivers. The study will include 60 spousal caregivers of AD patients who will be randomly assigned to one of two treatment conditions. The SM+HSP intervention will consist of eight weekly in-home sessions that will focus on information support, skills training, affective self-management, and healthy sleep practices. Individually, these components have been shown to be efficacious for reducing stress or improving subjective sleep complaints in AD caregivers. The control condition will include eight weekly in-home sessions which will focus on diet and food intake. Treatment integrity will be monitored by audiotape recordings. The program project measures battery (Agebat) and additional measures specific to caregiving will be administered at four time points: prior to randomization, immediately post-intervention, and at 6- and 12-month follow-up visits. Project -specific data will be used to evaluate treatment efficacy and relationships among caregiver stress and sleep. Relationships among stress, sleep, and health will be more fully evaluated using program-wide data collected in Project 1-5. Our program-wide aim is: to characterize the impact of stress-related sleep disruptions on health in older adults, including AD caregivers, recent widows/widowers, patients with insomnia in primary care settings, and healthy elders above the age of 75 years. The main hypotheses to be tested within the individual project are that the stress of caregiving has a detrimental effect on sleep and that stress-related sleep disruptions, in turn, negatively impact health and well-being. It is hypothesized that, relative to the attention-only control condition, the active intervention (SM+HSP) will result in improvements in sleep and subsequent improvements in health and well-being.

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- **Project Title: REDUCING STRESS IN HISPANIC AND ANGLO DEMENTIA CAREGIVERS**

  Principal Investigator & Institution: Gallagher-Thompson, Delores; Stanford University Stanford, Ca 94305

  Timing: Fiscal Year 2002; Project Start 01-SEP-2002; Project End 31-AUG-2003

  Summary: The primary focus of this study is to evaluate the impact on diurnal variations in salivary cortisol of two empirically validated treatments for reduction of psychological distress. In adult daughter caregivers over the age of 50 who care for an elder relative with dementia. The normal pattern of diurnal variation in salivary cortisol is disrupted among chronically stressed caregivers; this reflects a high level of activation of their hypothalamic-pituitary-adrenal (HPA) axis is one mechanism by which the chronic stress of the situation might increase risk for adverse health outcomes. Change in this pattern due to treatment will calculated and correlated with changes in

psychological distress measures, in order to examine the hypothesized linkage of psychological and physiological stress indices in this understudied population. Rate of decline in salivary cortisol across the day (averaged over 5 times of measurement each day for 2 consecutive days) will be assessed before and after weekly treatment of three months duration, and again at a six-month follow-up. Secondary outcome measures of sleep efficiency (using wrist actigraphy and sleep logs) and DHEA (obtained from saliva) will also be collected at the same time points, and the ratio of DHEA to cortisol will be calculated each time as a measure of the same time points, and the ratio of DHEA to cortisol will be calculate each time as a measure of neuroendocrine health. In addition, seated blood pressure readings and body mass index (BMI) will be calculated at each of the 3 times of measurement, and measures of general perceived stress, stress specific to caregiving, at each of the 3 times of measurement, and measures of general perceived stress, stress specific to caregiving, caregivers' depressive symptoms, and their medication usage will also be obtained. Both Anglo (N=90) and Hispanic (Mexican-American; N=90) Caregivers will be recruited to participate in this treatment program. Within each ethnic group, caregivers will be randomly assigned to a psychoeducational class designed specifically to alleviate caregiving stress or a telephone support condition, which has also bee shown to be helpful in prior research. To evaluate the primary hypotheses, statistical analyses will be conducted that permit examination of research the main effects of treatment and ethnicity, as well their interaction, on the key outcome measures. In addition, the mediating roles of change in self-efficacy and change in social support over time will be examined, as will the moderating effects of socioeconomic status and levels of acculturation (within the Hispanic sample only). This will be one of the first studies to examine whether change in such physiological variables as diurnal variation in salivary cortisol will result from participation in one of two psychologically oriented interventions programs for dementia family caregivers. Given the substantially increased risk of mortality among caregivers providing hands-on care and experiencing strain associated with that care (Schulz& Beach, 1999), interventions to relieve strain (on both the psychological and physiological levels) may eventually result in significant public health grains for this group.

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- **Project Title: RELAXATION THERAPY FOR ALZHEIMER'S CAREGIVERS**

  Principal Investigator & Institution: Lewis, Sharon L.; Professor; Acute Nursing Care; University of Texas Hlth Sci Ctr San Ant 7703 Floyd Curl Dr San Antonio, Tx 78229

  Timing: Fiscal Year 2003; Project Start 15-JAN-1997; Project End 31-AUG-2004

  Summary: (provided by applicant): Aging baby boomers, longer life spans, and rising levels of Alzheimer's disease and related disorders (ADRD) will result in a major caregiver crisis in the near future. Although family caregivers perform an incredibly valuable service, they do so at a considerable cost to themselves both emotionally and physically. Effective **stress management** programs for caregivers are vitally needed to 1) help them decrease their stress, 2) improve their emotional and physical health, and 3) empower them to gain control of their lives. The overall goal of this randomized controlled clinical trial is to determine the effectiveness of a stress-busting program (SBP) for caregivers of patients with ADRD. Specific research aims include: 1) to prospectively determine the effects of a SBP compared to a standard support group (SSG) on quality of life, immune response, and relaxation response using bioinstrumentation to measure muscle tension, electrodermal response, skin temperature, blood volume pulse, and blood pressure and 2) to assess the effectiveness

of SBP or SSG for adult children caregivers as compared to spousal caregivers based on quality of life measurements, immune parameters, and relaxation response. Subjects will be tested at baseline, at completion of 4 and 8 weeks of SBP or SSG, and at 2- and 4-month follow-up sessions to determine the long-term effectiveness of the intervention. The proposed 8- week multimodal SBP will focus on **stress management,** relaxation therapy, and education related to stress and relaxation, managing challenging behavior, depression, coping strategies, positive thinking, and taking time for oneself. The setting will be an educational support group. A repeated measures design will be used to determine the effectiveness of SBP compared to SSG. Outcomes will be measured using psychosocial instruments as well as state-of-the science technology including bioinstrumentation and immune parameters to measure biological responses. The SBP is proposed as a way to decrease the level of stress experienced by caregivers and teach them effective coping strategies. If SBP is found to be more effective than SSG in decreasing stress, improving quality of life, promoting relaxation, and/or enhancing immunocompetence in family caregivers, these findings would have important clinical significance for providing a cost effective health promotion strategy for a group of people who experience tremendous ongoing stress.

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- **Project Title: SCHOOL COMPUTER PROGRAMS FOR TEENS FOR SIX CANCER RISKS**

  Principal Investigator & Institution: Prochaska, James O.; Director; Psychology; University of Rhode Island 70 Lower College Road, Suite 2 Kingston, Ri 028810811

  Timing: Fiscal Year 2001; Project Start 24-JUL-2000; Project End 30-JUN-2005

  Summary: (Adapted from the Applicant's Abstract): This project applying cognitives in schools with adolescents has four primary aims: 1) to replicate the excellent results found with adolescents who received at school proactive, individualized and interactive multimedia expert systems for smoking, high fat diets and sun exposure. 2) To expand these findings to three additional behavioral risk factors for cancer, namely alcohol abuse, sedentary life-styles and stress; and 3) to enhance our current best practices for smoking, diet and sun exposure by creating an integrated expert system that teaches teenagers the basic principles and processes for changing these and other risk behaviors; 4) to explore the additive effects of treating both students at school and their parents at home (in a parallel Interactive RO1 project entitled "Home Computers for Parents for Six Cancer Risk Factors") compared to treating just the students alone for each of the six target behaviors. This population-based clinical trial employs a 3 X 4 repeated measures design crossing 3 groups (the Best Practices expert systems for smoking, diet and sun exposure; an innovative integrated expert system; and the New Behaviors comparison group that also serves as a distraction placebo control. Fourteen high schools will participate with 3570 ninth graders being randomly assigned to one of the three groups. All participants will receive six 45 minute expert system sessions during their ninth and tenth grades. The expert systems provide normative (compared to their peers) and ipsative (compared to self) feedback on each of the 15 relevant Transtheoretical Model variables for each of their relevant risk factors. These systems are designed to provide guided learning for accelerating and facilitating progress through stages of change. Since nearly 80 percent of eligible students are expected to participate, these programs have considerable potential to produce major population impacts on six of the most important behavioral risks for cancer and other chronic diseases. The project will produce individualized and interactive multimedia computer programs that can be

disseminated in a cost-effective manner through schools to help entire populations of adolescents.

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- **Project Title: SELF MANAGEMENT THERAPY FOR YOUTH WITH SCHIZOPHRENIA**

  Principal Investigator & Institution: Schepp, Karen G.; Psychosocial & Community Hlth; University of Washington Seattle, Wa 98195

  Timing: Fiscal Year 2001; Project Start 10-APR-1998; Project End 31-JAN-2003

  Summary: (Adapted from Applicant's Abstract): This five-year nursing study targets adolescents with DSM-IV diagnosed schizophrenia. The purpose is to test the effectiveness of a family centered, community-based, self management intervention for these adolescents between the ages of 15 and 18 years. The primary aim is to test the effectiveness of the intervention in improving the adolescents' level of functioning in role performance, thinking/cognitive processing, behavior towards others, mood, and use of substances. The second aim is to assess the impact of the intervention on family functioning. The third aim is to describe the relationships among the process variables of the intervention. Nakagawa-Kogan's self-management nursing model, Kanfer's self-regulation theory, and Liberman's theory of stress and vulnerability provide the theoretical basis for the self management intervention developed specifically for a population with deficits in cognitive processing. The intervention involves training in symptom awareness, **stress management** skills, problem-solving, and social skills. Parents and siblings are included to gain knowledge and skills to support the adolescents. The study is a randomized two-group experimental design with repeated measures. The subjects are 144 adolescents who meet the DSM-IV criteria when screened with the K-SADS and the DISA. The adolescent's level of functioning will be assessed using the Child and Adolescent Functional Assessment Scale, the Birchwood Early Signs & Symptoms Scale for schizophrenia, and the DISA. Family Functioning is assessed by computing a Composite Family Functioning Index using weighted scores from the FACES II, Family Apgar, Family Empowerment, and Family Social Support scales. One parent will be designated by the family to be the family respondent on the scales. The adolescents are referred to the study by mental health professionals. The intervention is administered in small multiple-family groups in 12 sessions over 7-1/2 months. Data are collected at 4 points in time: at baseline, after 6 intensive sessions, after 6 monthly reinforcement sessions, and 6 months post-intervention. ANCOVA will be used to test the study hypotheses. Multivariate relationships will be examined among the process variables of the intervention.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: SIU RURAL CAREGIVER TELEHEALTH INTERVENTION TRIAL**

  Principal Investigator & Institution: Chwalisz, Kathleen; Psychology; Southern Illinois University Carbondale 900 S. Normal Carbondale, Il 629014709

  Timing: Fiscal Year 2002; Project Start 30-SEP-2002; Project End 30-JUN-2008

  Summary: (provided by applicant): This study is a clinical trial of a multi-component telehealth intervention for informal caregivers of rural older adults, an understudied population thought to be at greater risk for negative physical and mental health outcomes. The intervention, based on the Perceived Stress Model of Caregiver Burden (Chwalisz, 1996) will be administered by telephone and includes components targeted to caregiver knowledge (caregiver role/process, knowledge of services/resources,

information about care-recipient's condition), skills (social problem solving skills), behavior (enhancing social interaction/support), and affect (cognitive-behavioral therapy to manage negative affect). Two delivery mechanisms will be compared in a randomized controlled trial design: a 9-session structured telephone counseling intervention and a call-in help line (in which all treatment components are available but delivery is tailored to individual participants based on presenting concerns and assessed needs). Treatment outcome data will be compared with outcome data from a "service-as-usual" control group. It is hypothesized that caregivers who receive the telehealth services will have greater improvement in physical health (self-assessed health, health care service utilization), mental health (caregiver burden, symptoms of depression and anxiety), and psychosocial functioning (social support, interpersonal relationship conflict, social role functioning) than controls. It is further hypothesized that caregivers who receive the entire treatment package will have better outcomes than help line participants, although there is a competing hypothesis that interventions tailored to caregivers' situations and need are more effective. The variable use of the help line treatment condition will allow for tests of dose-effect, and perhaps dismantling, relationships. Tracking help line usage, and comparisons between individuals who are referred for the intervention, but do not participate/dropout, will also provide information invaluable to developing services for rural caregivers. Other notable methodological features include treatment manualization, training, and implementation tracking. Specific treatment components (e.g., telehealth modality, culturally sensitive services/outreach, stakeholder involvement) have been designed in order to reach a more diverse group of caregivers, including caregivers who are underrepresented in research (e.g., racial/ethnic minorities, overburdened caregivers).

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- **Project Title: SLEEP DISRUPTION IN NEW PARENTS: AN INTERVENTION TRIAL**

  Principal Investigator & Institution: Lee, Kathryn A.; Professor and Livingston Chair; Family Health Care Nursing; University of California San Francisco 500 Parnassus Ave San Francisco, Ca 94122

  Timing: Fiscal Year 2001; Project Start 01-JAN-2001; Project End 31-DEC-2003

  Summary: This longitudinal study utilizes a stress and coping framework to test an intervention to minimize the stress of sleep disruption and thereby improve the outcomes for new parents after the birth of their first infant. Data from the principal investigator's previous research and knowledge of sleep hygiene principles provide the basis for this proposal. The primary aim is to test the effects of an environmental-behavioral intervention on sleep, fatigue, well-being, and marital satisfaction. This intervention will be introduced prior to delivery to allow the couple to adapt to the equipment involved in the intervention. Hypotheses will be tested using repeated measures analysis of variance to determine mean group differences. It is expected that: 1) The experimental group of new mothers (n=60) and new fathers (n=60) will have significantly fewer awakenings, and higher sleep maintenance than control mothers (n=60) and fathers (n=60) at all 4 postpartum time points; 2) The experimental group of new mothers and new fathers will report significantly lower fatigue and higher well-being and marital satisfaction compared to controls at all four postpartum time points (2, 4, 8, and 12 weeks). A secondary aim is to describe the success by which new parents incorporate this intervention into their lifestyle and evaluate its feasibility for other first-time parents. Level of satisfaction with the intervention package will be ascertained for both experimental fathers and experimental mothers before and after mothers return to

work. Results from this study will be useful in developing an educational intervention package for distribution to all adults preparing for parenthood.

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- **Project Title: STRESS AND HEALTH IN WOMEN LEAVING WELFARE**

  Principal Investigator & Institution: Kneipp, Shawn M.; Health Care Environmnts/Systms; University of Florida Gainesville, Fl 32611

  Timing: Fiscal Year 2002; Project Start 01-APR-2002; Project End 31-MAR-2004

  Summary: In 1996, welfare reform legislation required the nation move over 4.5 million single-mothers into employment. The majority of women leaving welfare for work will continue to live at or below the federal poverty level even through they may work full-time and must overcome additional challenges associated with maintaining employment and securing adequate childcare. Studies indicate leaving welfare for work may be a source of significant stress for single-mothers. Women who receive welfare experience depression, anxiety, and poor health status at nearly twice the rate of women in the general population. Despite this, studies determining the extent to which stress during this transition further threatens the health of an already vulnerable population of single- mothers are absent. Our lung range goal is to improve the health of low- income women. The objective of this proposal is to compare psychosocial distress, neuroendocrine and cardiovascular indicators of stress, and health status in 40 single-mothers before and after they leave welfare for employment., These data are necessary to determine whether women incur increased risk to their health when moving from welfare into employment, guide the development of nursing interventions for this population, and inform decision-makers responsible for public policy development. The specific aims of this research are as follows: 1. To compare a) psychological stress, b) neuroendocrine and cardiovascular indicators of stress, and c) health status in single-mothers both status in single-mothers before leaving welfare (Time 1) and 2 months after become employed (Time 2). 2. To determine the extent to which a change in psychosocial stress predicts a change in a) neuroendocrine and cardiovascular indicators of stress and b) health status from Time 1 to Time 2].

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: STRESS AND MYOCARDIAL ISCHEMIA--MECHANISMS AND TREATMENT**

  Principal Investigator & Institution: Blumenthal, James A.; Professor; Psychiatry; Duke University Durham, Nc 27706

  Timing: Fiscal Year 2001; Project Start 05-SEP-1998; Project End 31-AUG-2003

  Summary: (adapted from the applicant's abstract): The presence of transient myocardial ischemia is an important functional expression of coronary heart disease (CHD). Recent research has shown that mental stress can trigger ischemia in the laboratory and during daily life, and that mental stress-induced ischemia is associated with increased risk for coronary events over and above exercise-induced ischemia. The present study is designed to examine the extent to which a program of exercise or **stress management** training reduces ischemic activity measured in the laboratory using radionuclide ventriculography and during daily life using ambulatory monitoring. In addition, we propose to examine the bio-behavioral mechanisms by which mental stress triggers ischemia, and the mechanisms by which the inter-ventions reduce ischemic activity. Two hundred and ten patients with documented CHD and evidence of exercise-induced myocardial ischemia will serve as subjects for this study. Patients will be withdrawn

from anti-ischemic medications and undergo comprehensive evaluations both in-hospital and out-of-hospital. In-hospital assessments will include provocative mental stress testing to elicit myocardial ischemia, ultrasound testing to assess endothelial function, and psychometric testing to assess underlying personality traits and behavioral dispositions. The out-of-hospital assessment will consist of 48-hour ischemia monitoring with concurrent blood pressure monitoring and behavioral diary recording. Following completion of the assessments, patients will resume their usual medications and will be randomly assigned to either Aerobic Exercise, **Stress Management** or Education/Routine Care. Patients will be re-evaluated after the four-month treatment program and thereafter followed for at least six months. It is hypothesized that exercise and **stress management** training will be associated with a reduction in ischemic activity, associated with reductions in blood pressure and systemic vascular resistance, and improved endothelial function. Data from this study will provide new scientific insights into the mechanisms of stress-induced myocardial ischemia, as well as important knowledge regarding the clinical benefits of exercise and **stress management** training in the treatment of CHD patients with myocardial ischemia.

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- **Project Title: STRESS MANAGEMENT AND T-CELL RESPONSES IN PERIODONTITIS**

  Principal Investigator & Institution: Wood, Gary J.; Dental Medicine/Public Health; University of Southern California 2250 Alcazar Street, Csc-219 Los Angeles, Ca 90033

  Timing: Fiscal Year 2001; Project Start 01-FEB-2000; Project End 31-JAN-2003

  Summary: Recent reports document a relationship between periodontal disease and stress, including the number and severity of negative life events and financial stress. The classic physiological response to stress involves both the hypothalamo-pituitary-adrenal axis as well as the sympathetic- adrenal-medullary system and results in increased levels of stress-related neuroendocrine factors including ACTH, cortisol, beta-endorphin as well as the catecholamines. The relationship between stress, neuroendocrine mediators of stress and the immune response, in particular T cells is well established. Various forms of **stress management** invention, including hypnosis have proven to be effective in reducing distress and improving coping. This proposal seeks to test the general hypothesis that a non- pharmacological **stress management** intervention can induce alterations in the psychological, neuroendocrine and T cell cytokines in periodontal patients. Therefore we have developed the following specific aims to test this hypothesis: 1) determination of the efficacy of a diseases: 2) evaluation of the effects of hypnosis intervention on the hypothalamo- pituitary-adrenal (HPA) axis and sympathetic-adrenal-medullary (SAM) system; and 3) assessment of the effects of **stress management** intervention on levels of stress-related neuroendocrine mediators and T cell responses in a sample of patients with moderate adult periodontitis. Subjects are randomly assigned to a 6 week **stress management** protocol utilizing hypnosis or an alternative attention placebo protocol. The plasma levels of ACTH, cortisol, beta-endorphin, epinephrine will be determined. In addition, the T-cell activation responses to polyclonal stimuli and periodontal pathogens as well as the expression of T-cell specific cytokines, will be assessed. The ability to non-pharmacologically alter the neuroendocrine mediators of stress, as well as T-cell responses would be a major accomplishment. This potentially permit testing of hypotheses related to the pathogenesis of periodontitis, as well as therapeutic modalities.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: STRESS MANAGEMENT EXPERT SYSTEM FOR CANCER PREVENTION**

  Principal Investigator & Institution: Evers, Kerry E.; Director; Pro-Change Behavior Systems, Inc. 2 Chafee Rd Kingston, Ri 02881

  Timing: Fiscal Year 2001; Project Start 01-SEP-1999; Project End 31-OCT-2002

  Summary: Stage matched interventions for **stress management** that are interactive and individualized, and are delivered proactively to entire populations can have unprecedented impacts. Computer based expert systems linked to self-help manuals can be as effective as Counselors but at much lower cost and greater accessibility. Stress is an important cause of cancer and other chronic and acute diseases and is one of the most costly behaviors in terms of health care, job performance and disability. Fifty million Americans do not practice effective **stress management.** Existing programs are action-oriented and are designed for the 30% of populations who are prepared to take action. Stage matched programs can meet the needs of all; the 45% in the Precontemplation stage and the 25% in the Contemplation stage. Phase I of this Fast-Track research will demonstrate the feasibility of recruiting 70% of at-risk populations and the acceptability of the expert system interventions. Phase II will complete recruitment of 1200 participants randomly assigned to treatment or control and can demonstrate efficacy of these interventions over six months. Follow-up over 18 months can show increasing impact long after the intervention. Effective and cost-effective **stress management** systems can be broadly disseminated with consistent quality and user friendly acceptability. PROPOSED COMMERCIAL APPLICATIONS: Stress is one of the most costly conditions for individuals, employees and health care systems. Fifty million Americans do not practice effective **stress management.** Effective and cost effective expert systems that can treat stress on a population basis have outstanding commercial impact.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: STRESS REDUCTION AND MYOCARDIAL ISCHEMIA IN BLACKS**

  Principal Investigator & Institution: Castillo-Richmond, Amparo; None; Maharishi University of Management 1000 N 4Th St, Ste 2 Fairfield, Ia 52557

  Timing: Fiscal Year 1998; Project Start 01-SEP-1998; Project End 31-DEC-2003

  Summary: Coronary heart disease (CHD) is the number one cause of death in African-Americans. The frequency and severity of CHD and related risk factors is greater in the African-American population. These risk factors include hypertension, left ventricular hypertrophy, obesity, smoking and psychosocial stress factors such as anger, anxiety, and depression, which are exacerbated by low socioeconomic status in this minority population. Psychosocial stress factors contribute to both physiological and behavioral risk factors for CHD and correlate directly with the incidence of CHD events in blacks and in general populations. The major functional manifestation of CHD is myocardial ischemia, and psychological stress is reported to increase the risk for myocardial ischemia events in the general population. Studies by Blumenthal at Duke University indicate that CHD events in daily life are predicted by psychosocial stress-induced myocardial ischemia events in laboratory settings. Previous research by the project team has demonstrated that the Transcendental Meditation (TM) program reduces psycho-physiological stress. Meta-analyses show that the stress- reduction effects of TM are significantly greater and more consistently replicated than those of any other researched technique. Previous NHLBI-funded research by the project team indicated that stress reduction through the TM program significantly reduced both physiological and

behavioral risk factors for CHD in inner city African-American populations. A follow-up of African-American subjects with mild hypertension who learned TM showed a greater than 50 percent reduction in cardiovascular and all-cause mortality over 5 years a compared to controls. The present pilot study will be an ancillary study to a larger randomized, controlled trial of stress reduction in the treatment and prevention of CHD in high risk African-Americans (Robert Schneider #2RO1HL48107-05). The pilot study will evaluate effects of stress reduction with TM on myocardial ischemia on a subset of 40 African-Americans with CHD and correlate this outcome with changes in CHD risk factors. In a preliminary investigation of patients in the general population with CHD, the TM program reduced stress-induced myocardial ischemia in a laboratory setting. The proposed study, although still pilot research, will attempt to replicate this finding with a larger study population, including a health education control, and using a more direct measure of myocardial ischemia, SPECT-sestamibi testing. The study will elucidate a potentially major mechanism for prevention of CHD morbidity and mortality with a stress-reduction behavioral intervention.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: STRESS, IDENTITY, AND MENTAL HEALTH**

  Principal Investigator & Institution: Meyer, Ilan H.; Sociomedical Sciences; Columbia University Health Sciences New York, Ny 10032

  Timing: Fiscal Year 2003; Project Start 01-APR-2003; Project End 31-MAR-2006

  Summary: (provided by applicant): Members of stigmatized groups are exposed to social stressors related to prejudice that may increase their risk for mental health problems. They confront these stressors by engaging in a multitude of coping responses that can protect them from the adverse effects of stress. Minority identities based on social and psychosocial characteristics are important in defining one's self. Stressors in these areas may therefore affect mental health of diverse minority populations. Identities may be related to mental health both on their own -- e.g., negative self-identity may induce mental health problems --- and through interaction with social stressors --- e.g., stress related to a prominent identity may have more adverse effects than stress related to peripheral identities. It aims to describe social stressors that affect minority populations, explore the coping and social support resources used to confront these social stressors, and assess the impact of minority identity characteristics on the association of stress and mental health problems. The project has both theoretical and practical significance: Theoretically, it promises to enhance our understanding of stress research by considering the role of identity therein, and to enhance social psychological research on stigma, by building on formulations of stress and coping. Practically, it can direct us toward areas that could be targeted for public health and clinical interventions.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: STRESS, SUPPORT AND SURVIVAL--CHILDREN AT MEDICAL RISK**

  Principal Investigator & Institution: Kazak, Anne E.; Professor; Children's Hospital of Philadelphia 34Th St and Civic Ctr Blvd Philadelphia, Pa 19104

  Timing: Fiscal Year 2002; Project Start 30-SEP-1993; Project End 30-JUN-2003

  Summary: Our previous research on psychological sequelae of childhood cancer treatment indicates that symptoms of post traumatic stress are significant for many survivors and their mothers and fathers. Indeed, there are many aspects of cancer and its treatment which are potential traumatic stressors, including invasive medical

procedures, life threat, and disruption of family relationships. These prior data support the importance of anxiety, beliefs about cancer and its treatment, social support and family functioning as both direct and indirect contributions to posttraumatic stress symptoms. This proposal expands research on child and family adjustment to long-term survival of childhood cancer by developing and examining an intervention for posttraumatic stress in childhood cancer survivors and their families. The intervention integrates cognitive behavioral and family intervention approaches for 11-18 year old adolescent survivors, at least one year from the completion of their cancer treatment, and their mothers and fathers, at The Children's Hospital of Philadelphia. Home-based pre (Time 1) and six-month post (Time 2) evaluations will be conducted. Families will be randomized to the intervention or wait list condition after Time 1. The wait list group will receive the intervention after Time 2. The intervention consists of two half-day weekend sessions, eight weeks apart, with the first half-day session focused individually on the recognition of the long-term psychological effects of cancer and its treatment and use of cognitive-behavioral strategies for reducing cancer-related distress, for survivors, mothers and fathers separately. The second half-day session is a family-oriented intervention directed towards helping families communicate more effectively about the impact of cancer and reframe the experiences for themselves as families. Eight families will participate in each intervention, for a total n of 128 families. Data analysis strategies address change in post traumatic stress symptoms with particular attention to anxiety, perceptions of life threat and perceived intensity of treatment, social support and family factors. To our knowledge, this project is unique in providing an empirical evaluation of an intervention combining cognitive behavioral and family intervention techniques to alleviate and prevent ongoing psychological distress in children who have survived cancer and their parents.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: SYMPOSIUM: IS STRESS A DISEASE OR AN ADAPTIVE RESPONSE?**

  Principal Investigator & Institution: Summers, Cliff H.; Biology; University of South Dakota 414 E Clark St Vermillion, Sd 57069

  Timing: Fiscal Year 2001; Project Start 08-DEC-2000; Project End 30-NOV-2001

  Summary: We propose a symposium to explore the implications of stressful responses as adaptive mechanisms in the lives of humans and animals, instead of as pathology. The discussion of hypotheses concerning the role of stress in adaptive application from researchers with evolutionary, systems and mechanistic perspectives may lay the framework for a new way of looking at stress in human health. Considering stress as a useful and adaptive response, evolutionarily adjusted, may contribute a new viewpoint for comprehension of basic mechanisms and health-related applications. The nervous and endocrine systems play a critical role in allowing organisms to cope with environmental stressors. Although most of what we know about the endocrinology of stress comes from work done in laboratory mammals, recent studies in nonmammalian species have identified adaptive features of stress that do not readily fit into current views on stress as a disorder or disease. This proposal requests support for a two-day symposium aimed at assessing the state of knowledge on the comparative neuroendocrinology of stress and adaptation. The symposium will bring together, for the first time, a group of scientists working on diverse aspects of chemical signaling during stress in mammalian and nonmammalian organisms. Our rationale is to provide a forum for discussing the comparative neuroendocrinology of stress from molecular to behavioral levels, thereby encouraging an integrated approach to the topic. The

symposium has three objectives. The first objective is to examine the phylogenetic diversity of the stress response in organisms ranging from invertebrates to mammals. The second goal is to examine comparative aspects of the hypothalamo-hypophysial-adrenal axis related to its role in adaptation. The third goal is to provide an integrative format format in which to discuss the adaptive role of stress in development, reproduction, immune function and behavior. The outcome of the symposium will a) summarize existing knowledge on the comparative endocrinology of stress, b) help in identifying common themes of neural and endocrine integration during stress, and c) broaden existing views of stress and adaptation with respect to basic mechanisms and human health. Thirteen invited speakers will make oral presentations while graduate students or postdoctoral associates will present posters. The symposium will take place at the annual meeting of the Society for Integrative and Comparative Biology January 3rd-7th, 2001, at the Chicago Hilton & Towers, Chicago, IL. The symposium proceedings will be published in the internationally recognized journal American Zoologist. The symposium should be of interest to biomedical researchers, endocrinologists, neurobiologists, physiologists, ecologists and behavioral biologists.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: THE EFFICACY OF A MANTRAM INTERVENTION ON HIV OUTCOMES**

  Principal Investigator & Institution: Bormann, Jill E.; Veterans Medical Research Fdn/San Diego Foundation of San Diego San Diego, Ca 92161

  Timing: Fiscal Year 2002; Project Start 27-SEP-2002; Project End 31-MAY-2004

  Summary: (provided by applicant): This project is a two-year plan to study the efficacy of a mantram (mantra) intervention for interrupting intrusive, stressful thoughts that trigger the stress response in a sample of HIV infected adults. People are living longer with the human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) since the advent of highly active anti-retroviral therapy (HAART). However, there is still no cure. It is well documented that living with HIV/AIDS is stressful and evidence suggests that stress may hasten HIV disease progression by increasing viral replication and suppressing the immune response. **Stress management** intervention studies in the HAART era have shown improvements in both psychological and physiological measures in H1V infected persons using complex combinations of" cognitive and relaxation therapies. However, no studies have focused on only one intervention or have addressed a spiritual component using a comparable control group to determine which of these interventions is most effective. Epidemiological evidence suggests that spirituality is an important coping resource in HIV/AIDS and is associated with quality of life and well being. A randomized trial (N=60) will be conducted to compare a mantram intervention (n = 30) to an educational control group (n = 30) on primary outcomes of self-reported intrusive thoughts, anxiety, anger, and perceived stress; secondary outcomes of emotion-focused coping, quality of life enjoyment and satisfaction, existential spiritual well being; and tertiary outcomes of salivary cortisol and urinary catecholamines. The intervention will be given over a 10-week period with 5 weekly classes, 4 weekly-automated phone calls, and one final class meeting. Assessments will be conducted at pre-intervention, fifth class midpoint, tenth week post-intervention, and 3-month follow-up. The primary evaluation of intervention efficacy will be conducted using a 2 (group) by 4 (time) mixed ANOVA design with time as a repeated measure. This study is an effort to simplify **stress management** interventions and to incorporate an element of spirituality, an often-overlooked coping resource for people with HIV. The program is based on a mind-body-spirit philosophy

and research on the relaxation response. The study will target both HIV infected men and women, will focus primarily on one intervention technique, and will include a comparable control group for a strong experimental design.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: TLC TELEPHONE SYSTEM FOR ALZHEIMERS FAMILY CAREGIVERS**

  Principal Investigator & Institution: Mahoney, Diane M.; Director/ Senior Research Scientist; Hebrew Rehabilitation Center for Aged 1200 Centre St, Roslindale Boston, Ma 02131

  Timing: Fiscal Year 2001; Project Start 15-SEP-1995; Project End 31-DEC-2002

  Summary: The specific aim of this study is to assess, by means of a multi-site randomized controlled feasibility study, the impact of an automated telecommunications system, Telephone-Linked Care for Alzheimer's Disease (TLC-AD), on reducing caregiver (GG) stress related to disruptive behaviors in Alzheimer's Disease (AD). TLC-AD speaks over the telephone to CGs using a computer controlled human voice system. CGs press designated keys on the touch tone keypad of their home telephone to communicate with TLC-AD. TLC-AD will 1) monitor the primary caregiver's stress and health status weekly and make recommendations and referrals if necessary, 2) provide a voice-mail caregiver support network to reduce social isolation, 3) provide an bask the expert call option for recalcitrant caregiving problems, and 4) offer a distraction conversation for CGs to use when they desire a mini-respite break from the person with AD. The primary outcome variable is CG stress, and this is proposed for the common assessment protocol as well as caregiver health status. Pearlin's model of caregiver stress in Alzheimer's Disease provides the conceptual framework for the study and suggests that the manifestations of CG stress include depression, decline in physical health status, and yielding of the CG role. The primary hypothesis of this study is that primary CGs of persons with AD and dementia related disruptive behaviors who use TLC-AD will experience fewer manifestations of caregiver stress than subjects who do not receive the intervention. The study will be conducted at five sites with 688 caregivers: 80% female, 30% minority. Subjects will be randomized within each site to usual care (UC) or TLC-AD (which they will use weekly for 12 months). The analysis will compare TLC and UC subjects at baseline, 6, 12, and 18 months using standardized instruments and controlling for common confounding CG and care recipient (CR) variables. If the TLC-AD exerts a significant effect on CG stress, path analysis will be used to clarify the relationships among the variables and CG stress. The cost effectiveness of the TLC intervention will also be determined. In previous TLC applications, the operating costs have averaged $1.00 per call for weekly monitoring. The results will provide insight into the potential of telecommunications technology to help sustain primary CGs in their vital role.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: TREATING ADDICTION TO SLEEP MEDICATION**

  Principal Investigator & Institution: Lichstein, Kenneth L.; Professor; Psychology; University of Memphis Memphis, Tn 38152

  Timing: Fiscal Year 2002; Project Start 30-SEP-2002; Project End 30-MAR-2008

  Summary: (provided by applicant): Hypnotic-dependent insomnia (HDI) refers to insomnia maintained by the chronic use of sleep medications (hypnotics) with associated tolerance and dependence. Benzodiazepines, one class of commonly used

sleep medications, are particularly prone to producing addiction and negative side effects. Similar, but often less severe negative effects, are associated with nonbenzodiazepine prescription sleep medications. The efficacy of psychological treatments for insomnia is well established, but there has been relatively little research on the use of these same treatments for people with insomnia who are also addicted to sleep medication. The planned study will treat 90 young and middle-aged adults, ages 21-59, diagnosed with HDI secondary to prescribed sleep medication in a randomized experiment with three conditions: scheduled gradual hypnotic withdrawal supplemented by **stress management** (relaxation, stimulus control, and sleep hygiene), scheduled gradual hypnotic withdrawal supplemented by placebo desensitization, and scheduled gradual hypnotic withdrawal only. Assessments at baseline, post-treatment/withdrawal, and 1-year follow-up will include monitoring of hypnotic consumption, self-report and laboratory sleep evaluations, drug screens, and measures of daytime functioning. Side effects during the drug withdrawal period will also be monitored by self-report. The study will attempt to determine if adding psychological treatments to gradual drug withdrawal will improve success of drug withdrawal, diminish withdrawal side-effects, improve sleep, or improve daytime functioning compared to gradual drug withdrawal alone in the management of HDI. This project fits within the guidelines of a Stage II clinical trial according to the Behavioral Therapies Development Program of the National Institute on Drug Abuse.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: TREATMENT OF ALCOHOL PROBLEMS FOR VIOLENCE PRONE YOUTH**

  Principal Investigator & Institution: Gil, Andres G.; Associate Professor and Associate Direct; School of Social Work; Florida International University Division of Sponsored Research and Training Miami, Fl 33199

  Timing: Fiscal Year 2002; Project Start 01-AUG-2002; Project End 31-JUL-2007

  Summary: (provided by applicant): "Treatment of Alcohol Problems for Violence Prone Youth" is a five-year research project designed to develop and test a school-based alcohol abuse/violent behavior intervention with a multicultural sample of violence prone alternative school youth with alcohol and substance use problems. Adolescent alcohol and drug use/abuse and juvenile violence are pressing social problems in America. Moreover, an extensive literature has documented significant associations between substance use/abuse and juvenile violence. Compared with the general population of adolescents, juvenile offenders are more likely to use alcohol, tobacco, and other drugs, are more likely to have substance use problems, and use substances at earlier ages. The proposed study is a randomized clinical trial evaluating the efficacy of a school-based intervention (Guided Self-Change). Key features of the study include manualized treatments, theory-driven hypotheses, a randomized controlled trial design, and a culturally/ethnically diverse sample of youth with co-occurring problems of substance abuse and violent behaviors. Participants (n=800) will be randomly assigned to two conditions: a brief intensive school-based intervention (GSC) or standard care (SC and referral] provided by Communities in Schools of Miami. The school-based intervention will consist of 5-7 weekly individual sessions of GSC. Participants will be assessed immediately before and after intervention and at 3- and 6-month follow-up. Primary hypotheses include: 1) adolescents assigned to GSC will demonstrate significantly greater reductions in alcohol and other drug involvement thanadolescents assigned to SC; and 2) adolescents assigned to GSC will demonstrate significantly greater reductions in violent behavior and attitudes than those assigned to SC. Our

second aim is to examine processes of change associated with response to the GSC intervention. Analyses will involve: 1) measuring the degree to which participants demonstrate pretreatment/post-treatment changes in selected domains (i.e., stress-coping skills, social skills, adolescent-parent communication skills, motivation to change) directly reflecting each of the intervention components; and 2) examining whether changes in these domains predict participants? ultimate response to intervention. A third aim is to examine contextual variables, representing significant subgroups of adolescents that may predict differential treatment. These include family and neighborhood substance use and violence, and peer and adult social support. Finally, the fourth aim is to examine treatment response by factors related to race/ethnicity and gender. These factors include acculturation level, acculturation stress, discrimination, and cultural mistrust for race/ethnic factors, and psychopathology and abuse experiences for gender factors.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: TREATMENT OF DEPRESSION AFTER CORONARY BYPASS SURGERY**

  Principal Investigator & Institution: Freedland, Kenneth E.; Professor of Medical Psychology; Psychiatry; Washington University Lindell and Skinker Blvd St. Louis, Mo 63130

  Timing: Fiscal Year 2001; Project Start 29-JUN-2001; Project End 31-MAY-2005

  Summary: (Adapted from investigator's abstract): Depression is a common and persistent problem after coronary artery bypass graft (CABG) surgery that complicates recovery, increases the risk of cardiac events, and may exacerbate the neurocognitive deficits that are often observed in post-CABG patients. Although CABG is one of the most frequently performed operations in the United States, there have not been any randomized, controlled trials of treatments for depression in this population. The aims of this study are (1) to compare the efficacy of cognitive behavior therapy (CBT), **stress management** (SM), and usual care (UC) for major depression following CABG surgery; (2) to determine the effects of CBT on neurocognitive performance, psychosocial adjustment, functional status, employment status, and health-related quality of life; and (3) to collect pilot data on the relationship between the treatment of depression and the 12-month incidence of cardiac and cerebrovascular events following CABG. Consenting patients will be screened for depression 4 to 6 weeks after surgery. Those who screen positive will return for a psycho-diagnostic evaluation and additional testing approximately 1 week later. A sample of 165 patients with major depression who meet all other eligibility criteria will be randomized to 12 weeks of CBT, SM, or UC with no restriction on non-study antidepressants. Participants in all 3 arms will be monitored for worsening depression and will be referred for additional care if needed. Depression outcomes will be assessed 12 weeks post-randomization and 6 months after surgery (2 months after termination of CBT or SM.) The primary hypothesis is that the post-treatment severity of depression is lower in patients treated with CBT than with SM or UC, with baseline depression severity and non-study treatment as planned covariates. Secondary analyses will test the effects of treatment on remission, neurocognitive and functional recovery, quality of life, and examine the relationships between treatment process and outcome variables.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: TREATMENT OF RECURRENT PAIN SYNDROMES IN CHILDREN**

  Principal Investigator & Institution: Scharff, Lisa; Assistant Professsor; Children's Hospital (Boston) Boston, Ma 021155737

  Timing: Fiscal Year 2001; Project Start 21-JUN-1999; Project End 31-MAY-2004

  Summary: Recurrent Pain Syndromes (RPS) are relatively common to pediatric populations. Two of the most common types of RPS are recurrent abdominal pain (RAP) and migraine. RAP and migraine are commonly thought to be provoked by similar factors (particularly stress), and similar patterns of pain are described in children with both types of RPS. A biobehavioral model has been proposed that relates precipitating, intervening, and functional status factors in chronic and recurring pain in children. This model has not been extensively tested in children with different types of pain disorders. If one model is hypothesized to fit different pain complains, a variety of pediatric pain sufferers should be arrested and compared to that model. Multiple studies with adult pain patients have demonstrated that perceptions of pain are strongly influenced by various psychosocial variables that in turn influence each other. There is a severe lack of such research in pediatric populations. The proposed study will assess the fit of the biobehavioral model in children with RAP and migraine. The precipitating factor of stress will be assessed in the form of daily hassles, and intervening variables such as parental somatic symptoms, depression and anxiety (in both parents), family environment, social support, and stress coping strategies will be evaluated. Functional status variables will include measures of functional disability, depression, anxiety, behavior problems, and school attendance. The biobehavioral model will also be assessed in the form of a treatment addressing **stress management** strategies (the proposed participant of pain in the model). Non-medical treatment of migraine has demonstrated some success, with the majority of studies lacking adequate sample sizes or control groups. Studies examining treatment response in other types of RPS, such as RAP, is lacking. No studies have compared treatment response in different types of RPS to the same treatment. The proposed treatment study will compare a treatment including relaxation training, cognitive coping skills training, thermal biofeedback, and parent education to a hand-cooling biofeedback/supportive therapy control and a waist-list in children with RPS.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: USING AUDIO TO CONVEY MIND/BODY APPROACHES TO CANCER**

  Principal Investigator & Institution: Freudberg, David; Far Reaching Communications 68 Leonard St, 2Nd Fl Belmont, Ma 02478

  Timing: Fiscal Year 2002; Project Start 24-APR-2002; Project End 30-SEP-2003

  Summary: This Phase I project will investigate the feasibility of utilizing the medium of spoken audio to introduce cancer patients to mind/body (behavioral) approaches to cancer survivorship, including **stress management,** relaxation techniques, cognitive therapy and group support. Mind/body techniques will be described as complementary to, not alternatives for, medical treatment. Cancer patients will listen and react to a pilot audiotape developed by an experienced public radio production company. The audio presentation will feature health professionals skilled in mind/body interventions as well as cancer survivors who have experienced such interventions. A Phase I evaluation will determine the pilot's comprehensibility and appeal as well as its impact upon listeners' knowledge and attitudes. In Phase II, a series of audio productions, conveying mind/body strategies for cancer, will be developed and tested with different

populations. The particular characteristics of the listening experience for patients and others will be investigated. The audio programming will eventually be released for national broadcast on public radio and also be made available to cancer patients via cassette tape, compact disc, internet audio and other media. PROPOSED COMMERCIAL APPLICATION: Licensing of audio product for national radio broadcast; sale of audio cassettes to oncology clinics, public health agencies, libraries, counseling centers; dissemination and sale through internet audio channels.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: WORKPLACE HARASSMENT, SERVICE UTILIZATION, AND DRINKING**

  Principal Investigator & Institution: Rospenda, Kathleen M.; Psychiatry; University of Illinois at Chicago 1737 West Polk Street Chicago, Il 60612

  Timing: Fiscal Year 2002; Project Start 01-SEP-2002; Project End 31-AUG-2005

  Summary: (provided by applicant): The goals of this study are: 1) to examine the importance of workplace harassment (WH) as a predictor of alcohol use and misuse over time, in the context of other risk and protective factors, in a nationally representative employed sample; 2) to compare the use of professional services by WH victims compared to non-victims; and 3) to investigate whether and how gender influences the relationships among these variables. We will focus on the roles that 1) mental health, health, and other types of services use, 2) work-related social support, 3) coping style and behavior, 4) tension-reduction drinking expectancies, and 5) history of abuse and harassment outside the workplace play in increasing or decreasing vulnerability to negative alcohol outcomes for WH victims over time. This study will be the first to 1) gather national data on WH, thereby allowing a generalizable test of the alcohol-related effects of WH found in other studies, and 2) incorporate multiple types of WH experiences, including sexual, racial, faith-based, and generalized harassment. Random digit dial telephone survey methodology will be used to conduct a two-wave panel study (baseline, 12 months) on a national sample of 2,500 employed adult men and women. The survey will address: WH experiences, general job and life stress, history of non-workplace harassment and abuse, alcohol consumption patterns, problem drinking, tension-reduction drinking expectancies, coping (e.g., actively addressing WH; elicitation of work-related social support; use of professional services), focus of and satisfaction with services, psychological distress, job satisfaction, and physical health. A variety of statistical techniques (e.g., mixed-effects regression, structural equation modeling) will be used to depict changes over time in WH experiences and drinking outcomes, and to depict the varied pathways through which WH impacts on deleterious drinking and other outcomes. Major long-term objectives are: 1) to add to the body of knowledge regarding psychosocial risk factors for problematic alcohol use; 2) to use this knowledge to develop generalizable treatment and intervention guidelines to a) address alcohol use and misuse in clients presenting with WH and job stress-related problems, and b) to minimize other workplace consequences of WH and alcohol use.

  Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

E-Journals: PubMed Central[3]

PubMed Central (PMC) is a digital archive of life sciences journal literature developed and managed by the National Center for Biotechnology Information (NCBI) at the U.S. National Library of Medicine (NLM).[4] Access to this growing archive of e-journals is free and unrestricted.[5] To search, go to **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Pmc**, and type "stress management" (or synonyms) into the search box. This search gives you access to full-text articles. The following is a sample of items found for stress management in the PubMed Central database:

- **Roles of the Escherichia coli Small Heat Shock Proteins IbpA and IbpB in Thermal Stress Management: Comparison with ClpA, ClpB, and HtpG In Vivo.** by Thomas JG, Baneyx F.; 1998 Oct 1;
  http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=107554
- **The World Trade Center Attack: Helping the helpers: the role of critical incident stress management.** by Hammond J, Brooks J.; 2001;
  http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=137378

The National Library of Medicine: PubMed

One of the quickest and most comprehensive ways to find academic studies in both English and other languages is to use PubMed, maintained by the National Library of Medicine.[6] The advantage of PubMed over previously mentioned sources is that it covers a greater number of domestic and foreign references. It is also free to use. If the publisher has a Web site that offers full text of its journals, PubMed will provide links to that site, as well as to sites offering other related data. User registration, a subscription fee, or some other type of fee may be required to access the full text of articles in some journals.

To generate your own bibliography of studies dealing with stress management, simply go to the PubMed Web site at **http://www.ncbi.nlm.nih.gov/pubmed**. Type "stress management" (or synonyms) into the search box, and click "Go." The following is the type of output you can expect from PubMed for stress management (hyperlinks lead to article summaries):

- **A chronic emergency room visitor with chest pain: successful treatment by stress management training and biofeedback.**
  Author(s): Schwartz DP, Large HS, DeGood DE, Wegener ST, Rowlingson JC.
  Source: Pain. 1984 March; 18(3): 315-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6728497&dopt=Abstract

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[3] Adapted from the National Library of Medicine: **http://www.pubmedcentral.nih.gov/about/intro.html**.

[4] With PubMed Central, NCBI is taking the lead in preservation and maintenance of open access to electronic literature, just as NLM has done for decades with printed biomedical literature. PubMed Central aims to become a world-class library of the digital age.

[5] The value of PubMed Central, in addition to its role as an archive, lies in the availability of data from diverse sources stored in a common format in a single repository. Many journals already have online publishing operations, and there is a growing tendency to publish material online only, to the exclusion of print.

[6] PubMed was developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM) at the National Institutes of Health (NIH). The PubMed database was developed in conjunction with publishers of biomedical literature as a search tool for accessing literature citations and linking to full-text journal articles at Web sites of participating publishers. Publishers that participate in PubMed supply NLM with their citations electronically prior to or at the time of publication.

- **A comparison of nutritional management with stress management in the treatment of bulimia nervosa.**
  Author(s): Laessle RG, Beumont PJ, Butow P, Lennerts W, O'Connor M, Pirke KM, Touyz SW, Waadt S.
  Source: The British Journal of Psychiatry; the Journal of Mental Science. 1991 August; 159: 250-61.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1773242&dopt=Abstract

- **A controlled pilot study of stress management training of elderly patients with congestive heart failure.**
  Author(s): Luskin F, Reitz M, Newell K, Quinn TG, Haskell W.
  Source: Preventive Cardiology. 2002 Fall; 5(4): 168-72.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12417824&dopt=Abstract

- **A departmental stress management plan.**
  Author(s): Anderson CM.
  Source: Health Care Superv. 1990 July; 8(4): 1-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10105035&dopt=Abstract

- **A descriptive study of stress management in a group of pediatric oncology nurses.**
  Author(s): Kushnir T, Rabin S, Azulai S.
  Source: Cancer Nursing. 1997 December; 20(6): 414-21.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9409063&dopt=Abstract

- **A group self-care approach to stress management.**
  Author(s): Garrison J, Scott PA.
  Source: J Psychiatr Nurs Ment Health Serv. 1979 June; 17(6): 9-14.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=221656&dopt=Abstract

- **A job safety program for construction workers designed to reduce the potential for occupational injury using tool box training sessions and computer-assisted biofeedback stress management techniques.**
  Author(s): Johnson KA, Ruppe J.
  Source: Int J Occup Saf Ergon. 2002; 8(3): 321-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12189103&dopt=Abstract

- **A model program: stress management unit--a clinic run by army nurses.**
  Author(s): White LS, Dela Cruz J.
  Source: Military Medicine. 1991 November; 156(11): 599-602. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1771007&dopt=Abstract

- **A personal effectiveness and stress management course for community health workers: a pilot study.**
  Author(s): Butcher P, Davis H.
  Source: Patient Education and Counseling. 1988 August; 12(1): 13-27.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10288205&dopt=Abstract

- **A physician's guide to personal stress management.**
  Author(s): Brody DS.
  Source: Compr Ther. 2002 Summer; 28(2): 160-4.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12085466&dopt=Abstract

- **A pilot study of the impact of stress management techniques on the classroom behavior of elementary school students.**
  Author(s): Petosa R, Oldfield D.
  Source: The Journal of School Health. 1985 February; 55(2): 69-71.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3883058&dopt=Abstract

- **A portable, self-instructional stress management program for college students.**
  Author(s): Greenberg JS, Ramsey SA, Hale JF.
  Source: The Journal of School Health. 1987 February; 57(2): 53-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2434728&dopt=Abstract

- **A practical, step-by-step approach to stress management for women.**
  Author(s): Manderino MA, Brown MC.
  Source: The Nurse Practitioner. 1992 July; 17(7): 18, 21, 24 Passim.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1495595&dopt=Abstract

- **A primer on critical incident stress management: what's really in a name?**
  Author(s): Everly GS Jr.
  Source: Int J Emerg Ment Health. 1999 Spring; 1(2): 77-9. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11227744&dopt=Abstract

- **A self-instructional program on stress management.**
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  Author(s): Sims J.
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  Author(s): Dernocoeur K.
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CHAPTER 2. NUTRITION AND STRESS MANAGEMENT

Overview

In this chapter, we will show you how to find studies dedicated specifically to nutrition and stress management.

Finding Nutrition Studies on Stress Management

The National Institutes of Health's Office of Dietary Supplements (ODS) offers a searchable bibliographic database called the IBIDS (International Bibliographic Information on Dietary Supplements; National Institutes of Health, Building 31, Room 1B29, 31 Center Drive, MSC 2086, Bethesda, Maryland 20892-2086, Tel: 301-435-2920, Fax: 301-480-1845, E-mail: ods@nih.gov). The IBIDS contains over 460,000 scientific citations and summaries about dietary supplements and nutrition as well as references to published international, scientific literature on dietary supplements such as vitamins, minerals, and botanicals.[7] The IBIDS includes references and citations to both human and animal research studies.

As a service of the ODS, access to the IBIDS database is available free of charge at the following Web address: **http://ods.od.nih.gov/databases/ibids.html**. After entering the search area, you have three choices: (1) IBIDS Consumer Database, (2) Full IBIDS Database, or (3) Peer Reviewed Citations Only.

Now that you have selected a database, click on the "Advanced" tab. An advanced search allows you to retrieve up to 100 fully explained references in a comprehensive format. Type "stress management" (or synonyms) into the search box, and click "Go." To narrow the search, you can also select the "Title" field.

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[7] Adapted from **http://ods.od.nih.gov**. IBIDS is produced by the Office of Dietary Supplements (ODS) at the National Institutes of Health to assist the public, healthcare providers, educators, and researchers in locating credible, scientific information on dietary supplements. IBIDS was developed and will be maintained through an interagency partnership with the Food and Nutrition Information Center of the National Agricultural Library, U.S. Department of Agriculture.

The following information is typical of that found when using the "Full IBIDS Database" to search for "stress management" (or a synonym):

- **Nutrition and stress management.**
  Source: Velasco, Z.F. Bulletin-of-the-Nutrition-Foundation-of-the-Philippines (Philippines). (Nov-December 1998). volume 38(6) page 1-5. Issued April 1999. health stress symptoms diet vitamins human nutrition 0115-091X
- **Stress management. The complementary alternative medicine approach.**
  Source: Krebs, K Gastroenterol-Nurs. 2001 Sep-October; 24(5): 261-3 1042-895X
- **The Japanese Tea Ceremony and stress management.**
  Source: Keenan, J Holist-Nurs-Pract. 1996 January; 10(2): 30-7 0887-9311

Federal Resources on Nutrition

In addition to the IBIDS, the United States Department of Health and Human Services (HHS) and the United States Department of Agriculture (USDA) provide many sources of information on general nutrition and health. Recommended resources include:

- healthfinder®, HHS's gateway to health information, including diet and nutrition: **http://www.healthfinder.gov/scripts/SearchContext.asp?topic=238&page=0**
- The United States Department of Agriculture's Web site dedicated to nutrition information: **www.nutrition.gov**
- The Food and Drug Administration's Web site for federal food safety information: **www.foodsafety.gov**
- The National Action Plan on Overweight and Obesity sponsored by the United States Surgeon General: **http://www.surgeongeneral.gov/topics/obesity/**
- The Center for Food Safety and Applied Nutrition has an Internet site sponsored by the Food and Drug Administration and the Department of Health and Human Services: **http://vm.cfsan.fda.gov/**
- Center for Nutrition Policy and Promotion sponsored by the United States Department of Agriculture: **http://www.usda.gov/cnpp/**
- Food and Nutrition Information Center, National Agricultural Library sponsored by the United States Department of Agriculture: **http://www.nal.usda.gov/fnic/**
- Food and Nutrition Service sponsored by the United States Department of Agriculture: **http://www.fns.usda.gov/fns/**

Additional Web Resources

A number of additional Web sites offer encyclopedic information covering food and nutrition. The following is a representative sample:

- AOL: **http://search.aol.com/cat.adp?id=174&layer=&from=subcats**
- Family Village: **http://www.familyvillage.wisc.edu/med_nutrition.html**
- Google: **http://directory.google.com/Top/Health/Nutrition/**
- Healthnotes: **http://www.healthnotes.com/**

- Open Directory Project: **http://dmoz.org/Health/Nutrition/**
- Yahoo.com: **http://dir.yahoo.com/Health/Nutrition/**
- WebMD®Health: **http://my.webmd.com/nutrition**
- WholeHealthMD.com: **http://www.wholehealthmd.com/reflib/0,1529,00.html**

The following is a specific Web list relating to stress management; please note that any particular subject below may indicate either a therapeutic use, or a contraindication (potential danger), and does not reflect an official recommendation:

- **Food and Diet**

  Hypertension
  Source: Healthnotes, Inc.; www.healthnotes.com

  Low-Fat Diet
  Source: Healthnotes, Inc.; www.healthnotes.com

CHAPTER 3. ALTERNATIVE MEDICINE AND STRESS MANAGEMENT

Overview

In this chapter, we will begin by introducing you to official information sources on complementary and alternative medicine (CAM) relating to stress management. At the conclusion of this chapter, we will provide additional sources.

National Center for Complementary and Alternative Medicine

The National Center for Complementary and Alternative Medicine (NCCAM) of the National Institutes of Health (**http://nccam.nih.gov/**) has created a link to the National Library of Medicine's databases to facilitate research for articles that specifically relate to stress management and complementary medicine. To search the database, go to the following Web site: **http://www.nlm.nih.gov/nccam/camonpubmed.html**. Select "CAM on PubMed." Enter "stress management" (or synonyms) into the search box. Click "Go." The following references provide information on particular aspects of complementary and alternative medicine that are related to stress management:

- **A job safety program for construction workers designed to reduce the potential for occupational injury using tool box training sessions and computer-assisted biofeedback stress management techniques.**
  Author(s): Johnson KA, Ruppe J.
  Source: Int J Occup Saf Ergon. 2002; 8(3): 321-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12189103&dopt=Abstract

- **A systematic review of stress and stress management interventions for mental health nurses.**
  Author(s): Edwards D, Burnard P.
  Source: Journal of Advanced Nursing. 2003 April; 42(2): 169-200. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12670386&dopt=Abstract

- **Cognitive-behavioral stress management decreases dysphoric mood and herpes simplex virus-type 2 antibody titers in symptomatic HIV-seropositive gay men.**
  Author(s): Lutgendorf SK, Antoni MH, Ironson G, Klimas N, Kumar M, Starr K, McCabe P, Cleven K, Fletcher MA, Schneiderman N.
  Source: Journal of Consulting and Clinical Psychology. 1997 February; 65(1): 31-43.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9103732&dopt=Abstract

- **Cognitive-behavioral stress management intervention effects on anxiety, 24-hr urinary norepinephrine output, and T-cytotoxic/suppressor cells over time among symptomatic HIV-infected gay men.**
  Author(s): Antoni MH, Cruess DG, Cruess S, Lutgendorf S, Kumar M, Ironson G, Klimas N, Fletcher MA, Schneiderman N.
  Source: Journal of Consulting and Clinical Psychology. 2000 February; 68(1): 31-45.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10710838&dopt=Abstract

- **Comparison of stress and stress management strategies between lesbian and heterosexual women.**
  Author(s): Bernhard LA, Applegate JM.
  Source: Health Care for Women International. 1999 July-August; 20(4): 335-47.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10745751&dopt=Abstract

- **Complementary healthcare practices. Stress management for gastrointestinal disorders: the use of kundalini yoga meditation techniques.**
  Author(s): Shannahoff-Khalsa D.
  Source: Gastroenterology Nursing : the Official Journal of the Society of Gastroenterology Nurses and Associates. 2002 May-June; 25(3): 126-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12055381&dopt=Abstract

- **Computerised biofeedback games: a new method for teaching stress management and its use in irritable bowel syndrome.**
  Author(s): Leahy A, Clayman C, Mason I, Lloyd G, Epstein O.
  Source: Journal of the Royal College of Physicians of London. 1998 November-December; 32(6): 552-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9881312&dopt=Abstract

- **Development of brief stress management support groups for couples undergoing in vitro fertilization treatment.**
  Author(s): McNaughton-Cassill ME, Bostwick JM, Vanscoy SE, Arthur NJ, Hickman TN, Robinson RD, Neal GS, Bostwick M.
  Source: Fertility and Sterility. 2000 July; 74(1): 87-93. Erratum In: Fertil Steril 2000 October; 74(4): 851.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10899502&dopt=Abstract

- **Effect of Sahaja yoga practice on stress management in patients of epilepsy.**
  Author(s): Panjwani U, Gupta HL, Singh SH, Selvamurthy W, Rai UC.
  Source: Indian J Physiol Pharmacol. 1995 April; 39(2): 111-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7649596&dopt=Abstract

- **Effectiveness of a stress management program for family caregivers of the elderly at home.**
  Author(s): Mizuno E, Hosak T, Ogihara R, Higano H, Mano Y.
  Source: J Med Dent Sci. 1999 December; 46(4): 145-53.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12160252&dopt=Abstract

- **Effects of aerobic exercise versus stress management treatment in fibromyalgia. A 4.5 year prospective study.**
  Author(s): Wigers SH, Stiles TC, Vogel PA.
  Source: Scandinavian Journal of Rheumatology. 1996; 25(2): 77-86.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8614771&dopt=Abstract

- **Effects of stress management on PNI-based outcomes in persons with HIV disease.**
  Author(s): McCain NL, Munjas BA, Munro CL, Elswick RK Jr, Robins JL, Ferreira-Gonzalez A, Baliko B, Kaplowitz LG, Fisher EJ, Garrett CT, Brigle KE, Kendall LC, Lucas V, Cochran KL.
  Source: Research in Nursing & Health. 2003 April; 26(2): 102-17.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12652607&dopt=Abstract

- **Efficacy and costs of two forms of stress management training for cancer patients undergoing chemotherapy.**
  Author(s): Jacobsen PB, Meade CD, Stein KD, Chirikos TN, Small BJ, Ruckdeschel JC.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 June 15; 20(12): 2851-62.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12065562&dopt=Abstract

- **Efficacy of a stress management program for patients with hepatocellular carcinoma receiving transcatheter arterial embolization.**
  Author(s): Lin ML, Tsang YM, Hwang SL.
  Source: J Formos Med Assoc. 1998 February; 97(2): 113-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9509846&dopt=Abstract

- **Evaluating the feasibility and efficacy of a self-administered manual-based stress management intervention for individuals with asthma: results from a controlled study.**
  Author(s): Hockemeyer J, Smyth J.

Source: Behavioral Medicine (Washington, D.C.). 2002 Winter; 27(4): 161-72.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12165970&dopt=Abstract

- **Health effects of stress management in the worksite.**
  Author(s): Lusk SL.
  Source: Aaohn Journal : Official Journal of the American Association of Occupational Health Nurses. 1997 March; 45(3): 149-52. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9146116&dopt=Abstract

- **Holistic health stress management program. Nursing student and client health outcomes.**
  Author(s): Stetson B.
  Source: Journal of Holistic Nursing : Official Journal of the American Holistic Nurses' Association. 1997 June; 15(2): 143-57.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9165804&dopt=Abstract

- **Implementing a stress management training: comparative trainer effectiveness.**
  Author(s): de Jong GM, Emmelkamp PM.
  Source: Journal of Occupational Health Psychology. 2000 April; 5(2): 309-20.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10784292&dopt=Abstract

- **Integrating multidimensional stress management into a baccalaureate nursing curriculum.**
  Author(s): Grossman S, Wheeler K.
  Source: Nursingconnections. 1999 Summer; 12(2): 23-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10690113&dopt=Abstract

- **Introducing stress management into general practice.**
  Author(s): Singh H.
  Source: Aust Fam Physician. 1996 August; 25(8): 1228-31.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8771880&dopt=Abstract

- **Is there a role for stress management in reducing hypertension in African Americans?**
  Author(s): Kondwani KA, Lollis CM.
  Source: Ethn Dis. 2001 Fall; 11(4): 788-92. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11763303&dopt=Abstract

- **Lifestyle modifications to prevent and control hypertension. 7. Recommendations on stress management. Canadian Hypertension Society, Canadian Coalition for High Blood Pressure Prevention and Control, Laboratory Centre for Disease Control at Health Canada, Heart and Stroke Foundation of Canada.**
  Author(s): Spence JD, Barnett PA, Linden W, Ramsden V, Taenzer P.

Source: Cmaj : Canadian Medical Association Journal = Journal De L'association Medicale Canadienne. 1999 May 4; 160(9 Suppl): S46-50.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10333853&dopt=Abstract

- **Management of chronic tension-type headache with tricyclic antidepressant medication, stress management therapy, and their combination: a randomized controlled trial.**
  Author(s): Holroyd KA, O'Donnell FJ, Stensland M, Lipchik GL, Cordingley GE, Carlson BW.
  Source: Jama : the Journal of the American Medical Association. 2001 May 2; 285(17): 2208-15.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11325322&dopt=Abstract

- **Maxed out? Mellow out with these personal stress management strategies.**
  Author(s): Campbell SJ.
  Source: Mcn. the American Journal of Maternal Child Nursing. 1996 May-June; 21(3): 123-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8857391&dopt=Abstract

- **Meditation-based stress management for doctors and students.**
  Author(s): Sommer SJ, Hassed CS.
  Source: The Medical Journal of Australia. 1995 July 17; 163(2): 112.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7616895&dopt=Abstract

- **Mind-body medicine for stress management and opportunities at NCCAM.**
  Author(s): Le Tourneau M.
  Source: Alternative Therapies in Health and Medicine. 2003 September-October; 9(5): 18.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=14526707&dopt=Abstract

- **MJA practice essentials. 6. Stress management and counselling in primary care.**
  Author(s): Turner J, Raphael B.
  Source: The Medical Journal of Australia. 1997 November 17; 167(10): 547-51. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9397044&dopt=Abstract

- **Modification of pathological type A as worksite stress management and disease prevention intervention.**
  Author(s): Zonierczyk-Zreda D.
  Source: Int J Occup Saf Ergon. 2000; 6(2): 169-88. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10929150&dopt=Abstract

- **Occupational stress management programmes: a practical overview of published effect studies.**
  Author(s): van der Hek H, Plomp HN.

Source: Occupational Medicine (Oxford, England). 1997 April; 47(3): 133-41. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9156467&dopt=Abstract

- **Perceptual responses to infant crying after EEG biofeedback assisted stress management training: implications for physical child abuse.**
  Author(s): Tyson PD, Sobschak KB.
  Source: Child Abuse & Neglect. 1994 November; 18(11): 933-43.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7850602&dopt=Abstract

- **Psychosocial and immune effects of self-hypnosis training for stress management throughout the first semester of medical school.**
  Author(s): Whitehouse WG, Dinges DF, Orne EC, Keller SE, Bates BL, Bauer NK, Morahan P, Haupt BA, Carlin MM, Bloom PB, Zaugg L, Orne MT.
  Source: Psychosomatic Medicine. 1996 May-June; 58(3): 249-63.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8771625&dopt=Abstract

- **Quantifying livestock responses for heat stress management: a review.**
  Author(s): Nienaber JA, Hahn GL, Eigenberg RA.
  Source: International Journal of Biometeorology. 1999 April; 42(4): 183-8. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10232054&dopt=Abstract

- **Reductions in herpes simplex virus type 2 antibody titers after cognitive behavioral stress management and relationships with neuroendocrine function, relaxation skills, and social support in HIV-positive men.**
  Author(s): Cruess S, Antoni M, Cruess D, Fletcher MA, Ironson G, Kumar M, Lutgendorf S, Hayes A, Klimas N, Schneiderman N.
  Source: Psychosomatic Medicine. 2000 November-December; 62(6): 828-37.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11139003&dopt=Abstract

- **Relaxing on the run: stress management for the busy professional.**
  Author(s): Richards G.
  Source: Contemp Top Lab Anim Sci. 2001 May; 40(3): 89-90. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11411459&dopt=Abstract

- **Role of yogic exercises/meditation in aircrew stress management.**
  Author(s): Singh R.
  Source: Aviation, Space, and Environmental Medicine. 1999 September; 70(9): 939.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10503762&dopt=Abstract

- **Staying the course in stormy seas: establishing a central Critical Incident Stress Management team in the Navy Marine Corps environment.**
  Author(s): Webb TE.

Source: Int J Emerg Ment Health. 1999 Winter; 1(1): 43-50.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11227754&dopt=Abstract

- **Stress and transtheoretical model indicators of stress management behaviors in HIV-positive women.**
  Author(s): Riley TA, Fava JL.
  Source: Journal of Psychosomatic Research. 2003 March; 54(3): 245-52.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12614834&dopt=Abstract

- **Stress management and psychoneuroimmunology in HIV infection.**
  Author(s): Antoni MH.
  Source: Cns Spectr. 2003 January; 8(1): 40-51. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12627048&dopt=Abstract

- **Stress management for dental students performing their first pediatric restorative procedure.**
  Author(s): Piazza-Waggoner CA, Cohen LL, Kohli K, Taylor BK.
  Source: J Dent Educ. 2003 May; 67(5): 542-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12809189&dopt=Abstract

- **Stress management for nurses: controlling the whirlwind.**
  Author(s): Kivisto J, Couture RT.
  Source: Nursing Forum. 1997 January-March; 32(1): 25-33. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9110750&dopt=Abstract

- **Stress management for patient and physician.**
  Author(s): Satya AJ.
  Source: J Indian Med Assoc. 2001 February; 99(2): 90-2.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11482809&dopt=Abstract

- **Stress management for people with epilepsy.**
  Author(s): Dilorio CK, Childers K, Austin JK.
  Source: Clin Nurs Pract Epilepsy. 1997 July; 4(2): 9-10. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9304995&dopt=Abstract

- **Stress management for psychiatric patients in a state hospital setting.**
  Author(s): Starkey D, Deleone H, Flannery RB Jr.
  Source: The American Journal of Orthopsychiatry. 1995 July; 65(3): 446-50.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7485431&dopt=Abstract

- **Stress management for the cardiovascular patient: a look at current treatment and trends.**
  Author(s): Ulmer D.
  Source: Progress in Cardiovascular Nursing. 1996 Winter; 11(1): 21-9. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8657706&dopt=Abstract

- **Stress management in cardiac patients: a preliminary study of the predictors of improvement in quality of life.**
  Author(s): Trzcieniecka-Green A, Steptoe A.
  Source: Journal of Psychosomatic Research. 1994 May; 38(4): 267-80.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8064645&dopt=Abstract

- **Stress management in medical education: a review of the literature.**
  Author(s): Shapiro SL, Shapiro DE, Schwartz GE.
  Source: Academic Medicine : Journal of the Association of American Medical Colleges. 2000 July; 75(7): 748-59. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10926029&dopt=Abstract

- **Stress management in the Federal Bureau of Investigation: principles for program development.**
  Author(s): Sheehan SS.
  Source: Int J Emerg Ment Health. 1999 Winter; 1(1): 39-42.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11227753&dopt=Abstract

- **Stress management in work settings: a critical review of the health effects.**
  Author(s): Murphy LR.
  Source: Am J Health Promot. 1996 November-December; 11(2): 112-35. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10163598&dopt=Abstract

- **Stress management techniques: are they all equivalent, or do they have specific effects?**
  Author(s): Lehrer PM, Carr R, Sargunaraj D, Woolfolk RL.
  Source: Biofeedback Self Regul. 1994 December; 19(4): 353-401. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7880911&dopt=Abstract

- **Stress management. Does it work?**
  Author(s): Reid J.
  Source: Aust Fam Physician. 1996 August; 25(8): 1245-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8771882&dopt=Abstract

- **Stress management. The complementary alternative medicine approach.**
  Author(s): Krebs K.

Source: Gastroenterology Nursing : the Official Journal of the Society of Gastroenterology Nurses and Associates. 2001 September-October; 24(5): 261-3.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11847998&dopt=Abstract

- **Stress management: an exploratory study of chiropractic patients.**
  Author(s): Jamison JR.
  Source: Journal of Manipulative and Physiological Therapeutics. 2000 January; 23(1): 32-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10658874&dopt=Abstract

- **Sufficiency analysis of an integrated multicomponent approach to crisis intervention: Critical Incident Stress Management.**
  Author(s): Everly GS Jr, Flannery RB Jr, Eyler V, Mitchell JT.
  Source: Advances in Mind-Body Medicine. 2001 Summer; 17(3): 174-83.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11572844&dopt=Abstract

- **The effect of an integrated stress management program on the psychologic and physiologic stress reactions of peptic ulcer in Korea.**
  Author(s): Han KS.
  Source: International Journal of Nursing Studies. 2002 July; 39(5): 539-48.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11996874&dopt=Abstract

- **The effect of an integrated stress management program on the psychologic and physiologic stress reactions of peptic ulcer in Korea.**
  Author(s): Han KS.
  Source: Journal of Holistic Nursing : Official Journal of the American Holistic Nurses' Association. 2002 March; 20(1): 61-80.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11898689&dopt=Abstract

- **The effectiveness and practicality of occupational stress management interventions: a survey of subject matter expert opinions.**
  Author(s): Bellarosa C, Chen PY.
  Source: Journal of Occupational Health Psychology. 1997 July; 2(3): 247-62.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9552295&dopt=Abstract

- **The effects of stress management on symptoms of upper respiratory tract infection, secretory immunoglobulin A, and mood in young adults.**
  Author(s): Reid MR, Mackinnon LT, Drummond PD.
  Source: Journal of Psychosomatic Research. 2001 December; 51(6): 721-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11750294&dopt=Abstract

- **The influence of stress management training in HIV disease.**
  Author(s): McCain NL, Zeller JM, Cella DF, Urbanski PA, Novak RM.

Source: Nursing Research. 1996 July-August; 45(4): 246-53.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8700659&dopt=Abstract

- **The Japanese Tea Ceremony and stress management.**
  Author(s): Keenan J.
  Source: Holistic Nursing Practice. 1996 January; 10(2): 30-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8550688&dopt=Abstract

- **The nurse-client relationship in a stress management clinic.**
  Author(s): Lowenberg JS.
  Source: Holistic Nursing Practice. 2003 March-April; 17(2): 99-109.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12701997&dopt=Abstract

- **The relationship of expectancies to outcome in stress management treatment of essential hypertension: results from the Joint USSR-USA Behavioral Hypertension Project.**
  Author(s): Wittrock DA, Blanchard EB, McCoy GC, McCaffrey RJ, Khramelashvili VV.
  Source: Biofeedback Self Regul. 1995 March; 20(1): 51-63.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7786927&dopt=Abstract

- **Why stress management?**
  Author(s): Clearthan L.
  Source: Aust Fam Physician. 1996 August; 25(8): 1197. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8771879&dopt=Abstract

Additional Web Resources

A number of additional Web sites offer encyclopedic information covering CAM and related topics. The following is a representative sample:

- Alternative Medicine Foundation, Inc.: **http://www.herbmed.org/**
- AOL: **http://search.aol.com/cat.adp?id=169&layer=&from=subcats**
- Chinese Medicine: **http://www.newcenturynutrition.com/**
- drkoop.com®: **http://www.drkoop.com/InteractiveMedicine/IndexC.html**
- Family Village: **http://www.familyvillage.wisc.edu/med_altn.htm**
- Google: **http://directory.google.com/Top/Health/Alternative/**
- Healthnotes: **http://www.healthnotes.com/**
- MedWebPlus: **http://medwebplus.com/subject/Alternative_and_Complementary_Medicine**
- Open Directory Project: **http://dmoz.org/Health/Alternative/**

- HealthGate: **http://www.tnp.com/**
- WebMD®Health: **http://my.webmd.com/drugs_and_herbs**
- WholeHealthMD.com: **http://www.wholehealthmd.com/reflib/0,1529,00.html**
- Yahoo.com: **http://dir.yahoo.com/Health/Alternative_Medicine/**

The following is a specific Web list relating to stress management; please note that any particular subject below may indicate either a therapeutic use, or a contraindication (potential danger), and does not reflect an official recommendation:

- **General Overview**

  Asthma
  Source: Integrative Medicine Communications; www.drkoop.com

  Bulimia Nervosa
  Source: Integrative Medicine Communications; www.drkoop.com

  Dermatitis
  Source: Integrative Medicine Communications; www.drkoop.com

  Diabetes Mellitus
  Source: Integrative Medicine Communications; www.drkoop.com

  Eczema
  Source: Healthnotes, Inc.; www.healthnotes.com

  Genital Herpes
  Source: Healthnotes, Inc.; www.healthnotes.com

  High Blood Pressure
  Source: Integrative Medicine Communications; www.drkoop.com

  High Cholesterol
  Source: Integrative Medicine Communications; www.drkoop.com

  High Homocysteine
  Source: Healthnotes, Inc.; www.healthnotes.com

  Hypercholesterolemia
  Source: Integrative Medicine Communications; www.drkoop.com

  Hypertension
  Source: Integrative Medicine Communications; www.drkoop.com

  Hypochondriasis
  Source: Integrative Medicine Communications; www.drkoop.com

  Immune Function
  Source: Healthnotes, Inc.; www.healthnotes.com

Irritable Bowel Syndrome
Source: Healthnotes, Inc.; www.healthnotes.com

Lyme Disease
Source: Integrative Medicine Communications; www.drkoop.com

Migraine Headache
Source: Integrative Medicine Communications; www.drkoop.com

Obesity
Source: Integrative Medicine Communications; www.drkoop.com

Psoriasis
Source: Integrative Medicine Communications; www.drkoop.com

Tension Headache
Source: Healthnotes, Inc.; www.healthnotes.com

Tension Headache
Source: Integrative Medicine Communications; www.drkoop.com

- **Alternative Therapy**

Acupressure
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,662,00.html

Enlighten
Source: The Canoe version of A Dictionary of Alternative-Medicine Methods, by Priorities for Health editor Jack Raso, M.S., R.D.
Hyperlink: http://www.canoe.ca/AltmedDictionary/e.html

Enlighten Habit Modification Systems
Alternative names: EnLighten Habit Modification System
Source: The Canoe version of A Dictionary of Alternative-Medicine Methods, by Priorities for Health editor Jack Raso, M.S., R.D.
Hyperlink: http://www.canoe.ca/AltmedDictionary/e.html

Enlighten System for Children with Learning Difficulties
Source: The Canoe version of A Dictionary of Alternative-Medicine Methods, by Priorities for Health editor Jack Raso, M.S., R.D.
Hyperlink: http://www.canoe.ca/AltmedDictionary/e.html

Enlighten System for Teenagers
Source: The Canoe version of A Dictionary of Alternative-Medicine Methods, by Priorities for Health editor Jack Raso, M.S., R.D.
Hyperlink: http://www.canoe.ca/AltmedDictionary/e.html

Enlighten Weight Management System
Source: The Canoe version of A Dictionary of Alternative-Medicine Methods, by Priorities for Health editor Jack Raso, M.S., R.D.
Hyperlink: http://www.canoe.ca/AltmedDictionary/e.html

Meditation
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,717,00.html

General References

A good place to find general background information on CAM is the National Library of Medicine. It has prepared within the MEDLINEplus system an information topic page dedicated to complementary and alternative medicine. To access this page, go to the MEDLINEplus site at **http://www.nlm.nih.gov/medlineplus/alternativemedicine.html**. This Web site provides a general overview of various topics and can lead to a number of general sources.

CHAPTER 4. DISSERTATIONS ON STRESS MANAGEMENT

Overview

In this chapter, we will give you a bibliography on recent dissertations relating to stress management. We will also provide you with information on how to use the Internet to stay current on dissertations. **IMPORTANT NOTE:** When following the search strategy described below, you may discover non-medical dissertations that use the generic term "stress management" (or a synonym) in their titles. To accurately reflect the results that you might find while conducting research on stress management, we have not necessarily excluded non-medical dissertations in this bibliography.

Dissertations on Stress Management

ProQuest Digital Dissertations, the largest archive of academic dissertations available, is located at the following Web address: **http://wwwlib.umi.com/dissertations**. From this archive, we have compiled the following list covering dissertations devoted to stress management. You will see that the information provided includes the dissertation's title, its author, and the institution with which the author is associated. The following covers recent dissertations found when using this search procedure:

- **A Comparative Analysis of Aerobic Exercise, Restricted Environmental Stimulation (floatation), and Stress Management Training on Physiological and Psychological Measures of Stress** by Walker, Stephen E., PhD from University of Colorado at Boulder, 1984, 350 pages
  http://wwwlib.umi.com/dissertations/fullcit/8422664
- **A Comparative Study of the Effectiveness of the Relaxation Response and Personalized Relaxation Tapes in Medical Technology Students (stress Management)** by Ramsey, Michael Kirby, PhD from University of North Texas, 1984, 158 pages
  http://wwwlib.umi.com/dissertations/fullcit/8501515
- **A Comparison of Instructor-led, Self-paced, and Independent Study Stress Management on Stress Levels of a College Population and the Effects of Exercise on Stress Levels of a College Population** by Skultety, John Scott, PhD from The University of Nebraska - Lincoln, 1996, 319 pages
  http://wwwlib.umi.com/dissertations/fullcit/9637081

- **A Comparison of Metaphorical and Non-metaphorical Graphical User Interfaces for Delivering a Computer-based Instructional Program on Stress and Stress Management** by Berkley, Jeannette S.; EDD from Lehigh University, 2000, 298 pages
  http://wwwlib.umi.com/dissertations/fullcit/9980920
- **A Holistic Analysis of Stress with Implications for Stress Management As a Function of Pastoral Counseling** by Gray, Edward A.; EDD from New Orleans Baptist Theological Seminary, 1981, 163 pages
  http://wwwlib.umi.com/dissertations/fullcit/3089264
- **A Multi-method Evaluation of a Computer-mediated, Stress Management Support Group for Social Workers: Feasibility, Process and Effectiveness** by Meier, Andrea; PhD from The University of North Carolina at Chapel Hill, 1999, 464 pages
  http://wwwlib.umi.com/dissertations/fullcit/9938193
- **A Psychoeducational Approach to Stress Management for Nurses Using Cognitive-behavioral Techniques** by Sullivan, Bonna Moore; DrPH from University of Pittsburgh, 1999, 179 pages
  http://wwwlib.umi.com/dissertations/fullcit/9957785
- **A School-Based, Stress-Inoculation Approach to Stress Management Training with Adolescents: Effects on Locus-of-Control, Self-Concept, State-Trait Anxiety and Social Behavior** by Kubiak, Lawrence Curtis, PhD from University of Florida, 1987, 238 pages
  http://wwwlib.umi.com/dissertations/fullcit/8724923
- **A Self-help Stress Management Guidebook (Wellness, Psychology, Holistic Health, Preventive)** by Winograd, Rochelle Kronsberg, EDD from University of Northern Colorado, 1986, 141 pages
  http://wwwlib.umi.com/dissertations/fullcit/8616213
- **A Stress Management Class and a Stress Management Support Group As Inputs in Reducing Nursing Stress and in Changing Health Values: an Exploratory Study. (volumes I and Ii)** by Lachman, Vicki Diane, PhD from Temple University, 1984, 443 pages
  http://wwwlib.umi.com/dissertations/fullcit/8410203
- **A Study of Colorado Principals' Coping Skills to Manage Job-related Stress and Their School Districts' Efforts to Assist the Principals in Stress Management** by Buzzelli-white, Mary L., EDD from University of Northern Colorado, 1988, 206 pages
  http://wwwlib.umi.com/dissertations/fullcit/8909371
- **A Study of the Effectiveness of a Stress Management Program on Hypertension** by Bosley, Florida Mae, PhD from Washington University, 1982, 118 pages
  http://wwwlib.umi.com/dissertations/fullcit/8223765
- **A Study of the Effects of a Stress Management Program on Job-related Stress Perception of Business Executives (Zen, Buddhism)** by Chang, Chung Yen, EDD from Drake University, 1995, 97 pages
  http://wwwlib.umi.com/dissertations/fullcit/9603226
- **A Study of the Outcomes of Stress Management Training in Ministerial Programs of Higher Education (Burnout)** by Shirley, Philip Elwood, PhD from University of North Texas, 1986, 113 pages
  http://wwwlib.umi.com/dissertations/fullcit/8626053

- **A Study to Determine the Effectiveness of Sworn Law Enforcement Officers' Post-academy Training and Stress Management Skills** by Brewer, Sheryl Anne, PhD from Texas Woman's University, 1997, 90 pages
  http://wwwlib.umi.com/dissertations/fullcit/9733459
- **Alleviating Psychological Distress in Parents of Severely Handicapped Children with Stress Management Training (Family Coping)** by Singer, George H. S., PhD from University of Oregon, 1985, 160 pages
  http://wwwlib.umi.com/dissertations/fullcit/8529541
- **An Analysis of Stress Levels and Stress Management Choices of Attorneys in the State of Wisconsin** by Kozich, Dennis Walter, PhD from The University of Wisconsin - Madison, 1988, 140 pages
  http://wwwlib.umi.com/dissertations/fullcit/8903291
- **An Educational Approach to Stress Management: an Exploratory Study of Behavior Change** by James, Raymond Anthony, EDD from University of California, Berkeley, 1980, 209 pages
  http://wwwlib.umi.com/dissertations/fullcit/8029301
- **An Evaluation of a Stress Management Program on Senior Nursing Students** by Adams, Sheila Valiant, EDD from Mississippi State University, 1980, 194 pages
  http://wwwlib.umi.com/dissertations/fullcit/8021111
- **An Examination of the Effectiveness of Stress Management Training with Elementary School-age Children Living with Their Families in Homeless Shelters** by Davey, Timothy L., PhD from The Florida State University, 1995, 218 pages
  http://wwwlib.umi.com/dissertations/fullcit/9517963
- **An Experimental Investigation Designed to Examine the Efficacy of Instructing Elementary and Middle School Teachers in Stress Management Techniques** by Wilson, Terry Lee, PhD from The Ohio State University, 1982, 177 pages
  http://wwwlib.umi.com/dissertations/fullcit/8305413
- **An Ongoing In-house Stress Management Program for Teachers and Administrators** by Hoffman, Mimi Sara, PhD from University of Pittsburgh, 1983, 140 pages
  http://wwwlib.umi.com/dissertations/fullcit/8327693
- **An Outcome Evaluation of a Stress Management Program** by Nicholson, Thomas John, PhD from Southern Illinois University at Carbondale, 1983, 117 pages
  http://wwwlib.umi.com/dissertations/fullcit/8326553
- **Ask Not Why the Wounded Fall, but How the Valiant Continue to March: New Theory on Work-related Stress Management in the Fire Service** by Woodall, Steven Joseph, PhD from The Fielding Institute, 1998, 115 pages
  http://wwwlib.umi.com/dissertations/fullcit/9907671
- **Assertiveness Training, Stress Management, and Attributional Style** by Blackburn, David R., PhD from University of Houston, 1989, 149 pages
  http://wwwlib.umi.com/dissertations/fullcit/8921600
- **Assessment of Knowledge About, Attitudes Toward, and Behavior Regarding Stress Management Techniques among Health Educators** by Reed, Phyllis Ann, PhD from Southern Illinois University at Carbondale, 1979, 144 pages
  http://wwwlib.umi.com/dissertations/fullcit/8017425

- **Cognitive Affective Stress Management Training with High Performance Youth Volleyball Players Effects on Affect, Cognition, and Performance** by Crocker, Peter R. E; PhD from University of Alberta (Canada), 1988
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- **Cognitive Affective Stress Management Training with High Performance Youth Volleyball Players: Effects on Affect, Cognition, and Performance** by Crocker, Peter Ronald Earl, PhD from University of Alberta (Canada), 1988
  http://wwwlib.umi.com/dissertations/fullcit/f49701
- **Cognitive Restructuring As a Stress Management Technique among Nurses** by Schroeder, Paul Joseph, EDD from Northern Illinois University, 1983, 105 pages
  http://wwwlib.umi.com/dissertations/fullcit/8318313
- **Cognitive-behavioral Treatment of Migraine Headache (Stress Management, Biofeedback)** by Berdine-Notarfonzo, Cathy, PhD from University of Toronto (Canada), 1991, 214 pages
  http://wwwlib.umi.com/dissertations/fullcit/NN73773
- **Conditions and Strategies Affecting Interagency Collaboration in the Development of Critical Incident Stress Management Programs** by Parsley, Lea Ann; PhD from The Ohio State University, 2003, 199 pages
  http://wwwlib.umi.com/dissertations/fullcit/3093687
- **Coping Skills for Resident Physicians: a Program of Stress Management (Physicians)** by Sachs, Carol L., EDD from University of Massachusetts, 1990, 237 pages
  http://wwwlib.umi.com/dissertations/fullcit/9022738
- **Coping with Stress: a Comparison Study of How a Wellness Program Affects Stress Management among Secondary Teachers** by Mitchell, Anna Maria, EDD from Texas Woman's University, 1983, 96 pages
  http://wwwlib.umi.com/dissertations/fullcit/8401211
- **Desire for Control and the Efficacy of Stress Management in Basic Training** by Novak, Matthew Paul; PhD from Michigan State University, 2002, 84 pages
  http://wwwlib.umi.com/dissertations/fullcit/3053784
- **Development of a Stress Management Program for the Reduction of Teacher Anxiety in a Special Education Facility (Burnout)** by Miller, Sandra, EDD from Temple University, 1985, 130 pages
  http://wwwlib.umi.com/dissertations/fullcit/8521116
- **Development of an Adolescent Stress Management Workbook (Teenage Health, Coping, Perceptions)** by Vanwie, Eileen Kalberg, EDD from University of Northern Colorado, 1985, 465 pages
  http://wwwlib.umi.com/dissertations/fullcit/8603228
- **Development, Implementation, and Evaluation of a Course in Stress Management for College Students (relaxation Training, Anxiety)** by Barton, Louanne Mcdougal, PhD from University of Pittsburgh, 1986, 218 pages
  http://wwwlib.umi.com/dissertations/fullcit/8707553
- **Effect of Rational Emotive Therapy Stress Management Workshops on Burnout Level and Attributional Style of Urban School Psychologists** by Warren, Barbara Susan, EDD from St. John's University (new York), 1992, 155 pages
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- **Effect of Stress Management Training on Trait Anxiety Teaching Anxiety, Muscle Tension and Self-concept of Student Teachers** by Vasavada, Girish Kumar, EDD from University of the Pacific, 1981, 195 pages
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- **Effective Stress Management for Teachers: A Workshop Model** by Peters, Martha Moore, PhD from University of Florida, 1981, 155 pages
  http://wwwlib.umi.com/dissertations/fullcit/8127460
- **Effectiveness and Feasibility of a Stress Management Program for Third Grade Children** by Hutchison, Susan Mordini, PhD from University of Illinois at Urbana-Champaign, 1983, 208 pages
  http://wwwlib.umi.com/dissertations/fullcit/8409960
- **Effects of a Leader-facilitated Stress Management Program and a Self-taught Stress Management Program on Locus-of-control, Absenteeism, and Physiological Symptoms of Bakery Employees (Worksite Training, Health Promotion)** by Wirth, Barbara Sandel, EDD from Temple University, 1992, 276 pages
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- **Effects of a Positive Thinking Approach to Stress Management on the Production of Original Verbal Images** by Small, Lamon Hughie, PhD from Mississippi State University, 1984, 105 pages
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- **Effects of a Stress Management Intervention on Levels of Stress and Coping among Pregnant and Parenting Adolescents: an Investigation** by Robison, Charlynn Phillis, PhD from Howard University, 1999, 208 pages
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- **Effects of a Stress Management Program for Caregivers of Elderly Persons on Their Level of Burden and Coping Effectiveness** by Dellasega, Cheryl Ann, PhD from Temple University, 1988, 150 pages
  http://wwwlib.umi.com/dissertations/fullcit/8902958
- **Effects of a Stress Management Program on Nurse Absenteeism, Medication Errors, and Anxiety** by Brown, Olive Patricia, PhD from The University of New Mexico, 1990, 161 pages
  http://wwwlib.umi.com/dissertations/fullcit/9033332
- **Effects of Relaxation Training on Public School Teachers (Stress Management, Burnout)** by Pahnos, Markella L., PhD from University of Pittsburgh, 1984, 119 pages
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- **Effects of Stress Management Instructional Strategies on Situational Anxiety among Beginning Computer Users** by Garrett, Norman Anthony, EDD from Arizona State University, 1986, 154 pages
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- **Effects of Stress Management Intervention on Health and Cognitive Function: Children's Services Division Workers (Worksite-Based)** by Kolbell, Richard Michael, PhD from University of Oregon, 1992, 96 pages
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- **Effects of Stress Management Training on Locus of Control Orientation and State-trait Anxiety in Adolescents** by Hoopfer, Leah B., PhD from Michigan State University, 1982, 201 pages
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- **Evaluating the Effect of Two Stress Management Programs on Trait Anxiety Levels and Locus of Control in Health Care Workers** by Pellegrino, Donna Marie, EDD from Temple University, 1985, 179 pages
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- **Evaluation of an Interpersonally Oriented Job Stress Management Program** by Gadon, Michael C; EDD from University of Toronto (Canada), 1988
  http://wwwlib.umi.com/dissertations/fullcit/NL46380
- **Expatriate Adjustment: Integrating the Stress Management and Sensemaking Perspectives** by Kraimer, Maria L., PhD from University of Illinois at Chicago, 1999, 218 pages
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- **Factors Influencing Adherence to Positive Health Behaviors (stress Management, Reasons, Exercise, Obstacles, Motivation)** by Landrum, Peggy Ann, PhD from Texas A&M University, 1985, 219 pages
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- **Identification and Description of Content Elements for Stress Management in Health Education for High School Students** by Detert, Richard A., PhD from Southern Illinois University at Carbondale, 1985, 198 pages
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- **In the Inferno: Critical Incident Stress Management in the Fire Service. What Works and How Do We Know?** by Blaney, Leigh Steacy MCcarley; MA from Royal Roads University (Canada), 2003, 103 pages
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- **Increasing Job Satisfaction for Community College Faculty and Professional Staff Through a Stress Management Model** by Cassara, Shirley, EDD from University of Massachusetts, 1983, 146 pages
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- **Interaction of Locus of Control and Problem- and Emotion-focused Stress Management Training with First-year University Students** by Boutet, Constance Anne, PhD from The University of Manitoba (Canada), 1994, 234 pages
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- **Mentoring among Special Education Teachers (mentoring, Development, Professional, Stress Management)** by Modiano, Rachel, PsyD from Rutgers the State University of New Jersey, G.S.A.P.P., 1986, 150 pages
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- **Positive Family Stress Management Through the Family Worship Service** by Kim, Sang In; DMIN from Oral Roberts University, 2000, 212 pages
  http://wwwlib.umi.com/dissertations/fullcit/3026230
- **Positive Stress Management for Housewives Through Spiritual Training** by Kim, Jong Hyun, DMIN from Oral Roberts University, 1997, 97 pages
  http://wwwlib.umi.com/dissertations/fullcit/9817207

- **Quality Stress Management: How to Maintain a Quality Workforce in a Service Industry** by Tamayo, Gregory Anthony; MS from California State University, Dominguez Hills, 2002, 33 pages
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- **Relationship between the Team Approach and Stress Management among Hospice Workers** by McNurlen, Bonnie Compton, EDD from Drake University, 1988, 150 pages
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- **Rhetorical Functions of Language and Media in Health Education: Effects of Metadiscourse and the Internet on Readers' Attitudes and Knowledge about Stress Management** by Rachal, Windy Satterlee; PhD from Ball State University, 2002, 142 pages
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- **Salivary Cortisol and Sleep Disruption among Early Stage Breast Cancer Patients Undergoing a Stress Management and Relaxation Training Intervention** by Fox, Susan Marie; PhD from University of Miami, 2002, 103 pages
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- **Self-instructional Training in Stress Management** by Bowman, Roland Glen; PhD from The University of British Columbia (Canada), 1977
  http://wwwlib.umi.com/dissertations/fullcit/NK34765
- **Skills of Stress Management and School Administrators** by Novak, Joseph Charles, EDD from Kansas State University, 1991, 327 pages
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- **Status of Stress Management Training in Industry** by Kovanic-Grimes, Nancy, PhD from University of Illinois at Urbana-Champaign, 1997, 122 pages
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- **Stress Factors and Stress Management Strategies for Fbi Agent Spouses: Basis for Potential Community College Workshops and Classes** by Bryant, Helen E. (Beth); DA from George Mason University, 1999, 131 pages
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- **Stress Management among Corporate Managers: a Study of the Relationship among Management Styles, Management Levels and Coping Behaviors** by Kahler, Harold Snyder, Jr., PhD from Iowa State University, 1987, 132 pages
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- **Stress Management and Organisation Development: Effects of Transcendental Meditation on Psychological, Physiological, and Organisational Variables at the Worksite** by Broome, John Richard Napier, PhD from University of Cape Town (South Africa), 1995, 463 pages
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- **Stress Management and Yoga** by Collins, Lorrie Ann, EDD from Indiana University, 1982, 156 pages
  http://wwwlib.umi.com/dissertations/fullcit/8318834
- **Stress Management Education: Defining the Knowledge Base** by Raymer, Kathryn Sue, PhD from The University of Nebraska - Lincoln, 1991, 213 pages
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- **Stress Management for Children: a Comparative Study of Relaxation and Problem-solving Training** by McKay, Judith Ann, PhD from York University (Canada), 1987
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- **Stress Management for Post-Myocardial Infarction Patients** by Revel, Keith Ford, EDD from University of Houston, 1983, 157 pages
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- **Stress Management for the Pastor (Ministry)** by Schierling, James L., DMIN from Dallas Theological Seminary, 1986, 346 pages
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- **Stress Management Rituals for Daily Work Transitions of Mental Health Professionals** by Bodin, Aric V., EDD from University of Massachusetts, 1989, 214 pages
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- **Stress Management Techniques of Teachers in Relation to Amount of Stress** by Stephens, Susan Hyde, EDD from University of Florida, 1983, 151 pages
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- **Stress Management Training for Improved Performance in a United States Army Combat Unit** by Murphy, Bruce Thomas, EDD from Peabody College for Teachers of Vanderbilt University, 1997, 224 pages
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- **Stress Management Training in the Classroom to Enhance Academic and Social Functioning: a Qualitative Investigation** by Cahnmann, Suzanne M., PhD from The Union for Experimenting Colleges and Universities, 1987, 140 pages
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- **Stress Management Within a Manufacturing Environment** by Mazerall, Lorraine Margaret; Mn from The University of New Brunswick (Canada), 2002, 163 pages
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- **The Acquisition of Stress Management Skills by Student Teachers: an Outcome Study of Stress Inoculation and Anxiety Management.** by Mygdal, William Karl, EDD from Baylor University, 1978, 160 pages
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- **The Application of Short-term, Time-limited Stress Management Group Psychotherapy with Spousal Caregivers of Alzheimer's Patients: an Exploratory Study** by Sala-Disesa, Joanne Marie; PsyD from Alliant International University, San Diego, 2002, 280 pages
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- **The Development and Evaluation of Video Cassette Programming in the Area of Stress Management for Informal Education of College Students** by Lacivita, Robert Gerard, PhD from University of Pittsburgh, 1984, 173 pages
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- **The Development of a Stress Management Program for Teachers** by Croyle, Grant Waldo, PhD from University of Pittsburgh, 1982, 125 pages
  http://wwwlib.umi.com/dissertations/fullcit/8318199
- **The Effect of a Biofeedback and Stress Management Course on College Student Anxiety and Academic Performance (Stress Management)** by Turner, John Thomas, PhD from University of Northern Colorado, 1991, 92 pages
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- **The Effect of a Cognitive Reframing Stress Management Workshop on Thinking Styles Within an Organizational Setting (Bank Officers)** by Lynn, Martha A., PhD from University of Missouri - Kansas City, 1986, 99 pages
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- **The Effect of a Multidimensional Stress Management Intervention on Worker Anxiety, Perceived Occupational Stress, and Coping** by Wilson, Dannylu J.; DSN from The University of Alabama at Birmingham, 2002, 96 pages
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- **The Effect of a Personalized Multicomponent Smoking Cessation Intervention on Behavioral, Physiological, and Psychological Parameters of Cigarette Smoking (Stress Management)** by Mears, Gary Neill, EDD from Temple University, 1990, 190 pages
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- **The Effect of Biofeedback and Stress Management on Modifying Coronary-Prone Behavior** by Peffer, Kirk Evans, PhD from University of Colorado at Boulder, 1983, 281 pages
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- **The Effect of Process and Structured Content on Outcome in Stress Management Groups** by Whitney, Dale E., PhD from The University of Wisconsin - Madison, 1987, 347 pages
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Keeping Current

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CHAPTER 5. CLINICAL TRIALS AND STRESS MANAGEMENT

Overview

In this chapter, we will show you how to keep informed of the latest clinical trials concerning stress management.

Recent Trials on Stress Management

The following is a list of recent trials dedicated to stress management.[8] Further information on a trial is available at the Web site indicated.

- **Alternative Stress Management Approaches in HIV Disease**

  Condition(s): HIV Infections

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Center for Complementary and Alternative Medicine (NCCAM)

  Purpose - Excerpt: The overall purpose of the proposed study is to determine whether three short-term stress management interventions along with booster strategies will improve and sustain improvements in psychosocial functioning, quality of life, and somatic health among persons with varying stages of HIV disease. The 10-week group interventions are designed to reduce perceived stress and increase coping effectiveness and include cognitive-behavioral stress management focused on positively living (+LIVE), focused Tai Chi (TCHI) training, and spiritual growth groups (SPRT). Effects of the interventions will be evaluated immediately upon completion of the group training and at 6 months and 12 months following stress management training.

  Phase(s): Phase III

  Study Type: Interventional

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/show/NCT00029237

[8] These are listed at **www.ClinicalTrials.gov**.

- **Stress Management Training in Patients Undergoing Radiation Therapy for Cancer**

  Condition(s): Quality of Life; Anxiety Disorder; Depression; unspecified adult solid tumor, protocol specific

  Study Status: This study is currently recruiting patients.

  Sponsor(s): H. Lee Moffitt Cancer Center and Research Institute; National Cancer Institute (NCI)

  Purpose - Excerpt: RATIONALE: Stress management techniques such as muscle relaxation, guided imagery, and abdominal breathing may improve quality of life and decrease emotional distress in patients who are undergoing radiation therapy for cancer. PURPOSE: Randomized clinical trial to determine the effectiveness of stress management training in helping cancer patients cope with the emotional distress of radiation therapy.

  Study Type: Interventional

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/show/NCT00057733

Keeping Current on Clinical Trials

The U.S. National Institutes of Health, through the National Library of Medicine, has developed ClinicalTrials.gov to provide current information about clinical research across the broadest number of diseases and conditions.

The site was launched in February 2000 and currently contains approximately 5,700 clinical studies in over 59,000 locations worldwide, with most studies being conducted in the United States. ClinicalTrials.gov receives about 2 million hits per month and hosts approximately 5,400 visitors daily. To access this database, simply go to the Web site at **http://www.clinicaltrials.gov/** and search by "stress management" (or synonyms).

While ClinicalTrials.gov is the most comprehensive listing of NIH-supported clinical trials available, not all trials are in the database. The database is updated regularly, so clinical trials are continually being added. The following is a list of specialty databases affiliated with the National Institutes of Health that offer additional information on trials:

- For clinical studies at the Warren Grant Magnuson Clinical Center located in Bethesda, Maryland, visit their Web site: **http://clinicalstudies.info.nih.gov/**
- For clinical studies conducted at the Bayview Campus in Baltimore, Maryland, visit their Web site: **http://www.jhbmc.jhu.edu/studies/index.html**
- For cancer trials, visit the National Cancer Institute: **http://cancertrials.nci.nih.gov/**
- For eye-related trials, visit and search the Web page of the National Eye Institute: **http://www.nei.nih.gov/neitrials/index.htm**
- For heart, lung and blood trials, visit the Web page of the National Heart, Lung and Blood Institute: **http://www.nhlbi.nih.gov/studies/index.htm**
- For trials on aging, visit and search the Web site of the National Institute on Aging: **http://www.grc.nia.nih.gov/studies/index.htm**

- For rare diseases, visit and search the Web site sponsored by the Office of Rare Diseases: **http://ord.aspensys.com/asp/resources/rsch_trials.asp**
- For alcoholism, visit the National Institute on Alcohol Abuse and Alcoholism: **http://www.niaaa.nih.gov/intramural/Web_dicbr_hp/particip.htm**
- For trials on infectious, immune, and allergic diseases, visit the site of the National Institute of Allergy and Infectious Diseases: **http://www.niaid.nih.gov/clintrials/**
- For trials on arthritis, musculoskeletal and skin diseases, visit newly revised site of the National Institute of Arthritis and Musculoskeletal and Skin Diseases of the National Institutes of Health: **http://www.niams.nih.gov/hi/studies/index.htm**
- For hearing-related trials, visit the National Institute on Deafness and Other Communication Disorders: **http://www.nidcd.nih.gov/health/clinical/index.htm**
- For trials on diseases of the digestive system and kidneys, and diabetes, visit the National Institute of Diabetes and Digestive and Kidney Diseases: **http://www.niddk.nih.gov/patient/patient.htm**
- For drug abuse trials, visit and search the Web site sponsored by the National Institute on Drug Abuse: **http://www.nida.nih.gov/CTN/Index.htm**
- For trials on mental disorders, visit and search the Web site of the National Institute of Mental Health: **http://www.nimh.nih.gov/studies/index.cfm**
- For trials on neurological disorders and stroke, visit and search the Web site sponsored by the National Institute of Neurological Disorders and Stroke of the NIH: **http://www.ninds.nih.gov/funding/funding_opportunities.htm#Clinical_Trials**

CHAPTER 6. PATENTS ON STRESS MANAGEMENT

Overview

Patents can be physical innovations (e.g. chemicals, pharmaceuticals, medical equipment) or processes (e.g. treatments or diagnostic procedures). The United States Patent and Trademark Office defines a patent as a grant of a property right to the inventor, issued by the Patent and Trademark Office.[9] Patents, therefore, are intellectual property. For the United States, the term of a new patent is 20 years from the date when the patent application was filed. If the inventor wishes to receive economic benefits, it is likely that the invention will become commercially available within 20 years of the initial filing. It is important to understand, therefore, that an inventor's patent does not indicate that a product or service is or will be commercially available. The patent implies only that the inventor has "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States. While this relates to U.S. patents, similar rules govern foreign patents.

In this chapter, we show you how to locate information on patents and their inventors. If you find a patent that is particularly interesting to you, contact the inventor or the assignee for further information. **IMPORTANT NOTE:** When following the search strategy described below, you may discover non-medical patents that use the generic term "stress management" (or a synonym) in their titles. To accurately reflect the results that you might find while conducting research on stress management, we have not necessarily excluded non-medical patents in this bibliography.

Patents on Stress Management

By performing a patent search focusing on stress management, you can obtain information such as the title of the invention, the names of the inventor(s), the assignee(s) or the company that owns or controls the patent, a short abstract that summarizes the patent, and a few excerpts from the description of the patent. The abstract of a patent tends to be more technical in nature, while the description is often written for the public. Full patent descriptions contain much more information than is presented here (e.g. claims, references, figures, diagrams, etc.). We will tell you how to obtain this information later in the chapter.

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[9] Adapted from the United States Patent and Trademark Office: **http://www.uspto.gov/web/offices/pac/doc/general/whatis.htm**.

The following is an example of the type of information that you can expect to obtain from a patent search on stress management:

- **Behavior and stress management recognition apparatus**

  Inventor(s): Doi; Miwako (Kawasaki, JP), Suzuki; Takuji (Yokohama, JP)

  Assignee(s): Kabushiki Kaisha Toshiba (Kawasaki, JP)

  Patent Number: 6,607,484

  Date filed: May 30, 2001

  Abstract: A life support apparatus comprising a vital information sensor attached to a body to acquire vital information of a user, a behavior information sensor attached to the body to acquire behavior information of the user, a situation recognition device which recognizes a user's situation based on the behavior information acquired by the behavior information sensor and the vital information acquired by the vital information sensor to generate user's situation information, a data base which stores **stress management** information are prepared in advance, an information search device which searches the data base for **stress management** information corresponding to the user's situation information, and an information presentation device which presents the **stress management** information obtained by the information search device to the user.

  Excerpt(s): This application is based upon and claims the benefit of priority from the prior Japanese Patent Application No. 2000-163793, filed May 31, 2000, the entire contents of which are incorporated herein by reference. The present invention relates to a wearable type life support apparatus for measuring and determining various states of a user by using a wearable device and giving life support by an information service such as medical administration or personal navigation according to the user's situation, a life support method, and an advertisement providing method. As the society becomes complex, stress in daily life is said to be one factor of various problems of the modern society because stress adversely affects the health of people by, e.g., causing life-style related diseases such as heart diseases or mental diseases such as depression, and also triggers crimes.

  Web site: http://www.delphion.com/details?pn=US06607484__

- **Biomonitoring stress management method and device**

  Inventor(s): Cornellier; Vincent (1970 Connolly, Troy, MI 48084), Ziegler; Thomas K. (2058 Franklin, Berkley, MI 48072)

  Assignee(s): none reported

  Patent Number: 4,683,891

  Date filed: February 11, 1985

  Abstract: A method of managing and controlling stress in a person engaged in a goal oriented, cognitive task involves simultaneous measurement of a physical parameter of the person which varies in accordance with the level of the person's stress and the productivity of the person performing the task. A programmed computer calculates the stress point for the person beyond which productivity decreases and provides a visual display of the physical parameters and stress point on a cathode ray tube.

Excerpt(s): The present invention broadly relates to biomonitoring of human beings, and deals more particularly with a system for improving the performance of tasks by humans through management or reduction of stress. Many of the principles of the theory of human learning are based upon the fundamental relationship between the anxiety (sometimes referred to as "arousal") level of an individual and his or her test performance. It it relatively well established that as anxiety increases, test performance also increases in a linear manner until a "stress point" is reached following which there is a precipitous drop in performance. Anxiety manifests itself both psychologically and physically and the resulting stress induced by such anxiety may be referred to as "psychophysiological stress". A number of recent studies have been made involving measurement of anxiety as a function of elapsed time per test question, and self-report (questionnaires) data regarding anxiety level. These subjective measurements are then compared to the ratio of right and/or wrong answers, or alternatively, are compared to a measure of productivity on the test itself. As a result of the above discussed research, it has been established that an individual's productivity, in terms of performing goal oriented tasks, increases until a so-called stress point is reached. Beyond the stress point, productivity is negatively affected by anxiety. In the past, primarily behavioral techniques have been applied to reduce anxiety and thereby increase productivity.

Web site: http://www.delphion.com/details?pn=US04683891__

- **Cast convoluted piping flange**

  Inventor(s): Schlicht; Gunter (15 Briones View, Orinda, CA 94563)

  Assignee(s): none reported

  Patent Number: 5,413,389

  Date filed: February 28, 1994

  Abstract: A convoluted flange ring for a flange coupler in a piping system the flange ring having an annular bolting disk with an outer rim and an inner rim forming a U-shaped cross section, with the bolting disk having a transitional thickness for improved **stress management,** the thickness of the bolting disk increasing from the outer rim to the inner rim.

  Excerpt(s): This invention relates to a pipe flange and more particularly to a type of pipe flange known as a convoluted flange. Pipe flanges are used to interconnect pipe sections and fittings to other pipe sections and fittings of various types. A convoluted flange utilizes a design in which an annular flange member has a U-shaped cross section to provide strength to the flange, which is reduced in weight and material content with resultant cost savings. A convoluted flange is described in Shultz, U.S. Pat. No. 4,484,771, issued Nov. 27, 1984. In that reference, a convoluted flange rim is described that is fabricated from a disk blank in a press. The thickness of the annular convoluted flange rim is therefor uniform. The flange rim is slipped over the end of a pipe section and retained by a flared end face that provides the contact or sealing face for an opposed flange on a pipe section or fitting. The convoluted flange rim provides the bolting ring to the flange rim of the mating fitting. To prevent deformations in the flange rim of the lighter weight prior art convoluted flange from being transmitted as stresses to the pipe weldment, the outer periphery of the U-shaped rim contacts the abutting face of the opposing flange. This contact provides strength for mechanical support of the pipe connection without excessively stressing the pipe at or above the weld to a flared stub end fitting for seating the flange rim. This method of managing stresses in the prior art flange restricts the type of seals that can be used and requires great precision in selecting

a seal according to proper thickness. Conventional flanges are cast and ordinarily are relatively thick to prevent warpage on bolting. Because cast flanges are relatively inexpensive to produce, various systems have been devised to construct convoluted flanges with a cast metal flange rim. U.S. Pat. No. 4,458,924 of Schlicht, issued Jul. 10, 1984 entitled, "Bimetal Flange Connector" describes one such flange with a ductile iron convoluted flange rim. While the weight of the bimetal flange is reduced over conventional flanges, the process of fabricating the bimetal flange is more complicated and costly than conventional cast or forged flanges.

Web site: http://www.delphion.com/details?pn=US05413389__

- **Controlled stress thermal compensation for filters**

  Inventor(s): DeBoynton; William L. (Santa Ana, CA), Francis; Kurt R. (Yuma, AZ), Hellman; Scott M. (Aliso Viejo, CA), Uschitsky; Michael (Irvine, CA), Wigley; Peter G. (Corning, NY)

  Assignee(s): Corning Incorporated (Corning, NY)

  Patent Number: 6,304,383

  Date filed: September 17, 1999

  Abstract: A temperature compensated optical filter assembly including a plurality of thin films having temperature dependent indices of refraction which are deposited on a glass substrate so as to form a conventional interference filter thereon. The glass substrate is adhesively coupled to a metal holder such that the deposited thin film interference filter is interposed between the glass substrate and an adhesive layer distributed along a mounting surface of the holder. Thus, a first thermal mismatch stress is applied by the glass substrate onto an inner layer of the interference filter and a second mismatch stress is applied by the holder onto an outer layer of the interference filter, wherein the first and second mismatch stresses depend on the temperature of the filter assembly. The glass substrate, the adhesive, and the holder are preferably formed of materials having mechanical properties such that the first and second mismatch stresses compensate for the effects of the temperature dependent indices of refraction of the thin films so as to uniformly maintain the spectral performance of the filter assembly in response to a change in temperature. In one embodiment, an additional degree of freedom is obtained by electro/magneto-strictively prestressing the thin film stack during the formation thereof. In another embodiment, an active **stress management** system is utilized.

  Excerpt(s): The present invention relates to optical filters and, in particular, relates to temperature compensated optical filter assemblies having a thin film interference filter sub-assembly deposited therein. Optical filters are commonly used in science and industry to selectively attenuate optical signals according to frequency. For example, communication systems which transmit multiplexed optical signals having a plurality of frequency components along a single optical fiber often rely on optical filters to demultiplex the transmitted signal. In particular, an optical filter adapted to substantially attenuate or reflect all but a narrow frequency band, commonly known as a band pass filter, allows the corresponding frequency component to be isolated from the transmitted optical signal so that the information carried by the isolated frequency component can be subsequently processed in a non-interfering manner. A typical optical filter assembly comprises a glass substrate, an interference filter deposited on the glass substrate and a holder that supports the substrate. In particular, the glass substrate structurally supports the interference filter, which comprises a plurality of thin films

deposited in a layered manner over a surface of the glass substrate. Furthermore, the holder couples with another surface of the glass substrate, wherein the two surfaces are on opposite sides.

Web site: http://www.delphion.com/details?pn=US06304383__

- **Stress management of barrier metal for resolving CU line corrosion**

  Inventor(s): Liu; Chung-Shi (Hsin-Chu, TW), Shue; Shau-Lin (Hsinchu, TW), Yu; Chen-Hua (Hsin-Chu, TW)

  Assignee(s): Taiwan Semiconductor Manufacturing Company (Hsin-Chu, TW)

  Patent Number: 6,297,158

  Date filed: May 31, 2000

  Abstract: In the presently disclosed invention, a method is provided to avoid damage to a copper interconnect while subjecting the interconnect to chemical-mechanical polishing (CMP). First, a copper barrier layer is formed in a damascene structure. Then, prior to the deposition of copper metal into the damascene openings, a barrier layer is formed on the inside walls of the damascene structure. In a first embodiment, the copper barrier layer is deposited at high temperature. Then, it is cooled down in a prescribed manner. Subsequently, a copper seed layer is formed over the barrier, which is followed by the electro-chemical deposition (ECD) of copper, to form the copper damascene interconnect. Alternatively, in a second embodiment, the copper layer is formed at low temperature. Then it is annealed at a high temperature, followed by wafer cooling. Subsequently, copper seed layer is formed over the barrier layer. Next, ECD copper is formed in the damascene structure. Finally, the interconnect so formed by either of the embodiments is subjected to CMP. It is found that, through the disclosed method of treatment of the barrier layer, process stresses that are normally formed within the barrier layer are relieved, and hence no damage is incurred during the final steps of chemical-mechanical polishing.

  Excerpt(s): The present invention relates to the manufacture of integrated circuits in general, and in particular, to a method of controlling corrosion of copper lines through management of stresses in barrier metals formed to bar diffusion of copper. In general, corrosion of metal lines in semiconductor devices can be caused by many factors, including the transport of moisture and other contaminants and subsequent reaction of these with the metal lines. The moisture and contaminants may either exist in a semiconductor package material itself, or may arrive through cracks in the package. Or, there may be leaching of certain species such as phosphorus form phosphorous-doped SiO.sub.2 intermetal of passivation dielectric layers, followed by reaction of the phosphorus with absorbed moisture to form phosphoric acid, which then attacks aluminum, when aluminum lines are used. Or, residual process chlorine may react with moisture to form hydrochloric acid, which then attacks metal lines. In the case of copper lines, which are more and more coming into use in semiconductor devices, the corrosion problem is exacerbated by the tendency of the copper to diffuse into surrounding materials, such as polyimides, during high temperature processing of the polyimide. Copper then combines with oxygen in the polyimide, which in turn causes severe corrosion. The corrosion may result in loss of adhesion, delamination, voids, and ultimately a catastrophic failure of the metal line. A copper diffusion barrier is therefore often required. The use of copper (Cu) metal in interconnection metallurgy systems has long been considered as an alternative metallization material to aluminum (Al) and Al alloys due to its low resistivity and ability to reliably carry high current densities.

However, its use has presented many problems, such as the possibility of diffusion into the semiconductor substrate, the low adhesive strength of Cu to various insulating layers and the difficulties inherent in masking and etching the blanket Cu layer into intricate circuit structures. In particular, diffusivity of copper and the attendant corrosion problems can cause serious reliability problems in integrated circuits. In its simplest form, using damascene process for example, --which is described in more detail below--a trench or groove of desired shape, depth and length is formed in an insulator, and then filled with copper, to form a copper line, or interconnect. Unless the inside walls of the trench are lined properly, Cu will corrode with the attendant problems of peeling, delamination, and so on. To prevent these problems, it is common first to deposit a barrier metal inside the trench prior to depositing copper. However, the process stresses that are formed within the barrier can cause cracks and voids, which in turn harbor moisture, thereby promoting unwanted corrosion. It is disclosed later in the embodiments of the present invention a method of subjecting the barrier metal to high or low temperature deposition followed by a specific step of cooling down or thermal annealing, in order to manageably relieve the stresses for the purposes of resolving metal corrosions.

Web site: http://www.delphion.com/details?pn=US06297158__

- **Superconducting coil and method of stress management in a superconducting coil**

  Inventor(s): Diaczenko; Nick (College Station, TX), Gross; Dan A. (College Station, TX), McIntyre; Peter M. (College Station, TX), Shen; Weijun (Oak Ridge, TN)

  Assignee(s): The Texas A&M University System (College Station, TX)

  Patent Number: 6,002,316

  Date filed: May 13, 1998

  Abstract: A superconducting coil (12) having a plurality of superconducting layers (18) is provided. Each superconducting layer (18) may have at least one superconducting element (20) which produces an operational load. An outer support structure (24) may be disposed outwardly from the plurality of layers (18). A load transfer system (22) may be coupled between at least one of the superconducting elements (20) and the outer support structure (24). The load transfer system (22) may include a support matrix structure (30) operable to transfer the operational load from the superconducting element (20) directly to the outer support structure (24). A shear release layer (40) may be disposed, in part, between the superconducting element (20) and the support matrix structure (30) for relieving a shear stress between the superconducting element (20) and the support matrix structure (30). A compliant layer (42) may also be disposed, in part, between the superconducting element (20) and the support matrix structure (30) for relieving a compressive stress on the superconducting element (20).

  Excerpt(s): The present invention relates generally to superconductors, and more particularly to a superconducting coil and method of **stress management** in a superconducting coil. Superconductive materials have the unique material property of having zero electrical resistance. In other words, superconductive materials can conduct electricity with no loss of energy. However, superconductive materials only exhibit this unique material property when cooled below their respective critical temperature. The critical temperature for superconductive materials is in the supercold or cryogenic range of temperatures. Superconductive materials are particularly useful in applications that utilize a magnetic field. Such applications include, for example, electric motors and generators, transformers, magnetic energy storage devices, magnetic bearings, colliders,

and the like. The magnetic field that can be generated using superconductive materials is far greater than the magnetic field that can be produced using conventional conductive materials, such as copper. For example, some applications of magnetic resonance imaging (MRI) require a high magnetic field that can only be generated using superconductive materials. The medical field applications of magnetic resonance imaging has saved countless lives.

Web site: http://www.delphion.com/details?pn=US06002316__

Patent Applications on Stress Management

As of December 2000, U.S. patent applications are open to public viewing.[10] Applications are patent requests which have yet to be granted. (The process to achieve a patent can take several years.) The following patent applications have been filed since December 2000 relating to stress management:

- **Life support apparatus and method and method for providing advertisement information**

  Inventor(s): Doi, Miwako; (Kawasaki-shi, JP), Suzuki, Takuji; (Yokohama-shi, JP)

  Correspondence: Finnegan, Henderson, Farabow; Garrett & Dunner, L.L.P.; 1300 I Street, N.W.; Washington; DC; 20005-3315; US

  Patent Application Number: 20010049471

  Date filed: May 30, 2001

  Abstract: A life support apparatus comprising a vital information sensor attached to a body to acquire vital information of a user, a behavior information sensor attached to the body to acquire behavior information of the user, a situation recognition device which recognizes a user's situation based on the behavior information acquired by the behavior information sensor and the vital information acquired by the vital information sensor to generate user's situation information, a data base which stores **stress management** information are prepared in advance, an information search device which searches the data base for **stress management** information corresponding to the user's situation information, and an information presentation device which presents the **stress management** information obtained by the information search device to the user.

  Excerpt(s): This application is based upon and claims the benefit of priority from the prior Japanese Patent Application No. 2000-163793, filed May 31, 2000, the entire contents of which are incorporated herein by reference. The present invention relates to a wearable type life support apparatus for measuring and determining various states of a user by using a wearable device and giving life support by an information service such as medical administration or personal navigation according to the user's situation, a life support method, and an advertisement providing method. As the society becomes complex, stress in daily life is said to be one factor of various problems of the modern society because stress adversely affects the health of people by, e.g., causing life-style related diseases such as heart diseases or mental diseases such as depression, and also triggers crimes.

  Web site: http://appft1.uspto.gov/netahtml/PTO/search-bool.html

[10] This has been a common practice outside the United States prior to December 2000.

Keeping Current

In order to stay informed about patents and patent applications dealing with stress management, you can access the U.S. Patent Office archive via the Internet at the following Web address: **http://www.uspto.gov/patft/index.html**. You will see two broad options: (1) Issued Patent, and (2) Published Applications. To see a list of issued patents, perform the following steps: Under "Issued Patents," click "Quick Search." Then, type "stress management" (or synonyms) into the "Term 1" box. After clicking on the search button, scroll down to see the various patents which have been granted to date on stress management.

You can also use this procedure to view pending patent applications concerning stress management. Simply go back to **http://www.uspto.gov/patft/index.html**. Select "Quick Search" under "Published Applications." Then proceed with the steps listed above.

CHAPTER 7. BOOKS ON STRESS MANAGEMENT

Overview

This chapter provides bibliographic book references relating to stress management. In addition to online booksellers such as **www.amazon.com** and **www.bn.com**, excellent sources for book titles on stress management include the Combined Health Information Database and the National Library of Medicine. Your local medical library also may have these titles available for loan.

Book Summaries: Federal Agencies

The Combined Health Information Database collects various book abstracts from a variety of healthcare institutions and federal agencies. To access these summaries, go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. You will need to use the "Detailed Search" option. To find book summaries, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer. For the format option, select "Monograph/Book." Now type "stress management" (or synonyms) into the "For these words:" box. You should check back periodically with this database which is updated every three months. The following is a typical result when searching for books on stress management:

- **Time Out : A Stress Management Workshop for Professionals Working With AIDS**

  Contact: Gay Mens Health Crisis, 119 W 24th St Tisch Bldg, New York, NY, 10011-1995, (212) 367-1205, http://www.gmhc.org.

  Summary: These conference proceedings outline principles of stress management for caregivers and health professionals working with Acquired immunodeficiency syndrome (AIDS), caused by Human immunodeficiency virus (HIV). The first paper examines the process by which some people can lead very stressful lives, but apparently avoid any psychological or physical repercussions. The paper theorizes that "heartiness," characterized by a sense of commitment to one's work, a sense of control over one's life, and a sense of challenge, is an essential factor in a person's ability to cope with stress. The second paper describes the stress factors experienced by caregivers and health professionals, and recommends an integrated system of coping skills including relaxation techniques, biofeedback, meditation, and self-hypnosis. These techniques can

be learned and can lead to a sense of self-control, which will reduce the level of stress. The third paper examines issues related to bereavement, and death and dying. Three steps are important in coping with the loss of clients and friends: Understanding the grief process and the total experience of the dying person, listening, communicating, and accepting one's personal involvement in the dying process. The final paper deals with burnout of professionals working with AIDS. The inability to set limits on personal involvement and the unwillingness to be self-directed are two primary causes of burnout. The author suggests several steps for individuals to follow in deciding what is best for them.

Book Summaries: Online Booksellers

Commercial Internet-based booksellers, such as Amazon.com and Barnes&Noble.com, offer summaries which have been supplied by each title's publisher. Some summaries also include customer reviews. Your local bookseller may have access to in-house and commercial databases that index all published books (e.g. Books in Print®). **IMPORTANT NOTE:** Online booksellers typically produce search results for medical and non-medical books. When searching for "stress management" at online booksellers' Web sites, you may discover non-medical books that use the generic term "stress management" (or a synonym) in their titles. The following is indicative of the results you might find when searching for "stress management" (sorted alphabetically by title; follow the hyperlink to view more details at Amazon.com):

- **A Leader's Guide to Fighting Invisible Tigers: A Stress Management Guide for Teens** by Earl Hipp (Contributor), Connie C. Schmitz (1995); ISBN: 0915793814; http://www.amazon.com/exec/obidos/ASIN/0915793814/icongroupinterna
- **Alcoholism and Spirituality: Stress Management and Serenity During Recovery** by Charles L. Whitfield (1985); ISBN: 0933825129; http://www.amazon.com/exec/obidos/ASIN/0933825129/icongroupinterna
- **Comprehensive Stress Management with PowerWeb: Health and Human Performance** by Jerrold S. Greenberg; ISBN: 007248506X; http://www.amazon.com/exec/obidos/ASIN/007248506X/icongroupinterna
- **Cool Cats, Calm Kids: Relaxation and Stress Management for Young People** by Mary L. Williams, Dianne O'Quinn Burke (Illustrator) (1996); ISBN: 0915166941; http://www.amazon.com/exec/obidos/ASIN/0915166941/icongroupinterna
- **Fighting Invisible Tigers: A Stress Management Guide for Teens** by Earl Hipp, et al (1995); ISBN: 0915793806; http://www.amazon.com/exec/obidos/ASIN/0915793806/icongroupinterna
- **Freeze-Frame: One Minute Stress Management: A Scientifically Proven Technique for Clear Decision Making and Improved Health** by Doc Childre, Bruce Cryer; ISBN: 1879052423; http://www.amazon.com/exec/obidos/ASIN/1879052423/icongroupinterna
- **Human Elements Training for Emergency Services, Public Safety and Disaster Personnel: An Instructional Guide to Teaching Debriefing, Crisis Intervention and Stress Management Programs** by George S. Everly, et al (1994); ISBN: 188358101X; http://www.amazon.com/exec/obidos/ASIN/188358101X/icongroupinterna

- **More Hot Stuff to Help Kids Chill Out: The Anger and Stress Management Book** by Jerry, Ph.D. Wilde (2001); ISBN: 0965761037; http://www.amazon.com/exec/obidos/ASIN/0965761037/icongroupinterna
- **Preventive Stress Management in Organizations** by James Campbell Quick, et al (1997); ISBN: 1557984328; http://www.amazon.com/exec/obidos/ASIN/1557984328/icongroupinterna
- **Strategic Stress Management** by Valerie Sutherland, Cary L. Cooper; ISBN: 0333774876; http://www.amazon.com/exec/obidos/ASIN/0333774876/icongroupinterna
- **Stress Management Exercises on Tape [ABRIDGED]** by Wayne D. Ford Ph.D.; ISBN: 187987606X; http://www.amazon.com/exec/obidos/ASIN/187987606X/icongroupinterna
- **Stress Management for Adolescents: A Cognitive-Behavioral Program, Spiral Binding** by Diane De Anda (2002); ISBN: 087822436X; http://www.amazon.com/exec/obidos/ASIN/087822436X/icongroupinterna
- **Stress Management For Dummies®** by Allen Elkin (Author) (1999); ISBN: 0764551442; http://www.amazon.com/exec/obidos/ASIN/0764551442/icongroupinterna
- **Stress Management For Law Enforcement Officers** by Wayne Anderson (Author), et al; ISBN: 0131469452; http://www.amazon.com/exec/obidos/ASIN/0131469452/icongroupinterna
- **Stress Management for Lawyers: How to Increase Personal & Professional Satisfaction in the Law** by Amiram Elwork, Douglas B. Marlowe (Contributor); ISBN: 0964472716; http://www.amazon.com/exec/obidos/ASIN/0964472716/icongroupinterna
- **Stress Management for Professionals** by Roger Mellott (Reader); ISBN: 0943066484; http://www.amazon.com/exec/obidos/ASIN/0943066484/icongroupinterna
- **Stress Management Guide for Young People** by Bettie B. Youngs, Trish Nelson (Illustrator); ISBN: 0940221004; http://www.amazon.com/exec/obidos/ASIN/0940221004/icongroupinterna
- **Stress Management Made Simple: Effective Ways to Beat Stress for Better Health (Book with Two Audio CDs)** by Jay Winner (2003); ISBN: 0974511900; http://www.amazon.com/exec/obidos/ASIN/0974511900/icongroupinterna
- **Stress Management: A Comprehensive Guide to Wellness** by Edward A. Charlesworth (Author); ISBN: 0345327349; http://www.amazon.com/exec/obidos/ASIN/0345327349/icongroupinterna
- **Stress Management: A Comprehensive Handbook of Techniques and Strategies** by Jonathan C., PhD Smith (2002); ISBN: 0826149472; http://www.amazon.com/exec/obidos/ASIN/0826149472/icongroupinterna
- **Stressmap : Personal Diary Edition : The Ultimate Stress Management, Self-Assessment and Coping Guide Developed by Essi Systems** by Esther M. Orioli, et al (1991); ISBN: 1557040818; http://www.amazon.com/exec/obidos/ASIN/1557040818/icongroupinterna
- **The Everything Stress Management Book: Practical Ways to Relax, Be Healthy, and Maintain Your Sanity** by Eve Adamson (2002); ISBN: 1580625789; http://www.amazon.com/exec/obidos/ASIN/1580625789/icongroupinterna

- **The Stress Management Handbook** by Lori A. Leyden-Rubenstein, Stephen T. Sinatra; ISBN: 0879837942; http://www.amazon.com/exec/obidos/ASIN/0879837942/icongroupinterna
- **The Stress Management Sourcebook** by J. Barton Cunningham, Joe Lischerson; ISBN: 0737305088; http://www.amazon.com/exec/obidos/ASIN/0737305088/icongroupinterna
- **Trauma in the Lives of Children: Crisis and Stress Management Techniques for Teachers, Counselors, and Student Service Professionals** by Kendall Johnson; ISBN: 089793055X; http://www.amazon.com/exec/obidos/ASIN/089793055X/icongroupinterna
- **Yoga Secrets for Business Success: Transition Stress Management for the 21st Century** by Darshan Singh Khalsa (Author); ISBN: 1585745189; http://www.amazon.com/exec/obidos/ASIN/1585745189/icongroupinterna

The National Library of Medicine Book Index

The National Library of Medicine at the National Institutes of Health has a massive database of books published on healthcare and biomedicine. Go to the following Internet site, **http://locatorplus.gov/**, and then select "Search LOCATORplus." Once you are in the search area, simply type "stress management" (or synonyms) into the search box, and select "books only." From there, results can be sorted by publication date, author, or relevance. The following was recently catalogued by the National Library of Medicine:[11]

- **Acute traumatic stress management, ATSM: addressing emergent psychological needs during traumatic events** Author: Lerner, Mark D.; Year: 2001; Commack, N.Y.: American Academy of Experts in Traumatic; ISBN: 0967476224
- **Anxiety and stress management** Author: Powell, Trevor J.,; Year: 1990; London; New York: Routledge, 1990; ISBN: 041504457X http://www.amazon.com/exec/obidos/ASIN/041504457X/icongroupinterna
- **Clinical stress management guidelines for DA occupational health professionals.** Author: U.S. Army Environmental Hygiene Agency.; Year: 1992; Aberdeen Proving Ground, Md.: U.S. Army Environmental Hygiene Agency, [1992]
- **Critical incident stress management -CISM-: a new era and standard of care in crisis intervention** Author: Everly, George S.,; Year: 1997; Ellicot City, MD: Chevron Pub., c1997; ISBN: 1883581079 http://www.amazon.com/exec/obidos/ASIN/1883581079/icongroupinterna
- **Eating disorders in women and children: prevention, stress management and treatment** Author: Robert-McComb, Jacalyn J.; Year: 2001; Boca Raton: CRC Press, c2001; ISBN: 0849320275 http://www.amazon.com/exec/obidos/ASIN/0849320275/icongroupinterna

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[11] In addition to LOCATORPlus, in collaboration with authors and publishers, the National Center for Biotechnology Information (NCBI) is currently adapting biomedical books for the Web. The books may be accessed in two ways: (1) by searching directly using any search term or phrase (in the same way as the bibliographic database PubMed), or (2) by following the links to PubMed abstracts. Each PubMed abstract has a "Books" button that displays a facsimile of the abstract in which some phrases are hypertext links. These phrases are also found in the books available at NCBI. Click on hyperlinked results in the list of books in which the phrase is found. Currently, the majority of the links are between the books and PubMed. In the future, more links will be created between the books and other types of information, such as gene and protein sequences and macromolecular structures. See **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Books**.

- **Manual of stress management** Author: Margolis, Clorinda G.; Year: 1981; Philadelphia, Pa.: Franklin Institute Press, c1981; ISBN: 0891680365
  http://www.amazon.com/exec/obidos/ASIN/0891680365/icongroupinterna
- **People and change: an introduction to counseling and stress management** Author: Flanagan, Catherine M.; Year: 1990; Hillsdale, N.J.: L. Erlbaum Associates, 1990; ISBN: 0805804501
  http://www.amazon.com/exec/obidos/ASIN/0805804501/icongroupinterna
- **Principles and practice of stress management** Author: Woolfolk, Robert L.; Year: 1993; New York: Guilford Press, c1984; ISBN: 089862617X
  http://www.amazon.com/exec/obidos/ASIN/089862617X/icongroupinterna
- **Relaxation for concentration, stress management, and pain control using the Fleming method** Author: Horrigan, Carol.; Year: 1997; Oxford; Boston: Butterworth-Heinemann, 1997; ISBN: 0750624396
  http://www.amazon.com/exec/obidos/ASIN/0750624396/icongroupinterna
- **Stress and stress management: research and applications** Author: Hamberger, L. Kevin.; Year: 1984; New York: Springer Pub. Co., c1984; ISBN: 0826139507
  http://www.amazon.com/exec/obidos/ASIN/0826139507/icongroupinterna
- **Stress and tension control 3: stress management** Author: McGuigan, F. J. (Frank J.),; Year: 1989; New York: Plenum Press, c1989; ISBN: 0306433273
  http://www.amazon.com/exec/obidos/ASIN/0306433273/icongroupinterna
- **Stress management** Author: Apgar, Kathryn.; Year: 1987; New York, N.Y.: Family Service Association of America, c1982; ISBN: 0873041895
  http://www.amazon.com/exec/obidos/ASIN/0873041895/icongroupinterna
- **Stress management: a comprehensive guide to wellness** Author: Charlesworth, Edward A.,; Year: 1982; Houston, Tex.: Biobehavioral Press, c1982; ISBN: 093817603X
  http://www.amazon.com/exec/obidos/ASIN/093817603X/icongroupinterna
- **Stress management: an integrated approach to therapy** Author: Cotton, Dorothy H. G.; Year: 1990; New York: Brunner/Mazel, c1990; ISBN: 0876305575
  http://www.amazon.com/exec/obidos/ASIN/0876305575/icongroupinterna
- **Stress management: for professionals in health care** Author: Leebov, Wendy.; Year: 1995; Beaverton, Or.: Mosby-Great Performance, c1995; ISBN: 0815153147
  http://www.amazon.com/exec/obidos/ASIN/0815153147/icongroupinterna
- **Stress management for chronic disease** Author: Russell, Michael L.; Year: 1988; New York: Pergamon Press, 1988; ISBN: 0080328075
  http://www.amazon.com/exec/obidos/ASIN/0080328075/icongroupinterna
- **Stress management for health care professionals** Author: Appelbaum, Steven H.; Year: 1981; Rockville, Md.: Aspen Systems Corp., 1981; ISBN: 0894433326
  http://www.amazon.com/exec/obidos/ASIN/0894433326/icongroupinterna
- **Stress management for primary health care professionals** Author: Rout, Usha.; Year: 2002; New York: Kluwer Academic/Plenum Publishers, c2002; ISBN: 0306472406
  http://www.amazon.com/exec/obidos/ASIN/0306472406/icongroupinterna
- **Stress management for the dental team** Author: George, James M.; Year: 1986; Philadelphia: Lea; Febiger, c1986; ISBN: 0812110277
  http://www.amazon.com/exec/obidos/ASIN/0812110277/icongroupinterna
- **Stress management for the healthy type A: theory and practice** Author: Roskies, Ethel.; Year: 1987; New York: Guilford Press, c1987; ISBN: 0898626897
  http://www.amazon.com/exec/obidos/ASIN/0898626897/icongroupinterna

- **Stress management for wellness** Author: Schafer, Walter E.,; Year: 1987; New York: Holt, Rinehart and Winston, c1987; ISBN: 0030114748
  http://www.amazon.com/exec/obidos/ASIN/0030114748/icongroupinterna
- **Stress management in the workplace** Author: Jaffe, Dennis T.; Year: 1986; Washington, D.C.: Washington Business Group on Health, [1986]
- **Stress management in work settings** Author: Murphy, Lawrence R.; Year: 1989; New York: Praeger, 1989; ISBN: 0275932710
  http://www.amazon.com/exec/obidos/ASIN/0275932710/icongroupinterna
- **Stress management through art: proceedings of the 1988 International Congress of Psychopathology of Expression, Boston, Massachusetts** Author: Jakab, Irene,; Year: 1990; Brookline, MA, USA (74 Lawton St., Brookline 02146): American Society of Psychopathology of Expression, c1990
- **Stress management training: a group leader's guide** Author: Norvell, Nancy.; Year: 1990; Sarasota, Fla.: Professional Resource Exchange, c1990; ISBN: 0943158338
  http://www.amazon.com/exec/obidos/ASIN/0943158338/icongroupinterna
- **Stress management, a manual for nurses** Author: Lachman, Vicki D.; Year: 1983; New York: Grune; Stratton,; London: Distributed in the U.K. by Academic Press, c1983; ISBN: 0808915541
  http://www.amazon.com/exec/obidos/ASIN/0808915541/icongroupinterna
- **Stress-related disorders sourcebook: basic consumer health information about stress and stress-related disorders: including stress origins and signals, environmental stress at work and home, mental and emotional stress associated with depression, post-traumantic stress disorder, panic disorder, suicide, and the physical effects of stress and the cardiovascular, immune, and nervous systems: along with stress management techniques, a glossary, and a listing of additional resources** Author: Shannon, Joyce Brennfleck.; Year: 2002; Detroit, MI: Omnigraphics, 2002; ISBN: 0780805607
  http://www.amazon.com/exec/obidos/ASIN/0780805607/icongroupinterna

Chapters on Stress Management

In order to find chapters that specifically relate to stress management, an excellent source of abstracts is the Combined Health Information Database. You will need to limit your search to book chapters and stress management using the "Detailed Search" option. Go to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find book chapters, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Book Chapter." Type "stress management" (or synonyms) into the "For these words:" box. The following is a typical result when searching for book chapters on stress management:

- **Psychological Aspects of Voice Disorders**

  Source: in Sataloff, R.T., ed. Professional Voice: The Science and Art of Clinical Care. 2nd ed. San Diego, CA: Singular Publishing Group, Inc. 1997. p. 305-317.

  Contact: Available from Singular Publishing Group, Inc. 401 West 'A' Street, Suite 325, San Diego, CA 92101-7904. (800) 521-8545 or (619) 238-6777. Fax (800) 774-8398 or (619) 238-6789. E-mail: singpub@singpub.com. Website: www.singpub.com. PRICE: $325.00 plus shipping and handling. ISBN: 1565937287.

Summary: Because patients seeking medical care for voice disorders come from the general population, a normal distribution of comorbid psychopathology can be expected in a laryngology practice. This chapter on the psychological aspects of voice disorders is from a book on the clinical care of the professional voice. Psychological factors can be causally related to a voice disorder or to the consequences of vocal dysfunction. The authors note that the essential role of the voice in communication of the 'self' creates special potential for psychological impact. The authors focus particularly on the recognition of psychological problems that may delay recovery following vocal injury or surgery. Topics include the phases of vocal injury (problem recognition, diagnosis, treatment, acceptance), psychogenic voice disorders (organic and nonorganic entities), general psychopathologic presentations, eating disorders and substance abuse, neurogenic dysphonia, **stress management,** performance anxiety, the surgical experience, reactive responses, and the role of the psychological professional. 47 references.

- **Survival Skills for Self-Managing Your Digestive Condition**

  Source: in Bonci, L. American Dietetic Association Guide to Better Digestion. Hoboken, NJ: John Wiley and Sons, Inc. 2003. p. 13-26.

  Contact: Available from John Wiley and Sons, Inc. Customer Care Department, One Wiley Drive, Somerset, NJ 08875. (800) 762-2974 or (317) 572-3993. Fax (317) 572-4002. Website: www.wiley.com. PRICE: $14.95 plus shipping and handling. ISBN: 0471442232.

  Summary: Coping with a gastrointestinal disorder, whether it is irritable bowel syndrome (IBS), gas (flatulence), constipation, heartburn, or another condition, can be embarrassing and debilitating. While medical treatments and prescriptions can offer relief, one of the most important ways patients can help themselves is in their dietary choices. This chapter on survival skills is from a book that describes how patients can self-manage their digestive disorders through dietary choices. In this chapter, the author outlines four good 'gut survival skills' : appropriate food choices, eating behaviors, lifestyle activities, and **stress management.** The author reviews the food guide pyramid, coping with unusual situations, how to help children to make good food choices, and the role of exercise. The author focuses on the importance of making one's own health situation a high priority in the demands of daily life.

- **Audiological Rehabilitation Intervention Services for Adults with Acquired Hearing Impairment**

  Source: in Valente, M.; Hosford-Dunn, H.; Roeser, R.J., eds. Audiology: Treatment. New York, NY: Thieme. 2000. p. 547-579.

  Contact: Available from Thieme. 333 Seventh Avenue, New York, NY 10001. (800) 782-3488. Fax (212) 947-0108. E-mail: custserv@thieme.com. PRICE: $69.00 plus shipping and handling. ISBN: 0865778590.

  Summary: Many adults and elderly persons with acquired hearing loss could benefit from the expertise of rehabilitation audiologists to help facilitate the process of adaptation to their hearing loss and any assistive devices they may use. This chapter on audiological rehabilitation intervention services for adults with acquired hearing impairment is from a textbook that provides a comprehensive overview of the numerous treatment options available to help patients relieve the clinical symptoms seen in an audiology practice. Topics include an overview of audiological rehabilitation, including the origins and development of audiological rehabilitation services, and services related to amplification and other technological devices; speech perception

training, including analytic versus synthetic speech perception training, sensory modalities, group versus individual speech perception training, and telephone training; communication management training, including communication strategies, conversational fluency, assertiveness training, **stress management,** personal adjustment, individual versus group intervention programs, and communication partners; and the foundations of audiological rehabilitation, including definitions, models of rehabilitative audiology, the WHO classification system, the influence of a person's predicament and the environment in defining situations of handicap, rehabilitation as a process, and rehabilitation as a solution centered intervention process. The authors offer a case presentation that includes background information, a description of the situation of handicap, the negotiated objective and structure of the intervention program, the intervention program itself, and outcome, impacts, and consequences of the intervention program. The chapter includes an outline of the topic covered, a list of references, a summary outline of the related preferred practice guidelines, and various 'pearls and pitfalls' offering practical advice to the reader. 3 figures. 16 tables. 142 references.

- **Are There Psychological or Audiological Parameters Determining Tinnitus Impact?**

  Source: in Hazell, J., ed. Proceedings of the Sixth International Tinnitus Seminar. London, England: Tinnitus and Hyperacusis Centre. 1999. p. 446-451.

  Contact: Available from Tinnitus and Hyperacusis Centre. 32 Devonshire Place, London, W1N 1PE, United Kingdom. Fax 44 + (0) 207 486 2218. E-mail: thc@dr.com. Website: www.tinnitus.org. PRICE: Contact publisher for price. ISBN: 0953695700. Also available on CD-ROM.

  Summary: This article reports on a study undertaken to determine how patients with a high and low tinnitus impact differ with regard to particular psychological parameters. The article is from a lengthy document that reprints the proceedings of the Sixth International Tinnitus Seminar, held in Cambridge, United Kingdom, in September 1999 and hosted by the British Society of Audiology. In this study, 113 patients underwent an extensive audiological as well as psychological examination. Audiological examination consisted of audiogram and tympanogram, masking curves according to Feldmann, minimum masking level (MML) with white noise, loudness matching, and pitch matching. The psychological examination comprised a questionnaire testing **stress management** and coping strategies, the Beck Depression Inventory, questionnaires testing locus of control, and a questionnaire testing tinnitus impact. In order to work out the differences between patients with high and low distress caused by the tinnitus, the patients were divided into a group with high and a group with low tinnitus impact. Marked statistically significant differences were observed with respect to illness coping, stress coping, as well as locus of control and self efficacy. There was also a difference in the degree of depression with patients with high impact patients showing a higher degree of depression. No differences were noted between the two groups regarding psychoacoustical measurements, with the exception of minimum masking level using white noise, which was significantly higher in the high impact group. 1 table. 23 references.

- **Behavioral Pain Management**

  Source: in Bayless, T.M. and Hanauer, S.B. Advanced Therapy of Inflammatory Bowel Disease. Hamilton, Ontario: B.C. Decker Inc. 2001. p. 587-591.

  Contact: Available from B.C. Decker Inc. 20 Hughson Street South, P.O. Box 620, L.C.D. 1 Hamilton, Ontario L8N 3K7. (905) 522-7017 or (800) 568-7281. Fax (905) 522-7839.

Email: info@bcdecker.com. Website: www.bcdecker.com. PRICE: $129.00 plus shipping and handling. ISBN: 1550091220.

Summary: This chapter on behavioral pain management is from the second edition of a book devoted to the details of medical, surgical, and supportive management of patients with Crohn's disease (CD) and ulcerative colitis (UC), together known as inflammatory bowel disease (IBD). In addition to symptoms of diarrhea, rectal bleeding, and weight loss, abdominal pain is described by more than 75 percent of patients with inflammatory bowel disease. Although psychological characteristics have not been shown to cause inflammatory bowel disease, patients having this disorder have been found to be more hypochondriacal, depressed, anxious, obsessive-compulsive, and nonassertive than normal control populations in many studies, even though there are some exceptions. In addition, patients with IBD have been reported by some investigators as being similar to patients diagnosed with psychosomatic disorders such as spastic colitis on measures of anxiety, neurotic tendencies, or affective disorders. These findings have led to the conclusion that the interaction between emotional stress and psychological characteristics can affect the onset or exacerbation of symptoms associated with IBD. As a consequence, behaviorally based treatments useful in the management of chronic pain arising from other disorders can be applied in the treatment of pain associated with IBD. The author offers guidelines for recognizing patients with a chronic pain syndrome, summarizes the important facets of the physician-patient relationship, and outlines specific behavioral pain management for IBD, including **stress management,** somatic anxiety, biofeedback, relaxation training, behavior therapy, and family therapy; the use of narcotic analgesic (pain killing) medications is also mentioned. The chapter concludes with a case report that illustrates the successful treatment of chronic pain in a patient with IBD. 13 references.

- **Day One: Condemned to. Taking Care of Yourself**

  Source: in Green, W.F. First Year: Hepatitis B. New York, NY: Marlowe and Company. 2002. p. 1-12.

  Contact: Available from Marlowe and Company. 161 William Street, 16th Floor, New York, NY 10038. PRICE: $15.95 plus shipping and handling. ISBN: 1569245339.

  Summary: Viral hepatitis B (liver infection) is one of the most preventable medical conditions due to the availability of a hepatitis B vaccine, yet an estimated 100,000 people in the United States are infected each year, and 6,000 die from complications. When the author of this book was diagnosed in 1993, he decided to be proactive in his quest to understand and manage his illness. In this introductory chapter, the author summarizes the steps of everything they need to do and learn each day of their first week after diagnosis, each subsequent week of the first month, and the following eleven months of the first year. In nontechnical language, the author introduces the concepts of **stress management,** depression, self care, and coping with chronic disease. The second section of the chapter answers common questions that patients may have on the first day they learn of their diagnosis. Topics include the vaccine for hepatitis B, transmission, prognosis, and alcohol consumption and the need for complete abstinence. The author summarizes the chapter in one sentence, encouraging patients to choose how their lives will be with HBV and to proactively manage their energy, diet, treatment, and feelings.

CHAPTER 8. MULTIMEDIA ON STRESS MANAGEMENT

Overview

In this chapter, we show you how to keep current on multimedia sources of information on stress management. We start with sources that have been summarized by federal agencies, and then show you how to find bibliographic information catalogued by the National Library of Medicine.

Video Recordings

An excellent source of multimedia information on stress management is the Combined Health Information Database. You will need to limit your search to "Videorecording" and "stress management" using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find video productions, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Videorecording (videotape, videocassette, etc.)." Type "stress management" (or synonyms) into the "For these words:" box. The following is a typical result when searching for video recordings on stress management:

- **Stress Management For Persons With Diabetes**

  Source: Los Angeles, CA: National Health Video, Inc. 1996. (videorecording).

  Contact: Available from National Health Video. 12021 Wilshire Boulevard, Suite 550, Los Angeles, CA 90025. (800) 543-6803. Fax (310) 477-8198. PRICE: $89.00.

  Summary: This video, narrated by Amy Barr, RD, is designed to teach people with diabetes how to manage stress. The narrator points out that while people cannot avoid stress, they can control their reactions to it. According to the video, stress has two effects on people with diabetes. It increases the release of adrenaline, extra cortisone, and stored glucose, and suppresses insulin release; in turn, diabetes management efforts can be undermined by additional eating. In addition, stress may interfere with self care by distracting people from following their meal plan, self monitoring blood glucose levels, and exercising. Topics include recognizing stress, planning, eliminating mistaken ideas, relaxation techniques, exercise, and seeking professional help. The narrator notes that

asking for help is a sign of health rather than weakness, and that viewers should consult health care professionals for further stress management ideas. An accompanying teaching guide includes learning objectives and activities, a quiz, and the video script. (AA-M).

Audio Recordings

The Combined Health Information Database contains abstracts on audio productions. To search CHID, go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find audio productions, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Sound Recordings." Type "stress management" (or synonyms) into the "For these words:" box. The following is a typical result when searching for sound recordings on stress management:

- **Self - Care for Providers**

  Contact: Health Impact, PO Box 9443, Seattle, WA, 98109-9443, (206) 284-3865, http://www.healthimpact.org/.

  Summary: This sound recording deals with the stress experienced by caregivers of persons with Human immunodeficiency virus (HIV) infection or Acquired immunodeficiency syndrome (AIDS). **Stress management** is vitally important so that caregivers do not experience burnout. Causes and symptoms of stress are listed, along with recommendations for overcoming these problems. Review questions and references are listed in the booklet that accompanies this recording.

Bibliography: Multimedia on Stress Management

The National Library of Medicine is a rich source of information on healthcare-related multimedia productions including slides, computer software, and databases. To access the multimedia database, go to the following Web site: **http://locatorplus.gov/**. Select "Search LOCATORplus." Once in the search area, simply type in stress management (or synonyms). Then, in the option box provided below the search box, select "Audiovisuals and Computer Files." From there, you can choose to sort results by publication date, author, or relevance. The following multimedia has been indexed on stress management:

- **Alzheimer's disease [videorecording]: families, stress management and ethics** Source: HSTN; Year: 2003; Format: Videorecording; Carrollton, TX: Primedia Workplace Learning, [2003]
- **Hypnotic stress management techniques [videorecording]** Source: [presented by] Gerald F. Kein; Year: 1990; Format: Videorecording; DeLand, Fla.: Omni Hypnosis Training Center, c1990
- **Lifestyle modification and stress management objectives [videorecording]** Source: Laura Patterson Productions; a HSN, Hospital Satellite Network presentation; Year: 1986; Format: Videorecording; [Los Angeles, Calif.]: The Network, c1986
- **Stress management [slide]** Source: [produced & distributed by Training Resources Division, Nuclear Support Services, Inc.]; Year: 1981; Format: Slide; Columbia, Md.: NSS Inc./D.S., c1981

- **Stress management [sound recording]: an executive guide series program** Source: [produced by Teach'em, Inc.]; Year: 1986; Format: Sound recording; Chicago, Ill.: Foundation of the American College of Healthcare Executives, [1986]
- **Stress management for healthcare personnel [videorecording]** Source: produced and copyrighted by Fairview Audiovisuals, a division of Fairview Enterprises, Inc; Year: 1988; Format: Videorecording; Cleveland, OH: Fairview Audio-Visuals, c1988
- **Stress management for healthcare personnel [videorecording]** Source: produced and copyrighted by Fairview Audiovisuals; Year: 1988; Format: Videorecording; [United States]: Fairview Audio-Visuals, c1988
- **Stress management for nurses [videorecording]** Source: AJN, American Journal of Nursing Company; Year: 1993; Format: Videorecording; La Crosse, Wis.: Healthcare Video Corporation, [1993]
- **Time and stress management [videorecording]** Source: [presented by] Creative Nursing Management, Inc.; Kundschier/Manthey Video; Year: 1992; Format: Videorecording; Minneapolis, MN: Creative Nursing
- **Winning the race [videorecording]: stress management for healthcare workers** Source: produced by Coastal Video Communications Corp; Year: 1991; Format: Videorecording; [Virginia Beach, VA]: Coastal Video Communications Corp., c1991

CHAPTER 9. PERIODICALS AND NEWS ON STRESS MANAGEMENT

Overview

In this chapter, we suggest a number of news sources and present various periodicals that cover stress management.

News Services and Press Releases

One of the simplest ways of tracking press releases on stress management is to search the news wires. In the following sample of sources, we will briefly describe how to access each service. These services only post recent news intended for public viewing.

PR Newswire

To access the PR Newswire archive, simply go to **http://www.prnewswire.com/**. Select your country. Type "stress management" (or synonyms) into the search box. You will automatically receive information on relevant news releases posted within the last 30 days. The search results are shown by order of relevance.

Reuters Health

The Reuters' Medical News and Health eLine databases can be very useful in exploring news archives relating to stress management. While some of the listed articles are free to view, others are available for purchase for a nominal fee. To access this archive, go to **http://www.reutershealth.com/en/index.html** and search by "stress management" (or synonyms). The following was recently listed in this archive for stress management:

- **Internet addiction may be form of stress management**
  Source: Reuters Health eLine
  Date: August 26, 2002

- **Group-based stress management training benefits type 2 diabetics**
  Source: Reuters Medical News
  Date: January 21, 2002
- **Stress management may help heart disease patients**
  Source: Reuters Health eLine
  Date: January 15, 2002
- **Vegetarian diet, stress management slows PSA rise in prostate cancer patients**
  Source: Reuters Medical News
  Date: January 01, 2002
- **Chronic tension-type headache may respond to antidepressants, stress management**
  Source: Reuters Industry Breifing
  Date: May 02, 2001
- **Individualized stress management training significantly reduces hypertension**
  Source: Reuters Medical News
  Date: April 24, 2001
- **Stress management reduces job strain**
  Source: Reuters Health eLine
  Date: April 21, 1999
- **Stress Management, Exercise Training Of Benefit In Myocardial Ischemia Patients**
  Source: Reuters Medical News
  Date: October 30, 1997
- **Stress Management Decreases Risk Of Cardiac Events In CAD Patients With Ischemia**
  Source: Reuters Medical News
  Date: October 20, 1997

The NIH

Within MEDLINEplus, the NIH has made an agreement with the New York Times Syndicate, the AP News Service, and Reuters to deliver news that can be browsed by the public. Search news releases at **http://www.nlm.nih.gov/medlineplus/alphanews_a.html**. MEDLINEplus allows you to browse across an alphabetical index. Or you can search by date at the following Web page: **http://www.nlm.nih.gov/medlineplus/newsbydate.html**. Often, news items are indexed by MEDLINEplus within its search engine.

Business Wire

Business Wire is similar to PR Newswire. To access this archive, simply go to **http://www.businesswire.com/**. You can scan the news by industry category or company name.

Market Wire

Market Wire is more focused on technology than the other wires. To browse the latest press releases by topic, such as alternative medicine, biotechnology, fitness, healthcare, legal, nutrition, and pharmaceuticals, access Market Wire's Medical/Health channel at

http://www.marketwire.com/mw/release_index?channel=MedicalHealth. Or simply go to Market Wire's home page at **http://www.marketwire.com/mw/home**, type "stress management" (or synonyms) into the search box, and click on "Search News." As this service is technology oriented, you may wish to use it when searching for press releases covering diagnostic procedures or tests.

Search Engines

Medical news is also available in the news sections of commercial Internet search engines. See the health news page at Yahoo (**http://dir.yahoo.com/Health/News_and_Media/**), or you can use this Web site's general news search page at **http://news.yahoo.com/**. Type in "stress management" (or synonyms). If you know the name of a company that is relevant to stress management, you can go to any stock trading Web site (such as **http://www.etrade.com/**) and search for the company name there. News items across various news sources are reported on indicated hyperlinks. Google offers a similar service at **http://news.google.com/**.

BBC

Covering news from a more European perspective, the British Broadcasting Corporation (BBC) allows the public free access to their news archive located at **http://www.bbc.co.uk/**. Search by "stress management" (or synonyms).

Newsletter Articles

Use the Combined Health Information Database, and limit your search criteria to "newsletter articles." Again, you will need to use the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. Go to the bottom of the search page where "You may refine your search by." Select the dates and language that you prefer. For the format option, select "Newsletter Article." Type "stress management" (or synonyms) into the "For these words:" box. You should check back periodically with this database as it is updated every three months. The following is a typical result when searching for newsletter articles on stress management:

- **Adult-Child Caregivers: Caught in the 'Sandwich' of Competing Demands**

  Source: ADRDA Newsletter. 7(1): 8, 10. Spring 1987.

  Contact: Alzheimer's Association. 919 North Michigan Avenue, Suite 1000, Chicago, IL 60611-1676. (800) 272-3900; (312) 335-8700; (312) 335-8882 (TDD); FAX (312) 335-1110. PRICE: Single copy free.

  Summary: This article gives the epidemiology of adult-child caregivers and discusses their risk of experiencing several kinds of problems. These include financial difficulties, lack of time to participate in social and recreational activities, physical health difficulties, and mental health problems. The author describes the special circumstances of daughter-in-law caregivers and spouses and offers suggestions for **stress management.**

- **Inflammatory Bowel Diseases: Misery Needn't be the Norm**

  Source: Mayo Clinic Health Letter. 19(10): 1-3. October 2001.

  Contact: Available from Mayo Clinic Health Letter. Subscription Services, P.O. Box 53889, Boulder, CO 80322-3889. (800) 333-9037 or (303) 604-1465.

  Summary: This health education newsletter article familiarizes readers with inflammatory bowel disease (IBD), which includes Crohn's disease and ulcerative colitis. The author describes the two types of IBD, and their incidence, symptoms, diagnosis, drug therapy, lifestyle treatments, and surgical options. The signs and symptoms of Crohn's disease and ulcerative colitis may develop gradually or suddenly and can be similar: chronic diarrhea, vomiting, abdominal cramping, blood in the stool, weight loss and fatigue, and fever in severe cases. In addition, people with Crohn's disease are more likely to develop open sores (ulcers) in their digestive tract. Blood tests and diagnostic imaging confirm the diagnoses of inflammatory bowel disease. Drug therapy is a key component of treating IBD. Although drugs do not offer a cure for IBD, they often help control the condition. Once the right drug or combination of drugs is determined, symptoms can often be reduced. Drugs can include anti-inflammatory drugs, immune modulators, and antibiotics. Lifestyle treatments include dietary management, adequate fluid intake, **stress management** (including the use of support groups), and avoidance of nonsteroidal anti-inflammatory drugs (NSAIDs). At least 70 percent of those patients with Crohn's disease will need at least one or more surgeries. One side bar reminds readers of the risk of colon cancer in people with IBD. 1 figure.

Academic Periodicals covering Stress Management

Numerous periodicals are currently indexed within the National Library of Medicine's PubMed database that are known to publish articles relating to stress management. In addition to these sources, you can search for articles covering stress management that have been published by any of the periodicals listed in previous chapters. To find the latest studies published, go to **http://www.ncbi.nlm.nih.gov/pubmed**, type the name of the periodical into the search box, and click "Go."

If you want complete details about the historical contents of a journal, you can also visit the following Web site: **http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi**. Here, type in the name of the journal or its abbreviation, and you will receive an index of published articles. At **http://locatorplus.gov/**, you can retrieve more indexing information on medical periodicals (e.g. the name of the publisher). Select the button "Search LOCATORplus." Then type in the name of the journal and select the advanced search option "Journal Title Search."

APPENDICES

APPENDIX A. PHYSICIAN RESOURCES

Overview

In this chapter, we focus on databases and Internet-based guidelines and information resources created or written for a professional audience.

NIH Guidelines

Commonly referred to as "clinical" or "professional" guidelines, the National Institutes of Health publish physician guidelines for the most common diseases. Publications are available at the following by relevant Institute[12]:

- Office of the Director (OD); guidelines consolidated across agencies available at **http://www.nih.gov/health/consumer/conkey.htm**
- National Institute of General Medical Sciences (NIGMS); fact sheets available at **http://www.nigms.nih.gov/news/facts/**
- National Library of Medicine (NLM); extensive encyclopedia (A.D.A.M., Inc.) with guidelines: **http://www.nlm.nih.gov/medlineplus/healthtopics.html**
- National Cancer Institute (NCI); guidelines available at **http://www.cancer.gov/cancerinfo/list.aspx?viewid=5f35036e-5497-4d86-8c2c-714a9f7c8d25**
- National Eye Institute (NEI); guidelines available at **http://www.nei.nih.gov/order/index.htm**
- National Heart, Lung, and Blood Institute (NHLBI); guidelines available at **http://www.nhlbi.nih.gov/guidelines/index.htm**
- National Human Genome Research Institute (NHGRI); research available at **http://www.genome.gov/page.cfm?pageID=10000375**
- National Institute on Aging (NIA); guidelines available at **http://www.nia.nih.gov/health/**

[12] These publications are typically written by one or more of the various NIH Institutes.

- National Institute on Alcohol Abuse and Alcoholism (NIAAA); guidelines available at **http://www.niaaa.nih.gov/publications/publications.htm**
- National Institute of Allergy and Infectious Diseases (NIAID); guidelines available at **http://www.niaid.nih.gov/publications/**
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS); fact sheets and guidelines available at **http://www.niams.nih.gov/hi/index.htm**
- National Institute of Child Health and Human Development (NICHD); guidelines available at **http://www.nichd.nih.gov/publications/pubskey.cfm**
- National Institute on Deafness and Other Communication Disorders (NIDCD); fact sheets and guidelines at **http://www.nidcd.nih.gov/health/**
- National Institute of Dental and Craniofacial Research (NIDCR); guidelines available at **http://www.nidr.nih.gov/health/**
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); guidelines available at **http://www.niddk.nih.gov/health/health.htm**
- National Institute on Drug Abuse (NIDA); guidelines available at **http://www.nida.nih.gov/DrugAbuse.html**
- National Institute of Environmental Health Sciences (NIEHS); environmental health information available at **http://www.niehs.nih.gov/external/facts.htm**
- National Institute of Mental Health (NIMH); guidelines available at **http://www.nimh.nih.gov/practitioners/index.cfm**
- National Institute of Neurological Disorders and Stroke (NINDS); neurological disorder information pages available at **http://www.ninds.nih.gov/health_and_medical/disorder_index.htm**
- National Institute of Nursing Research (NINR); publications on selected illnesses at **http://www.nih.gov/ninr/news-info/publications.html**
- National Institute of Biomedical Imaging and Bioengineering; general information at **http://grants.nih.gov/grants/becon/becon_info.htm**
- Center for Information Technology (CIT); referrals to other agencies based on keyword searches available at **http://kb.nih.gov/www_query_main.asp**
- National Center for Complementary and Alternative Medicine (NCCAM); health information available at **http://nccam.nih.gov/health/**
- National Center for Research Resources (NCRR); various information directories available at **http://www.ncrr.nih.gov/publications.asp**
- Office of Rare Diseases; various fact sheets available at **http://rarediseases.info.nih.gov/html/resources/rep_pubs.html**
- Centers for Disease Control and Prevention; various fact sheets on infectious diseases available at **http://www.cdc.gov/publications.htm**

NIH Databases

In addition to the various Institutes of Health that publish professional guidelines, the NIH has designed a number of databases for professionals.[13] Physician-oriented resources provide a wide variety of information related to the biomedical and health sciences, both past and present. The format of these resources varies. Searchable databases, bibliographic citations, full-text articles (when available), archival collections, and images are all available. The following are referenced by the National Library of Medicine:[14]

- **Bioethics:** Access to published literature on the ethical, legal, and public policy issues surrounding healthcare and biomedical research. This information is provided in conjunction with the Kennedy Institute of Ethics located at Georgetown University, Washington, D.C.: **http://www.nlm.nih.gov/databases/databases_bioethics.html**
- **HIV/AIDS Resources:** Describes various links and databases dedicated to HIV/AIDS research: **http://www.nlm.nih.gov/pubs/factsheets/aidsinfs.html**
- **NLM Online Exhibitions:** Describes "Exhibitions in the History of Medicine": **http://www.nlm.nih.gov/exhibition/exhibition.html**. Additional resources for historical scholarship in medicine: **http://www.nlm.nih.gov/hmd/hmd.html**
- **Biotechnology Information:** Access to public databases. The National Center for Biotechnology Information conducts research in computational biology, develops software tools for analyzing genome data, and disseminates biomedical information for the better understanding of molecular processes affecting human health and disease: **http://www.ncbi.nlm.nih.gov/**
- **Population Information:** The National Library of Medicine provides access to worldwide coverage of population, family planning, and related health issues, including family planning technology and programs, fertility, and population law and policy: **http://www.nlm.nih.gov/databases/databases_population.html**
- **Cancer Information:** Access to cancer-oriented databases: **http://www.nlm.nih.gov/databases/databases_cancer.html**
- **Profiles in Science:** Offering the archival collections of prominent twentieth-century biomedical scientists to the public through modern digital technology: **http://www.profiles.nlm.nih.gov/**
- **Chemical Information:** Provides links to various chemical databases and references: **http://sis.nlm.nih.gov/Chem/ChemMain.html**
- **Clinical Alerts:** Reports the release of findings from the NIH-funded clinical trials where such release could significantly affect morbidity and mortality: **http://www.nlm.nih.gov/databases/alerts/clinical_alerts.html**
- **Space Life Sciences:** Provides links and information to space-based research (including NASA): **http://www.nlm.nih.gov/databases/databases_space.html**
- **MEDLINE:** Bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the healthcare system, and the pre-clinical sciences: **http://www.nlm.nih.gov/databases/databases_medline.html**

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[13] Remember, for the general public, the National Library of Medicine recommends the databases referenced in MEDLINE*plus* (**http://medlineplus.gov/** or **http://www.nlm.nih.gov/medlineplus/databases.html**).

[14] See **http://www.nlm.nih.gov/databases/databases.html**.

- **Toxicology and Environmental Health Information (TOXNET):** Databases covering toxicology and environmental health: **http://sis.nlm.nih.gov/Tox/ToxMain.html**
- **Visible Human Interface:** Anatomically detailed, three-dimensional representations of normal male and female human bodies: **http://www.nlm.nih.gov/research/visible/visible_human.html**

The Combined Health Information Database

A comprehensive source of information on clinical guidelines written for professionals is the Combined Health Information Database. You will need to limit your search to one of the following: Brochure/Pamphlet, Fact Sheet, or Information Package, and "stress management" using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find associations, use the drop boxes at the bottom of the search page where "You may refine your search by." For the publication date, select "All Years." Select your preferred language and the format option "Fact Sheet." Type "stress management" (or synonyms) into the "For these words:" box. The following is a sample result:

- **A Stress Management Program: Caring for HIV/AIDS Caregivers - Leader's Guide**

  Contact: Canadian Hospital Association, Customer Service, 17 York St, Ottawa, (613) 238-8005.

  Summary: This seven-part Canadian program is designed for healthy people who are searching for ways to manage the stress of HIV/AIDS care. This program leader's guide covers: 1) an overview of the modules (HIV/AIDS-related stress, personal stress, honoring values, managing the risk, team support, grieving and thriving in the workplace); 2) information on working with adults; 3) confidentiality and values issues; 4) handling difficult situations with program participants; 5) promoting and managing the program; and 5) a resource list. It provides reproducible worksheets and handouts, meeting announcements, and audio tapes. It discusses the roles of the program coordinator, facilitator, and participants; and gives guidelines on using the modules and audio tapes.

The NLM Gateway[15]

The NLM (National Library of Medicine) Gateway is a Web-based system that lets users search simultaneously in multiple retrieval systems at the U.S. National Library of Medicine (NLM). It allows users of NLM services to initiate searches from one Web interface, providing one-stop searching for many of NLM's information resources or databases.[16] To use the NLM Gateway, simply go to the search site at **http://gateway.nlm.nih.gov/gw/Cmd**. Type "stress management" (or synonyms) into the search box and click "Search." The results will be presented in a tabular form, indicating the number of references in each database category.

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[15] Adapted from NLM: **http://gateway.nlm.nih.gov/gw/Cmd?Overview.x**.

[16] The NLM Gateway is currently being developed by the Lister Hill National Center for Biomedical Communications (LHNCBC) at the National Library of Medicine (NLM) of the National Institutes of Health (NIH).

Results Summary

Category	Items Found
Journal Articles	7596
Books / Periodicals / Audio Visual	408
Consumer Health	579
Meeting Abstracts	135
Other Collections	53
Total	8771

HSTAT[17]

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.[18] These documents include clinical practice guidelines, quick-reference guides for clinicians, consumer health brochures, evidence reports and technology assessments from the Agency for Healthcare Research and Quality (AHRQ), as well as AHRQ's Put Prevention Into Practice.[19] Simply search by "stress management" (or synonyms) at the following Web site: **http://text.nlm.nih.gov**.

Coffee Break: Tutorials for Biologists[20]

Coffee Break is a general healthcare site that takes a scientific view of the news and covers recent breakthroughs in biology that may one day assist physicians in developing treatments. Here you will find a collection of short reports on recent biological discoveries. Each report incorporates interactive tutorials that demonstrate how bioinformatics tools are used as a part of the research process. Currently, all Coffee Breaks are written by NCBI staff.[21] Each report is about 400 words and is usually based on a discovery reported in one or more articles from recently published, peer-reviewed literature.[22] This site has new articles every few weeks, so it can be considered an online magazine of sorts. It is intended for general background information. You can access the Coffee Break Web site at the following hyperlink: **http://www.ncbi.nlm.nih.gov/Coffeebreak/**.

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[17] Adapted from HSTAT: **http://www.nlm.nih.gov/pubs/factsheets/hstat.html**.

[18] The HSTAT URL is **http://hstat.nlm.nih.gov/**.

[19] Other important documents in HSTAT include: the National Institutes of Health (NIH) Consensus Conference Reports and Technology Assessment Reports; the HIV/AIDS Treatment Information Service (ATIS) resource documents; the Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Treatment (SAMHSA/CSAT) Treatment Improvement Protocols (TIP) and Center for Substance Abuse Prevention (SAMHSA/CSAP) Prevention Enhancement Protocols System (PEPS); the Public Health Service (PHS) Preventive Services Task Force's *Guide to Clinical Preventive Services*; the independent, nonfederal Task Force on Community Services' *Guide to Community Preventive Services*; and the Health Technology Advisory Committee (HTAC) of the Minnesota Health Care Commission (MHCC) health technology evaluations.

[20] Adapted from **http://www.ncbi.nlm.nih.gov/Coffeebreak/Archive/FAQ.html**.

[21] The figure that accompanies each article is frequently supplied by an expert external to NCBI, in which case the source of the figure is cited. The result is an interactive tutorial that tells a biological story.

[22] After a brief introduction that sets the work described into a broader context, the report focuses on how a molecular understanding can provide explanations of observed biology and lead to therapies for diseases. Each vignette is accompanied by a figure and hypertext links that lead to a series of pages that interactively show how NCBI tools and resources are used in the research process.

Other Commercial Databases

In addition to resources maintained by official agencies, other databases exist that are commercial ventures addressing medical professionals. Here are some examples that may interest you:

- **CliniWeb International:** Index and table of contents to selected clinical information on the Internet; see **http://www.ohsu.edu/cliniweb/**.
- **Medical World Search:** Searches full text from thousands of selected medical sites on the Internet; see **http://www.mwsearch.com/**.

APPENDIX B. PATIENT RESOURCES

Overview

Official agencies, as well as federally funded institutions supported by national grants, frequently publish a variety of guidelines written with the patient in mind. These are typically called "Fact Sheets" or "Guidelines." They can take the form of a brochure, information kit, pamphlet, or flyer. Often they are only a few pages in length. Since new guidelines on stress management can appear at any moment and be published by a number of sources, the best approach to finding guidelines is to systematically scan the Internet-based services that post them.

Patient Guideline Sources

The remainder of this chapter directs you to sources which either publish or can help you find additional guidelines on topics related to stress management. Due to space limitations, these sources are listed in a concise manner. Do not hesitate to consult the following sources by either using the Internet hyperlink provided, or, in cases where the contact information is provided, contacting the publisher or author directly.

The National Institutes of Health

The NIH gateway to patients is located at **http://health.nih.gov/**. From this site, you can search across various sources and institutes, a number of which are summarized below.

Topic Pages: MEDLINEplus

The National Library of Medicine has created a vast and patient-oriented healthcare information portal called MEDLINEplus. Within this Internet-based system are "health topic pages" which list links to available materials relevant to stress management. To access this system, log on to **http://www.nlm.nih.gov/medlineplus/healthtopics.html**. From there you can either search using the alphabetical index or browse by broad topic areas. Recently, MEDLINEplus listed the following when searched for "stress management":

- Other guides

  Arthritis
  http://www.nlm.nih.gov/medlineplus/arthritis.html

  Disasters and Emergency Preparedness
  http://www.nlm.nih.gov/medlineplus/disastersandemergencypreparedness.html

  Post-Traumatic Stress Disorder
  http://www.nlm.nih.gov/medlineplus/posttraumaticstressdisorder.html

  Spinal Cord Injuries
  http://www.nlm.nih.gov/medlineplus/spinalcordinjuries.html

You may also choose to use the search utility provided by MEDLINEplus at the following Web address: **http://www.nlm.nih.gov/medlineplus/**. Simply type a keyword into the search box and click "Search." This utility is similar to the NIH search utility, with the exception that it only includes materials that are linked within the MEDLINEplus system (mostly patient-oriented information). It also has the disadvantage of generating unstructured results. We recommend, therefore, that you use this method only if you have a very targeted search.

The Combined Health Information Database (CHID)

CHID Online is a reference tool that maintains a database directory of thousands of journal articles and patient education guidelines on stress management. CHID offers summaries that describe the guidelines available, including contact information and pricing. CHID's general Web site is **http://chid.nih.gov/**. To search this database, go to **http://chid.nih.gov/detail/detail.html**. In particular, you can use the advanced search options to look up pamphlets, reports, brochures, and information kits. The following was recently posted in this archive:

- **Oromandibular Dystonia: A Focal Form of Dystonia**

  Source: Chicago, IL: Dystonia Medical Research Foundation. 1998. [2 p.].

  Contact: Available from Dystonia Medical Research Foundation. One East Wacker Drive, Suite 2430, Chicago, IL 60601-1905. (312) 755-0198. Fax (312) 803-0138. E-mail: dystonia@dystonia-foundation.org. Website: www.dystonia-foundation.org. PRICE: $0.20.

  Summary: Dystonia is a neurological movement disorder that causes muscles in the body to pull or involuntarily spasm. This brochure describes oromandibular dystonia (OMD), a form of focal dystonia that affects varying areas of the head and neck, including the lower face, jaws, tongue, and larynx. The spasms may cause the mouth to pull open, shut tight, or move repetitively, and speech and swallowing may be distorted. The symptoms usually begin between the ages of 40 and 70 years and appear to be more common in women than in men. The brochure discusses the etiology (cause and prognosis of OMD), and outlines the current forms of therapy for the disorder. Treatment is designed to help the symptoms of spasms, pain, and disturbed posture and function. Treatments discussed include conservative therapies, speech and swallowing therapy, medications, botulinum toxin injections, surgery, and supportive forms of treatment (including **stress management** and relaxation techniques).

- **Nine Weeks to a Perfect Diet**

  Source: Washington, DC: Center for Science in the Public Interest, 11p., 1998.

  Contact: Center for Science in the Public Interest, 1501 16th St., NW, Washington, DC 20036. (202) 332-9110. Web Address http://www.cspinet.org/. Email: cspi@cspinet.org.

  Summary: In this brochure Jacobson explains how to improve your diet over a period of 9 weeks. In this way, the changes are gradual, allowing the taste buds and the individual to adjust slowly. The changed diet will contain less sodium, fat, cholesterol, and sugar. Therefore, says Jacobson, an individual who follows the plan will lose weight, lower blood pressure, and reduce cholesterol levels. The first week, Jacobson advocates using substitutes for butter, margarine and oils. The second week's goal is to avid egg yolk; week three's is a switch to non-fat dairy products. Week four concentrates on grains and eating whole grain breads, cereals and other grain products. During the fifth week, the aim is to eat less meat and poultry, substituting veggieburgers, lentils and tofu. In week six, Jacobson suggests increasing the amount of vegetables in the diet by following the Five-a-Day guideline. The seventh week's objective is reduce salt intake, week eight's is to eat fruit as a snack, and week nine focuses on reducing the sugar eaten regularly. Other suggestions include exercising, taking supplements as suggested by a physician, either quitting or not starting smoking, **stress management,** and not drinking alcohol.

- **Interstitial Cystitis: Understanding Your Painful Bladder Condition**

  Source: San Bruno, CA: StayWell Company. 1999. [4 p.].

  Contact: Available from StayWell Company. Order Department, 1100 Grundy Lane, San Bruno, CA 94066-9821. (800) 333-3032. Fax (650) 244-4512. E-mail: email@staywell.com. Website: www.staywell.com. PRICE: $20.00 for pack of 50; plus shipping and handling.

  Summary: Interstitial cystitis (IC) is a chronic and painful condition of the bladder. People with IC have a bladder wall that is tender and easily irritated, leading to uncomfortable symptoms. This patient education brochure describes IC and how it is treated. The author stresses that although IC currently has no cure, the symptoms can be managed to help patients feel better and live more comfortably. IC symptoms are similar to those of a urinary tract infection, including the frequent and urgent need to urinate; pain or pressure in the bladder area, often relieved for a short time after urinating; pain in the genitals or anus; and painful sexual intercourse. The brochure describes what is known about the bladder wall, changes that occur in IC, and the types of diagnostic tests used to identify those changes. The cause of IC is still unknown, but possible causes include damage to the protective bladder lining (which allows urine to irritate the bladder wall), infection of the bladder, allergic reaction in the bladder, neurological (nerve) problems, or substances found in the urine that are irritating to the bladder. The brochure outlines the various treatment options that may be used, including lifestyle changes (dietary modification, bladder retraining, stress management), oral medications, bladder hydrodistention, bladder instillation, biofeedback, electrical stimulation, and surgery. The brochure concludes with a section that emphasizes the importance of utilizing support systems, including support groups for people with IC; the toll free telephone line of the Interstitial Cystitis Association (ICA) is provided (800-ICA-1626). The brochure is illustrated with full color line drawings. 9 figures.

- **Irritable Bowel Syndrome**

  Source: Bethesda, MD: National Digestive Diseases Information Clearinghouse (NDDIC), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health. 2003. 3 p.

  Contact: Available from National Digestive Diseases Information Clearinghouse (NDDIC). 2 Information Way, Bethesda, MD 20892-3570. (800) 891-5389 or (301) 654-3810. Fax (301) 634-0716. E-mail: nddic@info.niddk.nih.gov. Website: www.niddk.nih.gov. PRICE: Full-text available online at no charge; single copy free; bulk copies available. Order Number: DD-14.

  Summary: Irritable bowel syndrome (IBS) is a chronic disorder of the colon. This fact sheet reviews the symptoms, causes, diagnosis, and treatment of IBS. The fact sheet also discusses how diet and stress affect IBS and complications that can arise from IBS or its treatment. The author notes that although IBS can cause a great deal of discomfort, it is not serious and does not lead to any serious disease. With attention to proper diet, **stress management,** and sometimes medication, most people with IBS can keep their symptoms under control. A list of additional readings is included. 1 figure.

- **What Everyone Should Know About Wellness**

  Source: South Deerfield, MA: Channing L. Bete Company, Inc. 1997. 16 p.

  Contact: Available from Channing L. Bete Company, Inc. 200 State Road, South Deerfield, MA 01373-0200. (800) 628-7733. Fax (800) 499-6464. PRICE: $1.25 each for 1-24 copies; discounts available for larger orders.

  Summary: This booklet covers the concept of wellness. According to the booklet, wellness means taking responsibility for personal health by learning how to stay healthy, practicing good health habits and giving up harmful ones, and responding to the body's warning signs before something serious happens. Topics include reasons for learning about wellness, health factors, lifestyle, exercise, food variety, **stress management,** and programs that promote wellness. Health factors that cannot be controlled (including heredity, environment, sex, and age) can often be minimized by changes in lifestyle, eating, and exercise and involvement in a wellness program. Health factors that can be controlled include diet, exercise, rest, stress, bad habits, and attitude. Tips for managing stress include being realistic, limiting changes, talking with others, planning responsibilities, learning to relax, improving personal environment, and seeking professional help. The booklet is illustrated with cartoon line drawings of individuals and includes a food guide pyramid.

- **Solving the Pain Puzzle: Myofascial Pain Dysfunction Syndrome**

  Source: Dallas, TX: MyoData-TMJ and Stress Center. 1990. 32 p.

  Contact: Available from MyoData/TMJ and Stress Center. P.O. Box 803394, Dallas, TX 75380. (972) 416-7676. PRICE: $6.95 plus shipping and handling; bulk orders available. Order number B101.

  Summary: This booklet is written for people who have myofascial pain dysfunction (MPD). The authors use the term MPD to describe a group of symptoms which involve pain in the muscles of the face. Topics covered include symptoms; who suffers from MPD; untreated MPD; emotional, biochemical, and structural causes of MPD; structural considerations; emotional considerations; diagnosis; the use of transcutaneous electrical neural stimulation (TENS); measuring jaw movement; measuring muscle activity;

treatment options; and supporting therapies, including physical therapy, counseling and **stress management;** and physicians, including ear, nose, and throat specialists. The brochure includes a preliminary diagnostic screening for readers to perform on themselves. 15 figures. 7 footnotes. 2 tables. 15 references.

- **It's All About You: Who You Are and What You Do**

  Source: Rosemont, IL: National Dairy Council, 8 panels, 1997.

  Contact: National Dairy Council, O'Hare International Center, 10255 West Higgins Road, Suite 9A, Rosemont, IL, 60018-5616. (800) 426- 8271. (708) 803-2000. ext. 306.

  Summary: This brochure explains how genetics and lifestyle factors, such as weight control, combine to influence health. Scorecards allow the reader to determine health risks and lifestyle habits that contribute to good health. Suggestions are given for improving lifestyle factors such as diet, exercise, and **stress management.** Dietary management is emphasized for such illnesses as heart disease, hypertension, and osteoporosis.

- **Coping With ARC: A Series of Handbooks for People With AIDS**

  Contact: Washington State Department of Health, Community and Family Health Division, PO Box 47840, Olympia, WA, 98504-7840, (360) 236-3426, http://www.doh.wa.gov/cfh/hiv.htm.

  Summary: This brochure explains the conditions that are known as AIDS-related complex (ARC) and result from infection by the Human immunodeficiency virus (HIV). It offers guidelines on treatment, **stress management,** and obtaining psychosocial support. It also discusses antibody testing, diagnostic criteria, and safer sexual conduct.

- **Scleroderma**

  Source: Atlanta, GA: Arthritis Foundation. 1997. 10 p.

  Contact: Available from Arthritis Foundation. P.O. Box 1616, Alpharetta, GA 30009-1616. (800) 207-8633. Fax (credit card orders only) (770) 442-9742. http://www.arthritis.org. PRICE: Single copy free from local Arthritis Foundation chapter (call 800-283-7800 for closest local chapter); bulk orders may be purchased from address above.

  Summary: This brochure for people with scleroderma uses a question and answer format to provide information on this rare, chronic disease, which affects women much more often than men. Although the cause is unknown, scientists know that a person with scleroderma produces too much collagen, which causes thickening and hardening of the skin and affects the functioning of internal organs. The brochure outlines the ways in which the various forms of scleroderma affect the body and it explains how the disease is diagnosed and treated. Treatment may consist of medication, exercise, joint and skin protection, and **stress management.** The brochure also provides information on the Arthritis Foundation.

- **Thinking About Stress**

  Source: Midland, MI: Health Enhancement Systems. 1998. 2 p.

  Contact: Available from Health Enhancement Systems. P.O. Box 1035, Midland, MI 48641-1035. (800) 326-2317. Fax (517) 839-0025. PRICE: $0.68 each for a pack of 10 to 50

brochures; bulk quantities available; plus shipping and handling. Item number HESSM-1.

Summary: This brochure guides readers through the process of thinking about reducing stress. The brochure begins by explaining the importance of reducing stress and outlining the advantages of **stress management,** including helping people have more energy, sleep better, be more resistant to illness, and experience less depression. In addition, the brochure asks a series of questions that helps readers think about controlling stress. The brochure includes a list of helpful organizations.

- **Living Healthy with Diabetes**

  Source: St. Louis, MO: Mosby-Great Performance, Inc. 1995. 4 p.

  Contact: Available from Mosby-Great Performance, Inc. Order Department, 11830 Westline Industrial Drive, St. Louis, MO 63146. (800) 433-3803. Fax (800) 535-9935. PRICE: $0.65 each; bulk discounts available.

  Summary: This brochure introduces the basics of diabetes and its warning symptoms. Topics include the role of insulin in the body, the types of diabetes, the warning signs of diabetes, weight levels that place an individual at risk for diabetes, the foods and activities that affect blood glucose levels, and the importance of working in tandem with a health care provider to monitor and manage diabetes. The brochure folds open to a sheet that summarizes the main components of a healthy lifestyle for people with diabetes. The components include a proper diet, **stress management,** foot care, physical activity, and weight loss. The brochure features full-color illustrations and layperson's language to describe the concepts.

- **Creating: Sharing the Caring System. Comprehensive Training Series: Alzheimer's Disease and Other Dementias**

  Source: San Diego, CA: George G. Glenner Alzheimer's Family Centers, Inc. 1989. 4 p.

  Contact: Available from George G. Glenner Alzheimer's Family Centers, Inc. 3702 Fourth Avenue, San Diego, CA 92103-4106. (800) 736-6674. PRICE: Free.

  Summary: This brochure outlines a 6-module training program that is designed to train nurses, special care units, acute care hospital staff, community groups/volunteers, respite workers, and others in the understanding and care of patients with Alzheimer's disease and other dementias. The modules cover causes, symptoms, and progression of Alzheimer's disease, interaction techniques, environmental adaptation, the planning and conduct of appropriate patient activities, and caregiver/family **stress management.**

- **Soothing the Symptoms of Irritable Bowel Syndrome: Recognizing Symptoms, Relieving Discomfort**

  Source: Cincinnati, OH: Procter and Gamble. 1994. 12 p.

  Contact: Available from Metamucil-Procter and Gamble. P.O. Box 9032, Cincinnati, OH 45209-9970. PRICE: Single copy free; bulk copies available.

  Summary: This brochure provides a general overview of irritable bowel syndrome (IBS) and gives recommendations on how to manage it. Topics include the typical symptoms of IBS; the physiology of the digestive system; the role of food and stress in IBS; diagnostic tests used to confirm IBS; treatment options, including diet, **stress management,** and medications; the role of a high fiber diet; and the use of fiber supplements, including the product Metamucil. The brochure is produced by the

manufacturer of Metamucil. The brochure includes a reply card to obtain more information about Metamucil products. 4 figures. 1 table.

- **My Personal Goals**

  Source: Minneapolis, MN: Park Nicollet Health Source. 1996. 4 p.

  Contact: Available from Park Nicollet Health Source. 3800 Park Nicollet Boulevard, Minneapolis, MN 55416. (800) 372-7776 or (612) 993-3534. Fax (612) 993-1840. PRICE: $1.25 for 10-49 copies; $1.12 for 50-99 copies; $1.03 for 100-499 copies. ISBN: 1885115296.

  Summary: This brochure provides information to people with diabetes about developing an action plan to improve diabetes care. The authors note that goals must be measurable and reflect a person's current health and abilities. Developing a plan involves readiness to change, goal setting, creating check points to evaluate progress, and commitment. Tips include visiting one's diabetes care team regularly, seeking the support of family and friends, outsmarting obstacles, learning **stress management** strategies, expecting to relapse and planning a coping strategy, and rewarding oneself. The brochure includes example goals specific to following a meal plan, becoming physically active, regularly testing blood sugar, taking prescribed diabetes medication, balancing stress, and seeking support when necessary. The brochure emphasizes that developing new, healthier habits is a gradual process. (AA-M).

- **Advantages of Reducing Stress**

  Source: Midland, MI: Health Enhancement Systems. 1998. 6 p.

  Contact: Available from Health Enhancement Systems. P.O. Box 1035, Midland, MI 48641-1035. (800) 326-2317. Fax (517) 839-0025. PRICE: $0.98 each for a pack of 10 to 50 brochures; bulk quantities available; plus shipping and handling. Item number HESSM-2.

  Summary: This brochure provides readers with information on the benefits of reducing stress. The brochure begins by explaining the importance of managing stress. This is followed by information on the advantages of **stress management,** including helping people have more energy and a clearer idea of their goals, sleep better, experience greater harmony in interpersonal relations, and diminish physical and emotional problems. In addition, the brochure presents several scenes that readers can reflect upon to help them begin to manage stress, provides sample questions that readers can answer to learn about what triggers their stress, and explains the importance of finding supportive people. The brochure includes a list of helpful organizations.

- **Nutrition Basics**

  Contact: CVS ProCare Pharmacy, 600 Penn Center Blvd, Pittsburgh, PA, 15235-5810, (800) 238-7828, http://www.stadtlander.com.

  Summary: This brochure summarizes nutritional standards for recommended quantities and foods, food safety techniques, weight management, and nutritional supplements primarily for people with HIV. It highlights the food pyramid, recommended serving sizes, and improved nutrition labels found on grocery items. The article discusses food handling safety in the kitchen, in the grocery store, during food preparation, and when dining out by focusing on key sanitation and storage habits. It describes weight control and its relationship to diet, exercise, and **stress management.** The pros and cons of nutritional supplements are specified.

- **Take-Charge Management (for Type 2 Diabetes): Bayer Care Health Facts**

  Source: Tarrytown, NY: Bayer Corporation. 2000. [11 p.].

  Contact: Available from Bayer Corporation. Diagnostics Division, 511 Benedict Avenue, Tarrytown, NY 10591-5097. (800) 445-5901. PRICE: Single copy free.

  Summary: This brochure uses a question and answer format to provide people who have type 2 diabetes with information on managing this disease. The goal of take charge management is to get blood glucose levels as close to normal as possible. A take charge management plan consists of various components, including diet, exercise, medication, self monitoring of blood glucose (SMBG), education, **stress management,** and goals. The brochure identifies the members of a diabetes health care team, including a diabetes nurse educator, a dietitian, a doctor, a pharmacist, a podiatrist, support groups, and family and friends. Other topics include the take charge items a person and his or her team may check at different times during a year and the types of issues a person should discuss with his or her team. In addition, the brochure highlights the findings of the Diabetes Control and Complications Trial (DCCT), the Kumamoto Study, and the United Kingdom Prospective Diabetes Study (UKPDS) with regard to tight blood glucose control. The brochure concludes with a list of helpful contacts. 1 table.

- **Special Health Issues for Women: Put Yourself First: Life Is What You Make It**

  Contact: Agouron Pharmaceuticals Inc, 10350 N Torrey Pines Rd, La Jolla, CA, 92307, (619) 622-3000, http://www.agouron.com.

  Summary: This brochure, written for women with the human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS), provides information about special health issues related to their treatment. HIV is a virus that replicates in the immune system, weakens it, and eventually develops in to AIDS. The brochure discusses how to tell partners and children of a positive HIV status, **stress management** techniques, and safer sex for woman with HIV/AIDS. HIV is likely to affect a woman's period and make her more vulnerable to contracting the human papillomavirus (HPV), which puts women at greater risk for cervical cancer. A Pap smear, a test that should be performed every six months on women with HIV, can detect HPV and cervical cancer. Women with HIV are more likely than men with HIV to develop wasting syndrome and are more likely than persons without HIV to develop an opportunistic infection (IO) such as bacterial pneumonia, pneumocystis carinii pneumonia (PCP), candidiasis, and mycobacterium avium complex (MAC). The brochure briefly discusses these OIs and their symptoms. The brochure provides information on the special considerations regarding HIV-positive women who are or who want to become pregnant and the effectiveness of the therapeutic drug zidovudine (AZT) on the prevention of perinatal transmission. The brochure discusses treatment regimen adherence and provides contact information for services from which individuals can learn more about HIV/AIDS.

- **Help!: For the Newly Diagnosed Alzheimer Patient, Families, and Care Givers**

  Source: Oswego, NY: Oswego County Office for the Aging. 1988. 51 p.

  Contact: Available from Oswego County Office for the Aging. County Office Complex, 70 Bunner Street, Oswego, NY 13126. (315) 349-3484.

  Summary: This comprehensive booklet was written for caregivers of Alzheimer's patients. It describes Alzheimer's disease and profiles its early symptoms. Caregiver emotions and support services are covered in detail. The author also gives practical

advice on health, hygiene, communication, safety, legal and financial implications, and **stress management.**

- **Guidelines for Women With HIV/AIDS**

  Contact: Project Inform, HIV Treatment Hotline, 205 13th St Ste 2001, San Francisco, CA, 94103, (415) 558-8669, http://www.projectinform.org.

  Summary: This fact sheet addresses social, psychological, sexual, and physical issues concerning HIV that are specific to women. One section outlines ways of handling relationships and discussing HIV status with family, friends, partners/lovers, and children. Psychological topics covered include support groups and **stress management.** Methods of safer sex discussed include latex condoms, female condoms, and dental dams. Information is provided on the following opportunistic infections and HIV-related problems that particularly affect women: idiopathic thrombocytopenia (ITP), menstrual abnormalities, cervical cancer, pelvic inflammatory disease, and vaginal infections. The sheet also examines recent perinatal transmission research, making difficult decisions in pregnancy, and what to do if a child is HIV positive. It includes a list of hotlines, newsletters, organizations, and special programs.

- **Diabetes**

  Source: Houston, TX: Baylor College of Medicine, Office of Health Promotion. 1993. 4 p.

  Contact: Available from We Care for You: Diabetes. Baylor College of Medicine, Houston, TX 77030. (800) 392-4444. PRICE: Single copy free with stamped, self-addressed envelope.

  Summary: This fact sheet provides a basic overview of diabetes. Topics include the health consequences of diabetes, particularly those of undiagnosed diabetes; risk factors, including family history, age, ethnicity, and obesity; glucose tolerance testing; the types of diabetes, i.e., insulin-dependent (IDDM or Type I) and noninsulin dependent (NIDDM or Type II) diabetes; treatment options; research news; the impact of lifestyle of diabetes prevention and treatment; dietary recommendations, such as eat less meat, eat lower-fat meals, use nonfat dairy products, avoid adding fats, and avoid saturated fats; the role of exercise in staying healthy; other types of blood glucose disorders, including gestational diabetes, impaired glucose tolerance, and secondary diabetes; and the importance of **stress management.** The fact sheet is illustrated with simple line drawings and is available in either English or Spanish.

- **Tips on How to Care for Your Eczema**

  Source: American Family Physician. 54(4): 1253-1254. September 5, 1996.

  Contact: American Academy of Family Physicians. 11400 Tomahawk Creek Parkway, Leawood, KS 66211-2672. (800) 274-2237 or (913) 906-6000. E-mail: fp@aafp.org. Website: www.aafp.org.

  Summary: This information sheet for patients with eczema provides skin care tips and recommendations on how to help control the disease's severity. The sheet explains how to limit skin contact with irritants, including clothing and exposure to water and soap products; and the use of medications and moisturizers. Additional recommendations include avoidance of scratching or rubbing of the affected areas, limiting overheating and sweating, and **stress management** to control flare ups.

- **National HIV/AIDS Volunteer Training Kit**

  Contact: AIDS Committee of Toronto, 399 Church St 4th Fl, Toronto, (416) 340-2437, http://www.actoronto.org. Canadian Public Health Association, Canadian HIV/AIDS Clearinghouse, 400-1565 Carling Ave Ste 400, Ottawa, (613) 725-3434, http://www.cpha.ca.

  Summary: This instructional package provides information about training volunteers for the care and support of patients with the human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS). The instructional package is divided into three sections: introductory modules, core skills modules, and training modules. The core skills modules include 'AIDS 101,' 'First Contact,' and 'Prevention Education.' 'AIDS 101' contains basic information about HIV/AIDS and antibody testing. 'First Contact' addresses issues such as assessment, referral, and information procedures; confidentiality; communication skills; working with diversity; homophobia; bereavement; **stress management** for volunteers; and rural populations. 'Prevention Education' supplies the readers with information about how to educate volunteers about safer sex, risk reduction, negotiating sex, women and AIDS, health promotion, holistic health, and injection drug use and HIV. The training modules include 'Practical Assistance/Homecare,' 'Support Group Facilitation,' 'Volunteer/Peer Counselling,' 'Telephone Counselling/Hotlines,' and 'Peer/Community Education.' 'Practical Assistance/Homecare' examines issues associated with caregiving including home and palliative care, infection control, universal precautions, HIV symptoms and health maintenance, and dealing with death and dying. 'Support Group Facilitation' covers group counseling-related subjects such as group dynamics, facilitation skills, conflict resolution, crisis resolution, and substance abuse and HIV. 'Volunteer/Peer Counselling' discusses HIV/AIDS counseling issues and techniques. 'Telephone Counselling/Hotlines' instructs the readers about hotline operation, and 'Peer/Community Education' discusses public speaking basics, outreach, and AIDS in prisons.

- **Diabetes Patient Education Manual**

  Source: Gaithersburg, MD: Aspen Publishers. 2000. 378 p.

  Contact: Available from Aspen Publishers, Inc. 200 Orchard Ridge Drive, Gaithersburg, MD 20878. (800) 234-1660. Fax (800) 901-9075. E-mail: customer.service@aspenpubl.com. Website: www.aspenpub.com. PRICE: $159.00 plus shipping and handling. Order number 12757. ISBN: 0834212757.

  Summary: This manual serves as a comprehensive source of patient education materials for the diabetes patient. Chapter one, created especially for the professional, addresses the issue of effective patient education. Topics include conducting an educational needs assessment, using various teaching plans and strategies, and creating effective materials. The topics in the following chapters are presented in the form of a collection of large print, easy to read handouts. Each topic is presented at third and sixth grade literacy levels and in both English and Spanish. In addition to these low literacy materials, the manual includes patient education materials created by diabetes professionals from around the United States. Chapter two provides an overview of diabetes and its treatment. Chapter three discusses blood sugar control, focusing on self monitoring of blood glucose, hypoglycemia, hyperglycemia, and ketones. Chapter four presents meal planning guidelines and provides worksheets and planning forms. Chapter five explains the use of insulin; oral diabetes medications such as sulfonylureas, biguanides, alpha glucosidase inhibitors, thiazolidinediones, and meglitinides; and other medications that

may increase or decrease blood glucose levels. Chapter six discusses the importance of exercise in diabetes management and offers guidelines for creating an individualized exercise program. Chapter seven describes diabetes related complications, including heart and circulation, foot, skin, eye, nerve, dental, and kidney problems. Other topics include **stress management,** women's sexual health, and the prevention and treatment of constipation. Chapter eight addresses issues related to special situations, including sick days, pregnancy, travel, surgery, and driving. Many chapters also include practitioner reference materials.

- **All About Atopic Dermatitis**

  Source: Portland, OR: National Eczema Association for Science and Education. 1998. 8 p.

  Contact: Available from National Eczema Association for Science and Education. 1220 SW Morrison Street, Suite 433, Portland, OR 97205-2235. (800) 818-7546 or (503) 228-4430. Fax (503) 224-3363. E-mail: nease@teleport.com. Website: www.eczema-assn.org. PRICE: Single copy free; $25.00 per 100 plus shipping and handling.

  Summary: This pamphlet uses a question and answer format to provide people who have atopic dermatitis (AD) with information on this disease, which causes itchy, inflamed skin. AD, the most severe and chronic kind of eczema, almost always begins in childhood and is not contagious. Children affected by AD may have asthma and hay fever at the same time, or one or both of these conditions may develop later. Although the problem may fade during childhood, people with AD have a lifelong tendency toward dry skin, occupational skin disease, skin infections, eye problems, disruptions in family and social relationships, and loss of work. The pamphlet identifies the trigger factors for AD, including irritants and other allergens. Food allergies can cause flareups, as can airborne allergens, emotional stress, exposure to extreme cold or hot temperatures, or sudden changes in temperature. The pamphlet offers suggestions for managing flareups, dry skin, and infections. It also provides tips on treating and controlling AD, including establishing a skin care routine, recognizing stressful situations and events, learning **stress management** techniques, being aware of scratching, and controlling one's environment. 4 figures.

- **Living Well With a Chronic Illness**

  Source: South Deerfield, MA: Channing L. Bete Company, Inc. 1996. 15 p.

  Contact: Available from Channing L. Bete Company, Inc. 200 State Road, South Deerfield, MA 01373-0200. (800) 628-7733. Fax (800) 499-6464. PRICE: $1.25 each for 1-24 copies; discounts available for larger orders.

  Summary: This patient education booklet helps patients who have recently been diagnosed with a chronic illness to cope with the resulting changes in their lives. Topics include the range of emotions that may be experienced after diagnosis; living well with a chronic illness; learning to adjust to changes; signs of depression; sources of inner strength; the role of communication; support groups; issues of self-care, including monitoring drug therapy, getting rest, and getting proper nutrition; **stress management;** working in tandem with the health care team; and accessing help and support. The booklet is illustrated with cartoon line drawings of patients and their families.

- **Chronic Functional Abdominal Pain**

  Source: Camp Hill, PA: Chek-Med Systems, Inc. 199x. [2 p.].

Contact: Available from Chek-Med Systems, Inc. 200 Grandview Avenue, Camp Hill, PA 17011-1706. (800) 451-5797 or (717) 761-1170. Fax (717) 761-0216. PRICE: $22.00 per pack of 50 brochures; 3 pack minimum.

Summary: This patient education brochure describes chronic functional abdominal pain (CFAP), a condition in which there is no disease present in the abdomen but the symptom of pain is due to the abnormal function or physiology of the gastrointestinal (GI) tract and how it relates to the brain. The brochure first describes how the GI tract functions and the interplay between the brain and the gut. The patient with CFAP will usually have had their pain for a very long time. The pain is often a dull achy type rather than sharp or severe enough to go to the hospital emergency room. Other risk factors include multiple previous abdominal surgery, female gender, and a history of physical or sexual abuse in childhood. Features such as weight loss, fever, or rectal bleeding are not present. The primary feature is the presence of very real pain when nothing can be found to explain it. CFAP occurs when signals from the gut reach the outer awareness part of the brain indicating the something is wrong, when, in fact, nothing is wrong. The condition is sometimes called hypergesia. The brochure cautions that it is possible for patients to have CFAP and some other GI disorder; each must be diagnosed and treated individually. In most cases of CFAP, the patient will have undergone extensive medical testing in an effort to determine the cause of the pain. After an accurate diagnosis, the goal of treatment is to gain control of symptoms and to improve the quality of daily life. Treatment includes addressing the connection between mind and body through strategies including **stress management,** hypnosis, and behavioral therapy; and the use of medications, including tricyclic antidepressants and selective serotonin reuptake inhibitors (SSRI). The brochure concludes that by working with the physician, effective control of this problem can usually be developed. 2 figures.

- **Understanding: Irritable Bowel Syndrome**

  Source: Pittsburgh, PA: SmithKline Beecham Consumer Brands. 2003. 4 p.

  Contact: Available from SmithKline Beecham. Consumer Brands, P.O. Box 1467, Pittsburgh, PA 15230. (800) 245-1040. PRICE: Single copy free. Bulk orders available to physicians by calling (800) 233-2426.

  Summary: This patient education brochure provides basic information about irritable bowel syndrome (IBS). Topics include a description of IBS; causes; symptoms; treatment, including **stress management,** diet therapy, and the role of fiber. The brochure concludes with a section about fiber. The brochure, produced by the manufacturers of CITRUCEL, a fiber product, describes the use of CITRUCEL as part of a therapeutic program to manage IBS. 4 references.

- **Physician Within**

  Source: Eden Prairie, MN: Humedico, Inc. 1993. (videocassette).

  Contact: Available from Humedico, Inc. 6440 Flying Cloud Drive, Eden Prairie, MN 55344. (800) 736-7051 or (612) 942-6244. PRICE: $29.95 plus $3.00 shipping (as of 1996).

  Summary: This videotape program uses evocative role playing and storytelling to encourage viewers to reconnect with their inner resources. Topics include well-being, self-image, adaptability, **stress management,** problem solving, support, motivation, and hope. An accompanying workbook helps viewers apply the concepts of the video to their lives. Narrated by author Catherine Feste, the videotape and accompanying reflection and discussion guide are generic to chronic disease. (AA-M).

Healthfinder™

Healthfinder™ is sponsored by the U.S. Department of Health and Human Services and offers links to hundreds of other sites that contain healthcare information. This Web site is located at **http://www.healthfinder.gov**. Again, keyword searches can be used to find guidelines. The following was recently found in this database:

- **Stress Management Briefs**

  Summary: Links to fact sheets that provide information on stress management issues that affect families and individuals in the home, schools and workplace.

  Source: Educational Institution--Follow the Resource URL for More Information

  http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=4113

- **Stress Management—Taking Charge**

  Summary: In many cases, stress is accepted as part of daily life, and people do little to cope with it consciously.

  Source: Centers for Disease Control and Prevention, U.S. Department of Health and Human Services

  http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=6829

- **www.4girls.gov**

  Summary: This site, part of HHS' National Women's Health Information Center, provides girls ages 10-16 with information on fitness, nutrition, stress management, relationships with friends and family, peer

  Source: National Women's Health Information Center, U.S. Public Health Service's Office on Women's Health

  http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=6913

The NIH Search Utility

The NIH search utility allows you to search for documents on over 100 selected Web sites that comprise the NIH-WEB-SPACE. Each of these servers is "crawled" and indexed on an ongoing basis. Your search will produce a list of various documents, all of which will relate in some way to stress management. The drawbacks of this approach are that the information is not organized by theme and that the references are often a mix of information for professionals and patients. Nevertheless, a large number of the listed Web sites provide useful background information. We can only recommend this route, therefore, for relatively rare or specific disorders, or when using highly targeted searches. To use the NIH search utility, visit the following Web page: **http://search.nih.gov/index.html**.

Additional Web Sources

A number of Web sites are available to the public that often link to government sites. These can also point you in the direction of essential information. The following is a representative sample:

- AOL: **http://search.aol.com/cat.adp?id=168&layer=&from=subcats**
- Family Village: **http://www.familyvillage.wisc.edu/specific.htm**
- Google: **http://directory.google.com/Top/Health/Conditions_and_Diseases/**
- Med Help International: **http://www.medhelp.org/HealthTopics/A.html**
- Open Directory Project: **http://dmoz.org/Health/Conditions_and_Diseases/**
- Yahoo.com: **http://dir.yahoo.com/Health/Diseases_and_Conditions/**
- WebMD®Health: **http://my.webmd.com/health_topics**

Finding Associations

There are several Internet directories that provide lists of medical associations with information on or resources relating to stress management. By consulting all of associations listed in this chapter, you will have nearly exhausted all sources for patient associations concerned with stress management.

The National Health Information Center (NHIC)

The National Health Information Center (NHIC) offers a free referral service to help people find organizations that provide information about stress management. For more information, see the NHIC's Web site at **http://www.health.gov/NHIC/** or contact an information specialist by calling 1-800-336-4797.

Directory of Health Organizations

The Directory of Health Organizations, provided by the National Library of Medicine Specialized Information Services, is a comprehensive source of information on associations. The Directory of Health Organizations database can be accessed via the Internet at **http://www.sis.nlm.nih.gov/Dir/DirMain.html**. It is composed of two parts: DIRLINE and Health Hotlines.

The DIRLINE database comprises some 10,000 records of organizations, research centers, and government institutes and associations that primarily focus on health and biomedicine. To access DIRLINE directly, go to the following Web site: **http://dirline.nlm.nih.gov/**. Simply type in "stress management" (or a synonym), and you will receive information on all relevant organizations listed in the database.

Health Hotlines directs you to toll-free numbers to over 300 organizations. You can access this database directly at **http://www.sis.nlm.nih.gov/hotlines/**. On this page, you are given the option to search by keyword or by browsing the subject list. When you have received

your search results, click on the name of the organization for its description and contact information.

The Combined Health Information Database

Another comprehensive source of information on healthcare associations is the Combined Health Information Database. Using the "Detailed Search" option, you will need to limit your search to "Organizations" and "stress management". Type the following hyperlink into your Web browser: **http://chid.nih.gov/detail/detail.html**. To find associations, use the drop boxes at the bottom of the search page where "You may refine your search by." For publication date, select "All Years." Then, select your preferred language and the format option "Organization Resource Sheet." Type "stress management" (or synonyms) into the "For these words:" box. You should check back periodically with this database since it is updated every three months.

The National Organization for Rare Disorders, Inc.

The National Organization for Rare Disorders, Inc. has prepared a Web site that provides, at no charge, lists of associations organized by health topic. You can access this database at the following Web site: **http://www.rarediseases.org/search/orgsearch.html**. Type "stress management" (or a synonym) into the search box, and click "Submit Query."

APPENDIX C. FINDING MEDICAL LIBRARIES

Overview

In this Appendix, we show you how to quickly find a medical library in your area.

Preparation

Your local public library and medical libraries have interlibrary loan programs with the National Library of Medicine (NLM), one of the largest medical collections in the world. According to the NLM, most of the literature in the general and historical collections of the National Library of Medicine is available on interlibrary loan to any library. If you would like to access NLM medical literature, then visit a library in your area that can request the publications for you.[23]

Finding a Local Medical Library

The quickest method to locate medical libraries is to use the Internet-based directory published by the National Network of Libraries of Medicine (NN/LM). This network includes 4626 members and affiliates that provide many services to librarians, health professionals, and the public. To find a library in your area, simply visit **http://nnlm.gov/members/adv.html** or call 1-800-338-7657.

Medical Libraries in the U.S. and Canada

In addition to the NN/LM, the National Library of Medicine (NLM) lists a number of libraries with reference facilities that are open to the public. The following is the NLM's list and includes hyperlinks to each library's Web site. These Web pages can provide information on hours of operation and other restrictions. The list below is a small sample of

[23] Adapted from the NLM: **http://www.nlm.nih.gov/psd/cas/interlibrary.html**.

libraries recommended by the National Library of Medicine (sorted alphabetically by name of the U.S. state or Canadian province where the library is located)[24]:

- **Alabama:** Health InfoNet of Jefferson County (Jefferson County Library Cooperative, Lister Hill Library of the Health Sciences), **http://www.uab.edu/infonet/**
- **Alabama:** Richard M. Scrushy Library (American Sports Medicine Institute)
- **Arizona:** Samaritan Regional Medical Center: The Learning Center (Samaritan Health System, Phoenix, Arizona), **http://www.samaritan.edu/library/bannerlibs.htm**
- **California:** Kris Kelly Health Information Center (St. Joseph Health System, Humboldt), **http://www.humboldt1.com/~kkhic/index.html**
- **California:** Community Health Library of Los Gatos, **http://www.healthlib.org/orgresources.html**
- **California:** Consumer Health Program and Services (CHIPS) (County of Los Angeles Public Library, Los Angeles County Harbor-UCLA Medical Center Library) - Carson, CA, **http://www.colapublib.org/services/chips.html**
- **California:** Gateway Health Library (Sutter Gould Medical Foundation)
- **California:** Health Library (Stanford University Medical Center), **http://www-med.stanford.edu/healthlibrary/**
- **California:** Patient Education Resource Center - Health Information and Resources (University of California, San Francisco), **http://sfghdean.ucsf.edu/barnett/PERC/default.asp**
- **California:** Redwood Health Library (Petaluma Health Care District), **http://www.phcd.org/rdwdlib.html**
- **California:** Los Gatos PlaneTree Health Library, **http://planetreesanjose.org/**
- **California:** Sutter Resource Library (Sutter Hospitals Foundation, Sacramento), **http://suttermedicalcenter.org/library/**
- **California:** Health Sciences Libraries (University of California, Davis), **http://www.lib.ucdavis.edu/healthsci/**
- **California:** ValleyCare Health Library & Ryan Comer Cancer Resource Center (ValleyCare Health System, Pleasanton), **http://gaelnet.stmarys-ca.edu/other.libs/gbal/east/vchl.html**
- **California:** Washington Community Health Resource Library (Fremont), **http://www.healthlibrary.org/**
- **Colorado:** William V. Gervasini Memorial Library (Exempla Healthcare), **http://www.saintjosephdenver.org/yourhealth/libraries/**
- **Connecticut:** Hartford Hospital Health Science Libraries (Hartford Hospital), **http://www.harthosp.org/library/**
- **Connecticut:** Healthnet: Connecticut Consumer Health Information Center (University of Connecticut Health Center, Lyman Maynard Stowe Library), **http://library.uchc.edu/departm/hnet/**

[24] Abstracted from **http://www.nlm.nih.gov/medlineplus/libraries.html**.

- **Connecticut:** Waterbury Hospital Health Center Library (Waterbury Hospital, Waterbury), **http://www.waterburyhospital.com/library/consumer.shtml**
- **Delaware:** Consumer Health Library (Christiana Care Health System, Eugene du Pont Preventive Medicine & Rehabilitation Institute, Wilmington), **http://www.christianacare.org/health_guide/health_guide_pmri_health_info.cfm**
- **Delaware:** Lewis B. Flinn Library (Delaware Academy of Medicine, Wilmington), **http://www.delamed.org/chls.html**
- **Georgia:** Family Resource Library (Medical College of Georgia, Augusta), **http://cmc.mcg.edu/kids_families/fam_resources/fam_res_lib/frl.htm**
- **Georgia:** Health Resource Center (Medical Center of Central Georgia, Macon), **http://www.mccg.org/hrc/hrchome.asp**
- **Hawaii:** Hawaii Medical Library: Consumer Health Information Service (Hawaii Medical Library, Honolulu), **http://hml.org/CHIS/**
- **Idaho:** DeArmond Consumer Health Library (Kootenai Medical Center, Coeur d'Alene), **http://www.nicon.org/DeArmond/index.htm**
- **Illinois:** Health Learning Center of Northwestern Memorial Hospital (Chicago), **http://www.nmh.org/health_info/hlc.html**
- **Illinois:** Medical Library (OSF Saint Francis Medical Center, Peoria), **http://www.osfsaintfrancis.org/general/library/**
- **Kentucky:** Medical Library - Services for Patients, Families, Students & the Public (Central Baptist Hospital, Lexington), **http://www.centralbap.com/education/community/library.cfm**
- **Kentucky:** University of Kentucky - Health Information Library (Chandler Medical Center, Lexington), **http://www.mc.uky.edu/PatientEd/**
- **Louisiana:** Alton Ochsner Medical Foundation Library (Alton Ochsner Medical Foundation, New Orleans), **http://www.ochsner.org/library/**
- **Louisiana:** Louisiana State University Health Sciences Center Medical Library-Shreveport, **http://lib-sh.lsuhsc.edu/**
- **Maine:** Franklin Memorial Hospital Medical Library (Franklin Memorial Hospital, Farmington), **http://www.fchn.org/fmh/lib.htm**
- **Maine:** Gerrish-True Health Sciences Library (Central Maine Medical Center, Lewiston), **http://www.cmmc.org/library/library.html**
- **Maine:** Hadley Parrot Health Science Library (Eastern Maine Healthcare, Bangor), **http://www.emh.org/hll/hpl/guide.htm**
- **Maine:** Maine Medical Center Library (Maine Medical Center, Portland), **http://www.mmc.org/library/**
- **Maine:** Parkview Hospital (Brunswick), **http://www.parkviewhospital.org/**
- **Maine:** Southern Maine Medical Center Health Sciences Library (Southern Maine Medical Center, Biddeford), **http://www.smmc.org/services/service.php3?choice=10**
- **Maine:** Stephens Memorial Hospital's Health Information Library (Western Maine Health, Norway), **http://www.wmhcc.org/Library/**

- **Manitoba, Canada:** Consumer & Patient Health Information Service (University of Manitoba Libraries), **http://www.umanitoba.ca/libraries/units/health/reference/chis.html**
- **Manitoba, Canada:** J.W. Crane Memorial Library (Deer Lodge Centre, Winnipeg), **http://www.deerlodge.mb.ca/crane_library/about.asp**
- **Maryland:** Health Information Center at the Wheaton Regional Library (Montgomery County, Dept. of Public Libraries, Wheaton Regional Library), **http://www.mont.lib.md.us/healthinfo/hic.asp**
- **Massachusetts:** Baystate Medical Center Library (Baystate Health System), **http://www.baystatehealth.com/1024/**
- **Massachusetts:** Boston University Medical Center Alumni Medical Library (Boston University Medical Center), **http://med-libwww.bu.edu/library/lib.html**
- **Massachusetts:** Lowell General Hospital Health Sciences Library (Lowell General Hospital, Lowell), **http://www.lowellgeneral.org/library/HomePageLinks/WWW.htm**
- **Massachusetts:** Paul E. Woodard Health Sciences Library (New England Baptist Hospital, Boston), **http://www.nebh.org/health_lib.asp**
- **Massachusetts:** St. Luke's Hospital Health Sciences Library (St. Luke's Hospital, Southcoast Health System, New Bedford), **http://www.southcoast.org/library/**
- **Massachusetts:** Treadwell Library Consumer Health Reference Center (Massachusetts General Hospital), **http://www.mgh.harvard.edu/library/chrcindex.html**
- **Massachusetts:** UMass HealthNet (University of Massachusetts Medical School, Worchester), **http://healthnet.umassmed.edu/**
- **Michigan:** Botsford General Hospital Library - Consumer Health (Botsford General Hospital, Library & Internet Services), **http://www.botsfordlibrary.org/consumer.htm**
- **Michigan:** Helen DeRoy Medical Library (Providence Hospital and Medical Centers), **http://www.providence-hospital.org/library/**
- **Michigan:** Marquette General Hospital - Consumer Health Library (Marquette General Hospital, Health Information Center), **http://www.mgh.org/center.html**
- **Michigan:** Patient Education Resouce Center - University of Michigan Cancer Center (University of Michigan Comprehensive Cancer Center, Ann Arbor), **http://www.cancer.med.umich.edu/learn/leares.htm**
- **Michigan:** Sladen Library & Center for Health Information Resources - Consumer Health Information (Detroit), **http://www.henryford.com/body.cfm?id=39330**
- **Montana:** Center for Health Information (St. Patrick Hospital and Health Sciences Center, Missoula)
- **National:** Consumer Health Library Directory (Medical Library Association, Consumer and Patient Health Information Section), **http://caphis.mlanet.org/directory/index.html**
- **National:** National Network of Libraries of Medicine (National Library of Medicine) - provides library services for health professionals in the United States who do not have access to a medical library, **http://nnlm.gov/**
- **National:** NN/LM List of Libraries Serving the Public (National Network of Libraries of Medicine), **http://nnlm.gov/members/**

- **Nevada:** Health Science Library, West Charleston Library (Las Vegas-Clark County Library District, Las Vegas), **http://www.lvccld.org/special_collections/medical/index.htm**
- **New Hampshire:** Dartmouth Biomedical Libraries (Dartmouth College Library, Hanover), **http://www.dartmouth.edu/~biomed/resources.htmld/conshealth.htmld/**
- **New Jersey:** Consumer Health Library (Rahway Hospital, Rahway), **http://www.rahwayhospital.com/library.htm**
- **New Jersey:** Dr. Walter Phillips Health Sciences Library (Englewood Hospital and Medical Center, Englewood), **http://www.englewoodhospital.com/links/index.htm**
- **New Jersey:** Meland Foundation (Englewood Hospital and Medical Center, Englewood), **http://www.geocities.com/ResearchTriangle/9360/**
- **New York:** Choices in Health Information (New York Public Library) - NLM Consumer Pilot Project participant, **http://www.nypl.org/branch/health/links.html**
- **New York:** Health Information Center (Upstate Medical University, State University of New York, Syracuse), **http://www.upstate.edu/library/hic/**
- **New York:** Health Sciences Library (Long Island Jewish Medical Center, New Hyde Park), **http://www.lij.edu/library/library.html**
- **New York:** ViaHealth Medical Library (Rochester General Hospital), **http://www.nyam.org/library/**
- **Ohio:** Consumer Health Library (Akron General Medical Center, Medical & Consumer Health Library), **http://www.akrongeneral.org/hwlibrary.htm**
- **Oklahoma:** The Health Information Center at Saint Francis Hospital (Saint Francis Health System, Tulsa), **http://www.sfh-tulsa.com/services/healthinfo.asp**
- **Oregon:** Planetree Health Resource Center (Mid-Columbia Medical Center, The Dalles), **http://www.mcmc.net/phrc/**
- **Pennsylvania:** Community Health Information Library (Milton S. Hershey Medical Center, Hershey), **http://www.hmc.psu.edu/commhealth/**
- **Pennsylvania:** Community Health Resource Library (Geisinger Medical Center, Danville), **http://www.geisinger.edu/education/commlib.shtml**
- **Pennsylvania:** HealthInfo Library (Moses Taylor Hospital, Scranton), **http://www.mth.org/healthwellness.html**
- **Pennsylvania:** Hopwood Library (University of Pittsburgh, Health Sciences Library System, Pittsburgh), **http://www.hsls.pitt.edu/guides/chi/hopwood/index_html**
- **Pennsylvania:** Koop Community Health Information Center (College of Physicians of Philadelphia), **http://www.collphyphil.org/kooppg1.shtml**
- **Pennsylvania:** Learning Resources Center - Medical Library (Susquehanna Health System, Williamsport), **http://www.shscares.org/services/lrc/index.asp**
- **Pennsylvania:** Medical Library (UPMC Health System, Pittsburgh), **http://www.upmc.edu/passavant/library.htm**
- **Quebec, Canada:** Medical Library (Montreal General Hospital), **http://www.mghlib.mcgill.ca/**

- **South Dakota:** Rapid City Regional Hospital Medical Library (Rapid City Regional Hospital), **http://www.rcrh.org/Services/Library/Default.asp**
- **Texas:** Houston HealthWays (Houston Academy of Medicine-Texas Medical Center Library), **http://hhw.library.tmc.edu/**
- **Washington:** Community Health Library (Kittitas Valley Community Hospital), **http://www.kvch.com/**
- **Washington:** Southwest Washington Medical Center Library (Southwest Washington Medical Center, Vancouver), **http://www.swmedicalcenter.com/body.cfm?id=72**

ONLINE GLOSSARIES

The Internet provides access to a number of free-to-use medical dictionaries. The National Library of Medicine has compiled the following list of online dictionaries:

- ADAM Medical Encyclopedia (A.D.A.M., Inc.), comprehensive medical reference: **http://www.nlm.nih.gov/medlineplus/encyclopedia.html**
- MedicineNet.com Medical Dictionary (MedicineNet, Inc.): **http://www.medterms.com/Script/Main/hp.asp**
- Merriam-Webster Medical Dictionary (Inteli-Health, Inc.): **http://www.intelihealth.com/IH/**
- Multilingual Glossary of Technical and Popular Medical Terms in Eight European Languages (European Commission) - Danish, Dutch, English, French, German, Italian, Portuguese, and Spanish: **http://allserv.rug.ac.be/~rvdstich/eugloss/welcome.html**
- On-line Medical Dictionary (CancerWEB): **http://cancerweb.ncl.ac.uk/omd/**
- Rare Diseases Terms (Office of Rare Diseases): **http://ord.aspensys.com/asp/diseases/diseases.asp**
- Technology Glossary (National Library of Medicine) - Health Care Technology: **http://www.nlm.nih.gov/nichsr/ta101/ta10108.htm**

Beyond these, MEDLINEplus contains a very patient-friendly encyclopedia covering every aspect of medicine (licensed from A.D.A.M., Inc.). The ADAM Medical Encyclopedia can be accessed at **http://www.nlm.nih.gov/medlineplus/encyclopedia.html**. ADAM is also available on commercial Web sites such as drkoop.com (**http://www.drkoop.com/**) and Web MD (**http://my.webmd.com/adam/asset/adam_disease_articles/a_to_z/a**). The NIH suggests the following Web sites in the ADAM Medical Encyclopedia when searching for information on stress management:

- **Basic Guidelines for Stress Management**

  Stress management
  Web site: http://www.nlm.nih.gov/medlineplus/ency/article/001942.htm

- **Signs & Symptoms for Stress Management**

  Depression
  Web site: http://www.nlm.nih.gov/medlineplus/ency/article/003213.htm

  Stress
  Web site: http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm

  Tension
  Web site: http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm

- **Background Topics for Stress Management**

  Food guide pyramid
  Web site: http://www.nlm.nih.gov/medlineplus/ency/article/002093.htm

Physical activity
Web site: http://www.nlm.nih.gov/medlineplus/ency/article/001941.htm

Support groups
Web site: http://www.nlm.nih.gov/medlineplus/ency/article/002150.htm

Online Dictionary Directories

The following are additional online directories compiled by the National Library of Medicine, including a number of specialized medical dictionaries:

- Medical Dictionaries: Medical & Biological (World Health Organization): **http://www.who.int/hlt/virtuallibrary/English/diction.htm#Medical**
- MEL-Michigan Electronic Library List of Online Health and Medical Dictionaries (Michigan Electronic Library): **http://mel.lib.mi.us/health/health-dictionaries.html**
- Patient Education: Glossaries (DMOZ Open Directory Project): **http://dmoz.org/Health/Education/Patient_Education/Glossaries/**
- Web of Online Dictionaries (Bucknell University): **http://www.yourdictionary.com/diction5.html#medicine**

STRESS MANAGEMENT DICTIONARY

The definitions below are derived from official public sources, including the National Institutes of Health [NIH] and the European Union [EU].

Abdomen: That portion of the body that lies between the thorax and the pelvis. [NIH]

Abdominal: Having to do with the abdomen, which is the part of the body between the chest and the hips that contains the pancreas, stomach, intestines, liver, gallbladder, and other organs. [NIH]

Abdominal Pain: Sensation of discomfort, distress, or agony in the abdominal region. [NIH]

Aberrant: Wandering or deviating from the usual or normal course. [EU]

Acculturation: Process of cultural change in which one group or members of a group assimilates various cultural patterns from another. [NIH]

Actualization: Possibilities of realizing fully one's personal (e. g. intellectual) potential. [NIH]

Acute Disease: Disease having a short and relatively severe course. [NIH]

Adaptability: Ability to develop some form of tolerance to conditions extremely different from those under which a living organism evolved. [NIH]

Adaptation: 1. The adjustment of an organism to its environment, or the process by which it enhances such fitness. 2. The normal ability of the eye to adjust itself to variations in the intensity of light; the adjustment to such variations. 3. The decline in the frequency of firing of a neuron, particularly of a receptor, under conditions of constant stimulation. 4. In dentistry, (a) the proper fitting of a denture, (b) the degree of proximity and interlocking of restorative material to a tooth preparation, (c) the exact adjustment of bands to teeth. 5. In microbiology, the adjustment of bacterial physiology to a new environment. [EU]

Adenocarcinoma: A malignant epithelial tumor with a glandular organization. [NIH]

Adenosine: A nucleoside that is composed of adenine and d-ribose. Adenosine or adenosine derivatives play many important biological roles in addition to being components of DNA and RNA. Adenosine itself is a neurotransmitter. [NIH]

Adipose Tissue: Connective tissue composed of fat cells lodged in the meshes of areolar tissue. [NIH]

Adjunctive Therapy: Another treatment used together with the primary treatment. Its purpose is to assist the primary treatment. [NIH]

Adjustment: The dynamic process wherein the thoughts, feelings, behavior, and biophysiological mechanisms of the individual continually change to adjust to the environment. [NIH]

Adrenal Cortex: The outer layer of the adrenal gland. It secretes mineralocorticoids, androgens, and glucocorticoids. [NIH]

Adrenal Medulla: The inner part of the adrenal gland; it synthesizes, stores and releases catecholamines. [NIH]

Adrenaline: A hormone. Also called epinephrine. [NIH]

Adrenergic: Activated by, characteristic of, or secreting epinephrine or substances with similar activity; the term is applied to those nerve fibres that liberate norepinephrine at a synapse when a nerve impulse passes, i.e., the sympathetic fibres. [EU]

Adverse Effect: An unwanted side effect of treatment. [NIH]

Aerobic: In biochemistry, reactions that need oxygen to happen or happen when oxygen is present. [NIH]

Aerobic Exercise: A type of physical activity that includes walking, jogging, running, and dancing. Aerobic training improves the efficiency of the aerobic energy-producing systems that can improve cardiorespiratory endurance. [NIH]

Affinity: 1. Inherent likeness or relationship. 2. A special attraction for a specific element, organ, or structure. 3. Chemical affinity; the force that binds atoms in molecules; the tendency of substances to combine by chemical reaction. 4. The strength of noncovalent chemical binding between two substances as measured by the dissociation constant of the complex. 5. In immunology, a thermodynamic expression of the strength of interaction between a single antigen-binding site and a single antigenic determinant (and thus of the stereochemical compatibility between them), most accurately applied to interactions among simple, uniform antigenic determinants such as haptens. Expressed as the association constant (K litres mole -1), which, owing to the heterogeneity of affinities in a population of antibody molecules of a given specificity, actually represents an average value (mean intrinsic association constant). 6. The reciprocal of the dissociation constant. [EU]

Age Groups: Persons classified by age from birth (infant, newborn) to octogenarians and older (aged, 80 and over). [NIH]

Age of Onset: The age or period of life at which a disease or the initial symptoms or manifestations of a disease appear in an individual. [NIH]

Aged, 80 and Over: A person 80 years of age and older. [NIH]

Agonist: In anatomy, a prime mover. In pharmacology, a drug that has affinity for and stimulates physiologic activity at cell receptors normally stimulated by naturally occurring substances. [EU]

Algorithms: A procedure consisting of a sequence of algebraic formulas and/or logical steps to calculate or determine a given task. [NIH]

Alimentary: Pertaining to food or nutritive material, or to the organs of digestion. [EU]

Alkaloid: A member of a large group of chemicals that are made by plants and have nitrogen in them. Some alkaloids have been shown to work against cancer. [NIH]

Alleles: Mutually exclusive forms of the same gene, occupying the same locus on homologous chromosomes, and governing the same biochemical and developmental process. [NIH]

Allergen: An antigenic substance capable of producing immediate-type hypersensitivity (allergy). [EU]

Alpha Particles: Positively charged particles composed of two protons and two neutrons, i.e., helium nuclei, emitted during disintegration of very heavy isotopes; a beam of alpha particles or an alpha ray has very strong ionizing power, but weak penetrability. [NIH]

Alternative medicine: Practices not generally recognized by the medical community as standard or conventional medical approaches and used instead of standard treatments. Alternative medicine includes the taking of dietary supplements, megadose vitamins, and herbal preparations; the drinking of special teas; and practices such as massage therapy, magnet therapy, spiritual healing, and meditation. [NIH]

Aluminum: A metallic element that has the atomic number 13, atomic symbol Al, and atomic weight 26.98. [NIH]

Amino Acid Sequence: The order of amino acids as they occur in a polypeptide chain. This is referred to as the primary structure of proteins. It is of fundamental importance in determining protein conformation. [NIH]

Amino Acids: Organic compounds that generally contain an amino (-NH2) and a carboxyl (-COOH) group. Twenty alpha-amino acids are the subunits which are polymerized to form proteins. [NIH]

Amino Acids: Organic compounds that generally contain an amino (-NH2) and a carboxyl (-COOH) group. Twenty alpha-amino acids are the subunits which are polymerized to form proteins. [NIH]

Amplification: The production of additional copies of a chromosomal DNA sequence, found as either intrachromosomal or extrachromosomal DNA. [NIH]

Anaesthesia: Loss of feeling or sensation. Although the term is used for loss of tactile sensibility, or of any of the other senses, it is applied especially to loss of the sensation of pain, as it is induced to permit performance of surgery or other painful procedures. [EU]

Anal: Having to do with the anus, which is the posterior opening of the large bowel. [NIH]

Analgesic: An agent that alleviates pain without causing loss of consciousness. [EU]

Analysis of Variance: A statistical technique that isolates and assesses the contributions of categorical independent variables to variation in the mean of a continuous dependent variable. [NIH]

Anaphylatoxins: The family of peptides C3a, C4a, C5a, and C5a des-arginine produced in the serum during complement activation. They produce smooth muscle contraction, mast cell histamine release, affect platelet aggregation, and act as mediators of the local inflammatory process. The order of anaphylatoxin activity from strongest to weakest is C5a, C3a, C4a, and C5a des-arginine. The latter is the so-called "classical" anaphylatoxin but shows no spasmogenic activity though it contains some chemotactic ability. [NIH]

Anatomical: Pertaining to anatomy, or to the structure of the organism. [EU]

Anemia: A reduction in the number of circulating erythrocytes or in the quantity of hemoglobin. [NIH]

Anesthetics: Agents that are capable of inducing a total or partial loss of sensation, especially tactile sensation and pain. They may act to induce general anesthesia, in which an unconscious state is achieved, or may act locally to induce numbness or lack of sensation at a targeted site. [NIH]

Angina: Chest pain that originates in the heart. [NIH]

Angina Pectoris: The symptom of paroxysmal pain consequent to myocardial ischemia usually of distinctive character, location and radiation, and provoked by a transient stressful situation during which the oxygen requirements of the myocardium exceed the capacity of the coronary circulation to supply it. [NIH]

Animal model: An animal with a disease either the same as or like a disease in humans. Animal models are used to study the development and progression of diseases and to test new treatments before they are given to humans. Animals with transplanted human cancers or other tissues are called xenograft models. [NIH]

Annealing: The spontaneous alignment of two single DNA strands to form a double helix. [NIH]

Antecedent: Existing or occurring before in time or order often with consequential effects. [EU]

Antibacterial: A substance that destroys bacteria or suppresses their growth or reproduction. [EU]

Antibiotic: A drug used to treat infections caused by bacteria and other microorganisms. [NIH]

Antibodies: Immunoglobulin molecules having a specific amino acid sequence by virtue of which they interact only with the antigen that induced their synthesis in cells of the lymphoid series (especially plasma cells), or with an antigen closely related to it. [NIH]

Antibody: A type of protein made by certain white blood cells in response to a foreign substance (antigen). Each antibody can bind to only a specific antigen. The purpose of this binding is to help destroy the antigen. Antibodies can work in several ways, depending on the nature of the antigen. Some antibodies destroy antigens directly. Others make it easier for white blood cells to destroy the antigen. [NIH]

Anticonvulsant: An agent that prevents or relieves convulsions. [EU]

Antidepressant: A drug used to treat depression. [NIH]

Antigen: Any substance which is capable, under appropriate conditions, of inducing a specific immune response and of reacting with the products of that response, that is, with specific antibody or specifically sensitized T-lymphocytes, or both. Antigens may be soluble substances, such as toxins and foreign proteins, or particulate, such as bacteria and tissue cells; however, only the portion of the protein or polysaccharide molecule known as the antigenic determinant (q.v.) combines with antibody or a specific receptor on a lymphocyte. Abbreviated Ag. [EU]

Antigen-Antibody Complex: The complex formed by the binding of antigen and antibody molecules. The deposition of large antigen-antibody complexes leading to tissue damage causes immune complex diseases. [NIH]

Anti-inflammatory: Having to do with reducing inflammation. [NIH]

Antioxidant: A substance that prevents damage caused by free radicals. Free radicals are highly reactive chemicals that often contain oxygen. They are produced when molecules are split to give products that have unpaired electrons. This process is called oxidation. [NIH]

Anus: The opening of the rectum to the outside of the body. [NIH]

Anxiety: Persistent feeling of dread, apprehension, and impending disaster. [NIH]

Anxiety Disorders: Disorders in which anxiety (persistent feelings of apprehension, tension, or uneasiness) is the predominant disturbance. [NIH]

Anxiolytic: An anxiolytic or antianxiety agent. [EU]

Aorta: The main trunk of the systemic arteries. [NIH]

Apoptosis: One of the two mechanisms by which cell death occurs (the other being the pathological process of necrosis). Apoptosis is the mechanism responsible for the physiological deletion of cells and appears to be intrinsically programmed. It is characterized by distinctive morphologic changes in the nucleus and cytoplasm, chromatin cleavage at regularly spaced sites, and the endonucleolytic cleavage of genomic DNA (DNA fragmentation) at internucleosomal sites. This mode of cell death serves as a balance to mitosis in regulating the size of animal tissues and in mediating pathologic processes associated with tumor growth. [NIH]

Applicability: A list of the commodities to which the candidate method can be applied as presented or with minor modifications. [NIH]

Aqueous: Having to do with water. [NIH]

Arrhythmia: Any variation from the normal rhythm or rate of the heart beat. [NIH]

Art Therapy: The use of art as an adjunctive therapy in the treatment of neurological, mental, or behavioral disorders. [NIH]

Arterial: Pertaining to an artery or to the arteries. [EU]

Arterial embolization: The blocking of an artery by a clot of foreign material. This can be

done as treatment to block the flow of blood to a tumor. [NIH]

Arteries: The vessels carrying blood away from the heart. [NIH]

Arterioles: The smallest divisions of the arteries located between the muscular arteries and the capillaries. [NIH]

Aspiration: The act of inhaling. [NIH]

Assay: Determination of the amount of a particular constituent of a mixture, or of the biological or pharmacological potency of a drug. [EU]

Astigmatism: A condition in which the surface of the cornea is not spherical; causes a blurred image to be received at the retina. [NIH]

Atopic: Pertaining to an atopen or to atopy; allergic. [EU]

Atrial: Pertaining to an atrium. [EU]

Atrioventricular: Pertaining to an atrium of the heart and to a ventricle. [EU]

Atrium: A chamber; used in anatomical nomenclature to designate a chamber affording entrance to another structure or organ. Usually used alone to designate an atrium of the heart. [EU]

Atypical: Irregular; not conformable to the type; in microbiology, applied specifically to strains of unusual type. [EU]

Audiology: The study of hearing and hearing impairment. [NIH]

Autoimmune disease: A condition in which the body recognizes its own tissues as foreign and directs an immune response against them. [NIH]

Autonomic: Self-controlling; functionally independent. [EU]

Autonomic Nervous System: The enteric, parasympathetic, and sympathetic nervous systems taken together. Generally speaking, the autonomic nervous system regulates the internal environment during both peaceful activity and physical or emotional stress. Autonomic activity is controlled and integrated by the central nervous system, especially the hypothalamus and the solitary nucleus, which receive information relayed from visceral afferents; these and related central and sensory structures are sometimes (but not here) considered to be part of the autonomic nervous system itself. [NIH]

Bacteria: Unicellular prokaryotic microorganisms which generally possess rigid cell walls, multiply by cell division, and exhibit three principal forms: round or coccal, rodlike or bacillary, and spiral or spirochetal. [NIH]

Bacterial Physiology: Physiological processes and activities of bacteria. [NIH]

Bacterium: Microscopic organism which may have a spherical, rod-like, or spiral unicellular or non-cellular body. Bacteria usually reproduce through asexual processes. [NIH]

Basal cells: Small, round cells found in the lower part (or base) of the epidermis, the outer layer of the skin. [NIH]

Base: In chemistry, the nonacid part of a salt; a substance that combines with acids to form salts; a substance that dissociates to give hydroxide ions in aqueous solutions; a substance whose molecule or ion can combine with a proton (hydrogen ion); a substance capable of donating a pair of electrons (to an acid) for the formation of a coordinate covalent bond. [EU]

Base Sequence: The sequence of purines and pyrimidines in nucleic acids and polynucleotides. It is also called nucleotide or nucleoside sequence. [NIH]

Behavior Therapy: The application of modern theories of learning and conditioning in the treatment of behavior disorders. [NIH]

Behavioral Medicine: The interdisciplinary field concerned with the development and

integration of behavioral and biomedical science, knowledge, and techniques relevant to health and illness and the application of this knowledge and these techniques to prevention, diagnosis, treatment, and rehabilitation. [NIH]

Benign: Not cancerous; does not invade nearby tissue or spread to other parts of the body. [NIH]

Bereavement: Refers to the whole process of grieving and mourning and is associated with a deep sense of loss and sadness. [NIH]

Beta-Endorphin: A peptide consisting of amino acid sequence 61-91 of the endogenous pituitary hormone beta-lipotropin. The first four amino acids show a common tetrapeptide sequence with methionine- and leucine enkephalin. The compound shows opiate-like activity. Injection of beta-endorphin induces a profound analgesia of the whole body for several hours. This action is reversed after administration of naloxone. [NIH]

Bile: An emulsifying agent produced in the liver and secreted into the duodenum. Its composition includes bile acids and salts, cholesterol, and electrolytes. It aids digestion of fats in the duodenum. [NIH]

Biochemical: Relating to biochemistry; characterized by, produced by, or involving chemical reactions in living organisms. [EU]

Biological response modifier: BRM. A substance that stimulates the body's response to infection and disease. [NIH]

Biological Transport: The movement of materials (including biochemical substances and drugs) across cell membranes and epithelial layers, usually by passive diffusion. [NIH]

Biomarkers: Substances sometimes found in an increased amount in the blood, other body fluids, or tissues and that may suggest the presence of some types of cancer. Biomarkers include CA 125 (ovarian cancer), CA 15-3 (breast cancer), CEA (ovarian, lung, breast, pancreas, and GI tract cancers), and PSA (prostate cancer). Also called tumor markers. [NIH]

Biotechnology: Body of knowledge related to the use of organisms, cells or cell-derived constituents for the purpose of developing products which are technically, scientifically and clinically useful. Alteration of biologic function at the molecular level (i.e., genetic engineering) is a central focus; laboratory methods used include transfection and cloning technologies, sequence and structure analysis algorithms, computer databases, and gene and protein structure function analysis and prediction. [NIH]

Bladder: The organ that stores urine. [NIH]

Bloating: Fullness or swelling in the abdomen that often occurs after meals. [NIH]

Blood Glucose: Glucose in blood. [NIH]

Blood Platelets: Non-nucleated disk-shaped cells formed in the megakaryocyte and found in the blood of all mammals. They are mainly involved in blood coagulation. [NIH]

Blood pressure: The pressure of blood against the walls of a blood vessel or heart chamber. Unless there is reference to another location, such as the pulmonary artery or one of the heart chambers, it refers to the pressure in the systemic arteries, as measured, for example, in the forearm. [NIH]

Blood vessel: A tube in the body through which blood circulates. Blood vessels include a network of arteries, arterioles, capillaries, venules, and veins. [NIH]

Blood Volume: Volume of circulating blood. It is the sum of the plasma volume and erythrocyte volume. [NIH]

Blood-Brain Barrier: Specialized non-fenestrated tightly-joined endothelial cells (tight junctions) that form a transport barrier for certain substances between the cerebral

capillaries and the brain tissue. [NIH]

Body Fluids: Liquid components of living organisms. [NIH]

Body Image: Individuals' personal concept of their bodies as objects in and bound by space, independently and apart from all other objects. [NIH]

Body Mass Index: One of the anthropometric measures of body mass; it has the highest correlation with skinfold thickness or body density. [NIH]

Bone Marrow: The soft tissue filling the cavities of bones. Bone marrow exists in two types, yellow and red. Yellow marrow is found in the large cavities of large bones and consists mostly of fat cells and a few primitive blood cells. Red marrow is a hematopoietic tissue and is the site of production of erythrocytes and granular leukocytes. Bone marrow is made up of a framework of connective tissue containing branching fibers with the frame being filled with marrow cells. [NIH]

Bone marrow aspiration: The removal of a small sample of bone marrow (usually from the hip) through a needle for examination under a microscope. [NIH]

Bowel: The long tube-shaped organ in the abdomen that completes the process of digestion. There is both a small and a large bowel. Also called the intestine. [NIH]

Bowel Movement: Body wastes passed through the rectum and anus. [NIH]

Brachytherapy: A collective term for interstitial, intracavity, and surface radiotherapy. It uses small sealed or partly-sealed sources that may be placed on or near the body surface or within a natural body cavity or implanted directly into the tissues. [NIH]

Branch: Most commonly used for branches of nerves, but applied also to other structures. [NIH]

Breakdown: A physical, metal, or nervous collapse. [NIH]

Bronchi: The larger air passages of the lungs arising from the terminal bifurcation of the trachea. [NIH]

Buffers: A chemical system that functions to control the levels of specific ions in solution. When the level of hydrogen ion in solution is controlled the system is called a pH buffer. [NIH]

Bulimia: Episodic binge eating. The episodes may be associated with the fear of not being able to stop eating, depressed mood, or self-deprecating thoughts (binge-eating disorder) and may frequently be terminated by self-induced vomiting (bulimia nervosa). [NIH]

Bypass: A surgical procedure in which the doctor creates a new pathway for the flow of body fluids. [NIH]

Calcium: A basic element found in nearly all organized tissues. It is a member of the alkaline earth family of metals with the atomic symbol Ca, atomic number 20, and atomic weight 40. Calcium is the most abundant mineral in the body and combines with phosphorus to form calcium phosphate in the bones and teeth. It is essential for the normal functioning of nerves and muscles and plays a role in blood coagulation (as factor IV) and in many enzymatic processes. [NIH]

Cancer Care Facilities: Institutions specializing in the care of cancer patients. [NIH]

Candidiasis: Infection with a fungus of the genus Candida. It is usually a superficial infection of the moist cutaneous areas of the body, and is generally caused by C. albicans; it most commonly involves the skin (dermatocandidiasis), oral mucous membranes (thrush, def. 1), respiratory tract (bronchocandidiasis), and vagina (vaginitis). Rarely there is a systemic infection or endocarditis. Called also moniliasis, candidosis, oidiomycosis, and formerly blastodendriosis. [EU]

Candidosis: An infection caused by an opportunistic yeasts that tends to proliferate and become pathologic when the environment is favorable and the host resistance is weakened. [NIH]

Carbohydrate: An aldehyde or ketone derivative of a polyhydric alcohol, particularly of the pentahydric and hexahydric alcohols. They are so named because the hydrogen and oxygen are usually in the proportion to form water, (CH2O)n. The most important carbohydrates are the starches, sugars, celluloses, and gums. They are classified into mono-, di-, tri-, poly- and heterosaccharides. [EU]

Carbon Dioxide: A colorless, odorless gas that can be formed by the body and is necessary for the respiration cycle of plants and animals. [NIH]

Carcinogenic: Producing carcinoma. [EU]

Carcinoma: Cancer that begins in the skin or in tissues that line or cover internal organs. [NIH]

Cardiac: Having to do with the heart. [NIH]

Cardiac catheterization: A procedure in which a thin, hollow tube is inserted into a blood vessel. The tube is then advanced through the vessel into the heart, enabling a physician to study the heart and its pumping activity. [NIH]

Cardiac Output: The volume of blood passing through the heart per unit of time. It is usually expressed as liters (volume) per minute so as not to be confused with stroke volume (volume per beat). [NIH]

Cardiorespiratory: Relating to the heart and lungs and their function. [EU]

Cardioselective: Having greater activity on heart tissue than on other tissue. [EU]

Cardiovascular: Having to do with the heart and blood vessels. [NIH]

Cardiovascular disease: Any abnormal condition characterized by dysfunction of the heart and blood vessels. CVD includes atherosclerosis (especially coronary heart disease, which can lead to heart attacks), cerebrovascular disease (e.g., stroke), and hypertension (high blood pressure). [NIH]

Case report: A detailed report of the diagnosis, treatment, and follow-up of an individual patient. Case reports also contain some demographic information about the patient (for example, age, gender, ethnic origin). [NIH]

Case series: A group or series of case reports involving patients who were given similar treatment. Reports of case series usually contain detailed information about the individual patients. This includes demographic information (for example, age, gender, ethnic origin) and information on diagnosis, treatment, response to treatment, and follow-up after treatment. [NIH]

Catecholamine: A group of chemical substances manufactured by the adrenal medulla and secreted during physiological stress. [NIH]

Cathode: An electrode, usually an incandescent filament of tungsten, which emits electrons in an X-ray tube. [NIH]

Causal: Pertaining to a cause; directed against a cause. [EU]

Cause of Death: Factors which produce cessation of all vital bodily functions. They can be analyzed from an epidemiologic viewpoint. [NIH]

Cell: The individual unit that makes up all of the tissues of the body. All living things are made up of one or more cells. [NIH]

Cell Count: A count of the number of cells of a specific kind, usually measured per unit volume of sample. [NIH]

Cell Death: The termination of the cell's ability to carry out vital functions such as metabolism, growth, reproduction, responsiveness, and adaptability. [NIH]

Cell Respiration: The metabolic process of all living cells (animal and plant) in which oxygen is used to provide a source of energy for the cell. [NIH]

Central Nervous System: The main information-processing organs of the nervous system, consisting of the brain, spinal cord, and meninges. [NIH]

Central Nervous System Infections: Pathogenic infections of the brain, spinal cord, and meninges. DNA virus infections; RNA virus infections; bacterial infections; mycoplasma infections; Spirochaetales infections; fungal infections; protozoan infections; helminthiasis; and prion diseases may involve the central nervous system as a primary or secondary process. [NIH]

Cerebral: Of or pertaining of the cerebrum or the brain. [EU]

Cerebral Palsy: Refers to a motor disability caused by a brain dysfunction. [NIH]

Cerebrospinal: Pertaining to the brain and spinal cord. [EU]

Cerebrospinal fluid: CSF. The fluid flowing around the brain and spinal cord. Cerebrospinal fluid is produced in the ventricles in the brain. [NIH]

Cerebrovascular: Pertaining to the blood vessels of the cerebrum, or brain. [EU]

Cerebrum: The largest part of the brain. It is divided into two hemispheres, or halves, called the cerebral hemispheres. The cerebrum controls muscle functions of the body and also controls speech, emotions, reading, writing, and learning. [NIH]

Cervical: Relating to the neck, or to the neck of any organ or structure. Cervical lymph nodes are located in the neck; cervical cancer refers to cancer of the uterine cervix, which is the lower, narrow end (the "neck") of the uterus. [NIH]

Cervix: The lower, narrow end of the uterus that forms a canal between the uterus and vagina. [NIH]

Chemotactic Factors: Chemical substances that attract or repel cells or organisms. The concept denotes especially those factors released as a result of tissue injury, invasion, or immunologic activity, that attract leukocytes, macrophages, or other cells to the site of infection or insult. [NIH]

Chemotherapy: Treatment with anticancer drugs. [NIH]

Chest Pain: Pressure, burning, or numbness in the chest. [NIH]

Child Care: Care of children in the home or institution. [NIH]

Chiropractic: A system of treating bodily disorders by manipulation of the spine and other parts, based on the belief that the cause is the abnormal functioning of a nerve. [NIH]

Chlorine: A greenish-yellow, diatomic gas that is a member of the halogen family of elements. It has the atomic symbol Cl, atomic number 17, and atomic weight 70.906. It is a powerful irritant that can cause fatal pulmonary edema. Chlorine is used in manufacturing, as a reagent in synthetic chemistry, for water purification, and in the production of chlorinated lime, which is used in fabric bleaching. [NIH]

Cholesterol: The principal sterol of all higher animals, distributed in body tissues, especially the brain and spinal cord, and in animal fats and oils. [NIH]

Cholinergic: Resembling acetylcholine in pharmacological action; stimulated by or releasing acetylcholine or a related compound. [EU]

Chorda Tympani Nerve: A branch of the facial (7th cranial) nerve which passes through the middle ear and continues through the petrotympanic fissure. The chorda tympani nerve

carries taste sensation from the anterior two-thirds of the tongue and conveys parasympathetic efferents to the salivary glands. [NIH]

Chromaffin System: The cells of the body which stain with chromium salts. They occur along the sympathetic nerves, in the adrenal gland, and in various other organs. [NIH]

Chromatin: The material of chromosomes. It is a complex of DNA, histones, and nonhistone proteins (chromosomal proteins, non-histone) found within the nucleus of a cell. [NIH]

Chromosomal: Pertaining to chromosomes. [EU]

Chromosome: Part of a cell that contains genetic information. Except for sperm and eggs, all human cells contain 46 chromosomes. [NIH]

Chronic: A disease or condition that persists or progresses over a long period of time. [NIH]

Chronic Disease: Disease or ailment of long duration. [NIH]

Circulatory system: The system that contains the heart and the blood vessels and moves blood throughout the body. This system helps tissues get enough oxygen and nutrients, and it helps them get rid of waste products. The lymph system, which connects with the blood system, is often considered part of the circulatory system. [NIH]

Citalopram: A selective neuronal serotonin reuptake inhibitor and a clinically effective antidepressant with tolerable side effects. The drug is also effective in reducing ethanol uptake in alcoholics and is used in depressed patients who also suffer from tardive dyskinesia (TD) in preference to tricyclic antidepressants, which aggravate this condition. [NIH]

Clinical study: A research study in which patients receive treatment in a clinic or other medical facility. Reports of clinical studies can contain results for single patients (case reports) or many patients (case series or clinical trials). [NIH]

Clinical trial: A research study that tests how well new medical treatments or other interventions work in people. Each study is designed to test new methods of screening, prevention, diagnosis, or treatment of a disease. [NIH]

Cloning: The production of a number of genetically identical individuals; in genetic engineering, a process for the efficient replication of a great number of identical DNA molecules. [NIH]

Cochlear: Of or pertaining to the cochlea. [EU]

Cochlear Diseases: Diseases of the cochlea, the part of the inner ear that is concerned with hearing. [NIH]

Codon: A set of three nucleotides in a protein coding sequence that specifies individual amino acids or a termination signal (codon, terminator). Most codons are universal, but some organisms do not produce the transfer RNAs (RNA, transfer) complementary to all codons. These codons are referred to as unassigned codons (codons, nonsense). [NIH]

Cofactor: A substance, microorganism or environmental factor that activates or enhances the action of another entity such as a disease-causing agent. [NIH]

Cognition: Intellectual or mental process whereby an organism becomes aware of or obtains knowledge. [NIH]

Cognitive behavior therapy: A system of psychotherapy based on the premise that distorted or dysfunctional thinking, which influences a person's mood or behavior, is common to all psychosocial problems. The focus of therapy is to identify the distorted thinking and to replace it with more rational, adaptive thoughts and beliefs. [NIH]

Cognitive restructuring: A method of identifying and replacing fear-promoting, irrational beliefs with more realistic and functional ones. [NIH]

Cognitive Therapy: A direct form of psychotherapy based on the interpretation of situations (cognitive structure of experiences) that determine how an individual feels and behaves. It is based on the premise that cognition, the process of acquiring knowledge and forming beliefs, is a primary determinant of mood and behavior. The therapy uses behavioral and verbal techniques to identify and correct negative thinking that is at the root of the aberrant behavior. [NIH]

Colitis: Inflammation of the colon. [NIH]

Collagen: A polypeptide substance comprising about one third of the total protein in mammalian organisms. It is the main constituent of skin, connective tissue, and the organic substance of bones and teeth. Different forms of collagen are produced in the body but all consist of three alpha-polypeptide chains arranged in a triple helix. Collagen is differentiated from other fibrous proteins, such as elastin, by the content of proline, hydroxyproline, and hydroxylysine; by the absence of tryptophan; and particularly by the high content of polar groups which are responsible for its swelling properties. [NIH]

Collapse: 1. A state of extreme prostration and depression, with failure of circulation. 2. Abnormal falling in of the walls of any part of organ. [EU]

Colorectal: Having to do with the colon or the rectum. [NIH]

Colorectal Cancer: Cancer that occurs in the colon (large intestine) or the rectum (the end of the large intestine). A number of digestive diseases may increase a person's risk of colorectal cancer, including polyposis and Zollinger-Ellison Syndrome. [NIH]

Colposcopy: The examination, therapy or surgery of the cervix and vagina by means of a specially designed endoscope introduced vaginally. [NIH]

Communicable disease: A disease that can be transmitted by contact between persons. [NIH]

Complement: A term originally used to refer to the heat-labile factor in serum that causes immune cytolysis, the lysis of antibody-coated cells, and now referring to the entire functionally related system comprising at least 20 distinct serum proteins that is the effector not only of immune cytolysis but also of other biologic functions. Complement activation occurs by two different sequences, the classic and alternative pathways. The proteins of the classic pathway are termed 'components of complement' and are designated by the symbols C1 through C9. C1 is a calcium-dependent complex of three distinct proteins C1q, C1r and C1s. The proteins of the alternative pathway (collectively referred to as the properdin system) and complement regulatory proteins are known by semisystematic or trivial names. Fragments resulting from proteolytic cleavage of complement proteins are designated with lower-case letter suffixes, e.g., C3a. Inactivated fragments may be designated with the suffix 'i', e.g. C3bi. Activated components or complexes with biological activity are designated by a bar over the symbol e.g. C1 or C4b,2a. The classic pathway is activated by the binding of C1 to classic pathway activators, primarily antigen-antibody complexes containing IgM, IgG1, IgG3; C1q binds to a single IgM molecule or two adjacent IgG molecules. The alternative pathway can be activated by IgA immune complexes and also by nonimmunologic materials including bacterial endotoxins, microbial polysaccharides, and cell walls. Activation of the classic pathway triggers an enzymatic cascade involving C1, C4, C2 and C3; activation of the alternative pathway triggers a cascade involving C3 and factors B, D and P. Both result in the cleavage of C5 and the formation of the membrane attack complex. Complement activation also results in the formation of many biologically active complement fragments that act as anaphylatoxins, opsonins, or chemotactic factors. [EU]

Complementary and alternative medicine: CAM. Forms of treatment that are used in addition to (complementary) or instead of (alternative) standard treatments. These practices are not considered standard medical approaches. CAM includes dietary supplements, megadose vitamins, herbal preparations, special teas, massage therapy, magnet therapy,

spiritual healing, and meditation. [NIH]

Complementary medicine: Practices not generally recognized by the medical community as standard or conventional medical approaches and used to enhance or complement the standard treatments. Complementary medicine includes the taking of dietary supplements, megadose vitamins, and herbal preparations; the drinking of special teas; and practices such as massage therapy, magnet therapy, spiritual healing, and meditation. [NIH]

Complete remission: The disappearance of all signs of cancer. Also called a complete response. [NIH]

Computational Biology: A field of biology concerned with the development of techniques for the collection and manipulation of biological data, and the use of such data to make biological discoveries or predictions. This field encompasses all computational methods and theories applicable to molecular biology and areas of computer-based techniques for solving biological problems including manipulation of models and datasets. [NIH]

Concentric: Having a common center of curvature or symmetry. [NIH]

Concomitant: Accompanying; accessory; joined with another. [EU]

Condoms: A sheath that is worn over the penis during sexual behavior in order to prevent pregnancy or spread of sexually transmitted disease. [NIH]

Confounding: Extraneous variables resulting in outcome effects that obscure or exaggerate the "true" effect of an intervention. [NIH]

Confusion: A mental state characterized by bewilderment, emotional disturbance, lack of clear thinking, and perceptual disorientation. [NIH]

Congestive heart failure: Weakness of the heart muscle that leads to a buildup of fluid in body tissues. [NIH]

Connective Tissue: Tissue that supports and binds other tissues. It consists of connective tissue cells embedded in a large amount of extracellular matrix. [NIH]

Connective Tissue: Tissue that supports and binds other tissues. It consists of connective tissue cells embedded in a large amount of extracellular matrix. [NIH]

Consciousness: Sense of awareness of self and of the environment. [NIH]

Consolidation: The healing process of a bone fracture. [NIH]

Constipation: Infrequent or difficult evacuation of feces. [NIH]

Constriction: The act of constricting. [NIH]

Consultation: A deliberation between two or more physicians concerning the diagnosis and the proper method of treatment in a case. [NIH]

Consumption: Pulmonary tuberculosis. [NIH]

Contraindications: Any factor or sign that it is unwise to pursue a certain kind of action or treatment, e. g. giving a general anesthetic to a person with pneumonia. [NIH]

Control group: In a clinical trial, the group that does not receive the new treatment being studied. This group is compared to the group that receives the new treatment, to see if the new treatment works. [NIH]

Controlled clinical trial: A clinical study that includes a comparison (control) group. The comparison group receives a placebo, another treatment, or no treatment at all. [NIH]

Controlled study: An experiment or clinical trial that includes a comparison (control) group. [NIH]

Coordination: Muscular or motor regulation or the harmonious cooperation of muscles or groups of muscles, in a complex action or series of actions. [NIH]

Cor: The muscular organ that maintains the circulation of the blood. c. adiposum a heart that has undergone fatty degeneration or that has an accumulation of fat around it; called also fat or fatty, heart. c. arteriosum the left side of the heart, so called because it contains oxygenated (arterial) blood. c. biloculare a congenital anomaly characterized by failure of formation of the atrial and ventricular septums, the heart having only two chambers, a single atrium and a single ventricle, and a common atrioventricular valve. c. bovinum (L. 'ox heart') a greatly enlarged heart due to a hypertrophied left ventricle; called also c. taurinum and bucardia. c. dextrum (L. 'right heart') the right atrium and ventricle. c. hirsutum, c. villosum. c. mobile (obs.) an abnormally movable heart. c. pendulum a heart so movable that it seems to be hanging by the great blood vessels. c. pseudotriloculare biatriatum a congenital cardiac anomaly in which the heart functions as a three-chambered heart because of tricuspid atresia, the right ventricle being extremely small or rudimentary and the right atrium greatly dilated. Blood passes from the right to the left atrium and thence disease due to pulmonary hypertension secondary to disease of the lung, or its blood vessels, with hypertrophy of the right ventricle. [EU]

Coronary: Encircling in the manner of a crown; a term applied to vessels; nerves, ligaments, etc. The term usually denotes the arteries that supply the heart muscle and, by extension, a pathologic involvement of them. [EU]

Coronary Arteriosclerosis: Thickening and loss of elasticity of the coronary arteries. [NIH]

Coronary Artery Bypass: Surgical therapy of ischemic coronary artery disease achieved by grafting a section of saphenous vein, internal mammary artery, or other substitute between the aorta and the obstructed coronary artery distal to the obstructive lesion. [NIH]

Coronary heart disease: A type of heart disease caused by narrowing of the coronary arteries that feed the heart, which needs a constant supply of oxygen and nutrients carried by the blood in the coronary arteries. When the coronary arteries become narrowed or clogged by fat and cholesterol deposits and cannot supply enough blood to the heart, CHD results. [NIH]

Coronary Thrombosis: Presence of a thrombus in a coronary artery, often causing a myocardial infarction. [NIH]

Corrosion: Irreversible destruction of skin tissue. [NIH]

Corticosteroids: Hormones that have antitumor activity in lymphomas and lymphoid leukemias; in addition, corticosteroids (steroids) may be used for hormone replacement and for the management of some of the complications of cancer and its treatment. [NIH]

Corticotropin-Releasing Hormone: A neuropeptide released by the hypothalamus that stimulates the release of corticotropin by the anterior pituitary gland. [NIH]

Cortisol: A steroid hormone secreted by the adrenal cortex as part of the body's response to stress. [NIH]

Cortisone: A natural steroid hormone produced in the adrenal gland. It can also be made in the laboratory. Cortisone reduces swelling and can suppress immune responses. [NIH]

Cost Savings: Reductions in all or any portion of the costs of providing goods or services. Savings may be incurred by the provider or the consumer. [NIH]

Cranial: Pertaining to the cranium, or to the anterior (in animals) or superior (in humans) end of the body. [EU]

Craniocerebral Trauma: Traumatic injuries involving the cranium and intracranial structures (i.e., brain; cranial nerves; meninges; and other structures). Injuries may be classified by whether or not the skull is penetrated (i.e., penetrating vs. nonpenetrating) or whether there is an associated hemorrhage. [NIH]

Cues: Signals for an action; that specific portion of a perceptual field or pattern of stimuli to which a subject has learned to respond. [NIH]

Curative: Tending to overcome disease and promote recovery. [EU]

Cutaneous: Having to do with the skin. [NIH]

Cybernetics: That branch of learning which brings together theories and studies on communication and control in living organisms and machines. [NIH]

Cystitis: Inflammation of the urinary bladder. [EU]

Cytokine: Small but highly potent protein that modulates the activity of many cell types, including T and B cells. [NIH]

Cytoplasm: The protoplasm of a cell exclusive of that of the nucleus; it consists of a continuous aqueous solution (cytosol) and the organelles and inclusions suspended in it (phaneroplasm), and is the site of most of the chemical activities of the cell. [EU]

Cytotoxic: Cell-killing. [NIH]

Dairy Products: Raw and processed or manufactured milk and milk-derived products. These are usually from cows (bovine) but are also from goats, sheep, reindeer, and water buffalo. [NIH]

Data Collection: Systematic gathering of data for a particular purpose from various sources, including questionnaires, interviews, observation, existing records, and electronic devices. The process is usually preliminary to statistical analysis of the data. [NIH]

Databases, Bibliographic: Extensive collections, reputedly complete, of references and citations to books, articles, publications, etc., generally on a single subject or specialized subject area. Databases can operate through automated files, libraries, or computer disks. The concept should be differentiated from factual databases which is used for collections of data and facts apart from bibliographic references to them. [NIH]

Deception: The act of deceiving or the fact or condition of being deceived. [NIH]

Decubitus: An act of lying down; also the position assumed in lying down. [EU]

Decubitus Ulcer: An ulceration caused by prolonged pressure in patients permitted to lie too still for a long period of time. The bony prominences of the body are the most frequently affected sites. The ulcer is caused by ischemia of the underlying structures of the skin, fat, and muscles as a result of the sustained and constant pressure. [NIH]

Degenerative: Undergoing degeneration : tending to degenerate; having the character of or involving degeneration; causing or tending to cause degeneration. [EU]

Dehydroepiandrosterone: DHEA. A substance that is being studied as a cancer prevention drug. It belongs to the family of drugs called steroids. [NIH]

Deletion: A genetic rearrangement through loss of segments of DNA (chromosomes), bringing sequences, which are normally separated, into close proximity. [NIH]

Delivery of Health Care: The concept concerned with all aspects of providing and distributing health services to a patient population. [NIH]

Dementia: An acquired organic mental disorder with loss of intellectual abilities of sufficient severity to interfere with social or occupational functioning. The dysfunction is multifaceted and involves memory, behavior, personality, judgment, attention, spatial relations, language, abstract thought, and other executive functions. The intellectual decline is usually progressive, and initially spares the level of consciousness. [NIH]

Density: The logarithm to the base 10 of the opacity of an exposed and processed film. [NIH]

Dental Care: The total of dental diagnostic, preventive, and restorative services provided to

meet the needs of a patient (from Illustrated Dictionary of Dentistry, 1982). [NIH]

Depersonalization: Alteration in the perception of the self so that the usual sense of one's own reality is lost, manifested in a sense of unreality or self-estrangement, in changes of body image, or in a feeling that one does not control his own actions and speech; seen in depersonalization disorder, schizophrenic disorders, and schizotypal personality disorder. Some do not draw a distinction between depersonalization and derealization, using depersonalization to include both. [EU]

Derealization: Is characterized by the loss of the sense of reality concerning one's surroundings. [NIH]

Dermatitis: Any inflammation of the skin. [NIH]

Dermatology: A medical specialty concerned with the skin, its structure, functions, diseases, and treatment. [NIH]

Desensitization: The prevention or reduction of immediate hypersensitivity reactions by administration of graded doses of allergen; called also hyposensitization and immunotherapy. [EU]

Detergents: Purifying or cleansing agents, usually salts of long-chain aliphatic bases or acids, that exert cleansing (oil-dissolving) and antimicrobial effects through a surface action that depends on possessing both hydrophilic and hydrophobic properties. [NIH]

Diabetes Mellitus: A heterogeneous group of disorders that share glucose intolerance in common. [NIH]

Diagnosis-Related Groups: A system for classifying patient care by relating common characteristics such as diagnosis, treatment, and age to an expected consumption of hospital resources and length of stay. Its purpose is to provide a framework for specifying case mix and to reduce hospital costs and reimbursements and it forms the cornerstone of the prospective payment system. [NIH]

Diagnostic Imaging: Any visual display of structural or functional patterns of organs or tissues for diagnostic evaluation. It includes measuring physiologic and metabolic responses to physical and chemical stimuli, as well as ultramicroscopy. [NIH]

Diagnostic procedure: A method used to identify a disease. [NIH]

Diarrhea: Passage of excessively liquid or excessively frequent stools. [NIH]

Diastolic: Of or pertaining to the diastole. [EU]

Dietitian: An expert in nutrition who helps people plan what and how much food to eat. [NIH]

Diffusion: The tendency of a gas or solute to pass from a point of higher pressure or concentration to a point of lower pressure or concentration and to distribute itself throughout the available space; a major mechanism of biological transport. [NIH]

Diffusivity: Of a reverberant sound field. The degree to which the directions of propagation of waves are random from point to point. [NIH]

Digestion: The process of breakdown of food for metabolism and use by the body. [NIH]

Digestive system: The organs that take in food and turn it into products that the body can use to stay healthy. Waste products the body cannot use leave the body through bowel movements. The digestive system includes the salivary glands, mouth, esophagus, stomach, liver, pancreas, gallbladder, small and large intestines, and rectum. [NIH]

Digestive tract: The organs through which food passes when food is eaten. These organs are the mouth, esophagus, stomach, small and large intestines, and rectum. [NIH]

Dihydrotestosterone: Anabolic agent. [NIH]

Direct: 1. Straight; in a straight line. 2. Performed immediately and without the intervention of subsidiary means. [EU]

Discrimination: The act of qualitative and/or quantitative differentiation between two or more stimuli. [NIH]

Disease Progression: The worsening of a disease over time. This concept is most often used for chronic and incurable diseases where the stage of the disease is an important determinant of therapy and prognosis. [NIH]

Disorientation: The loss of proper bearings, or a state of mental confusion as to time, place, or identity. [EU]

Disparity: Failure of the two retinal images of an object to fall on corresponding retinal points. [NIH]

Dissociation: 1. The act of separating or state of being separated. 2. The separation of a molecule into two or more fragments (atoms, molecules, ions, or free radicals) produced by the absorption of light or thermal energy or by solvation. 3. In psychology, a defense mechanism in which a group of mental processes are segregated from the rest of a person's mental activity in order to avoid emotional distress, as in the dissociative disorders (q.v.), or in which an idea or object is segregated from its emotional significance; in the first sense it is roughly equivalent to splitting, in the second, to isolation. 4. A defect of mental integration in which one or more groups of mental processes become separated off from normal consciousness and, thus separated, function as a unitary whole. [EU]

Dissociative Disorders: Sudden temporary alterations in the normally integrative functions of consciousness. [NIH]

Distal: Remote; farther from any point of reference; opposed to proximal. In dentistry, used to designate a position on the dental arch farther from the median line of the jaw. [EU]

Diurnal: Occurring during the day. [EU]

Dizziness: An imprecise term which may refer to a sense of spatial disorientation, motion of the environment, or lightheadedness. [NIH]

Dopamine: An endogenous catecholamine and prominent neurotransmitter in several systems of the brain. In the synthesis of catecholamines from tyrosine, it is the immediate precursor to norepinephrine and epinephrine. Dopamine is a major transmitter in the extrapyramidal system of the brain, and important in regulating movement. A family of dopaminergic receptor subtypes mediate its action. Dopamine is used pharmacologically for its direct (beta adrenergic agonist) and indirect (adrenergic releasing) sympathomimetic effects including its actions as an inotropic agent and as a renal vasodilator. [NIH]

Dose-dependent: Refers to the effects of treatment with a drug. If the effects change when the dose of the drug is changed, the effects are said to be dose dependent. [NIH]

Drive: A state of internal activity of an organism that is a necessary condition before a given stimulus will elicit a class of responses; e.g., a certain level of hunger (drive) must be present before food will elicit an eating response. [NIH]

Drug Interactions: The action of a drug that may affect the activity, metabolism, or toxicity of another drug. [NIH]

Drug Tolerance: Progressive diminution of the susceptibility of a human or animal to the effects of a drug, resulting from its continued administration. It should be differentiated from drug resistance wherein an organism, disease, or tissue fails to respond to the intended effectiveness of a chemical or drug. It should also be differentiated from maximum tolerated dose and no-observed-adverse-effect level. [NIH]

Duct: A tube through which body fluids pass. [NIH]

Dyskinesia: Impairment of the power of voluntary movement, resulting in fragmentary or incomplete movements. [EU]

Dysphonia: Difficulty or pain in speaking; impairment of the voice. [NIH]

Dysphoric: A feeling of unpleasantness and discomfort. [NIH]

Dyspnea: Difficult or labored breathing. [NIH]

Dystonia: Disordered tonicity of muscle. [EU]

Eating Disorders: A group of disorders characterized by physiological and psychological disturbances in appetite or food intake. [NIH]

Eczema: A pruritic papulovesicular dermatitis occurring as a reaction to many endogenous and exogenous agents (Dorland, 27th ed). [NIH]

Effector: It is often an enzyme that converts an inactive precursor molecule into an active second messenger. [NIH]

Efficacy: The extent to which a specific intervention, procedure, regimen, or service produces a beneficial result under ideal conditions. Ideally, the determination of efficacy is based on the results of a randomized control trial. [NIH]

Egg Yolk: Cytoplasm stored in an egg that contains nutritional reserves for the developing embryo. It is rich in polysaccharides, lipids, and proteins. [NIH]

Elastin: The protein that gives flexibility to tissues. [NIH]

Electrode: Component of the pacing system which is at the distal end of the lead. It is the interface with living cardiac tissue across which the stimulus is transmitted. [NIH]

Electrolyte: A substance that dissociates into ions when fused or in solution, and thus becomes capable of conducting electricity; an ionic solute. [EU]

Electrons: Stable elementary particles having the smallest known negative charge, present in all elements; also called negatrons. Positively charged electrons are called positrons. The numbers, energies and arrangement of electrons around atomic nuclei determine the chemical identities of elements. Beams of electrons are called cathode rays or beta rays, the latter being a high-energy biproduct of nuclear decay. [NIH]

Emboli: Bit of foreign matter which enters the blood stream at one point and is carried until it is lodged or impacted in an artery and obstructs it. It may be a blood clot, an air bubble, fat or other tissue, or clumps of bacteria. [NIH]

Embolization: The blocking of an artery by a clot or foreign material. Embolization can be done as treatment to block the flow of blood to a tumor. [NIH]

Embryo: The prenatal stage of mammalian development characterized by rapid morphological changes and the differentiation of basic structures. [NIH]

Empirical: A treatment based on an assumed diagnosis, prior to receiving confirmatory laboratory test results. [NIH]

Encephalopathy: A disorder of the brain that can be caused by disease, injury, drugs, or chemicals. [NIH]

Endocarditis: Exudative and proliferative inflammatory alterations of the endocardium, characterized by the presence of vegetations on the surface of the endocardium or in the endocardium itself, and most commonly involving a heart valve, but sometimes affecting the inner lining of the cardiac chambers or the endocardium elsewhere. It may occur as a primary disorder or as a complication of or in association with another disease. [EU]

Endocrine Glands: Ductless glands that secrete substances which are released directly into the circulation and which influence metabolism and other body functions. [NIH]

Endocrine System: The system of glands that release their secretions (hormones) directly into the circulatory system. In addition to the endocrine glands, included are the chromaffin system and the neurosecretory systems. [NIH]

Endocrinology: A subspecialty of internal medicine concerned with the metabolism, physiology, and disorders of the endocrine system. [NIH]

Endorphin: Opioid peptides derived from beta-lipotropin. Endorphin is the most potent naturally occurring analgesic agent. It is present in pituitary, brain, and peripheral tissues. [NIH]

Endoscope: A thin, lighted tube used to look at tissues inside the body. [NIH]

Endothelial cell: The main type of cell found in the inside lining of blood vessels, lymph vessels, and the heart. [NIH]

Endotoxins: Toxins closely associated with the living cytoplasm or cell wall of certain microorganisms, which do not readily diffuse into the culture medium, but are released upon lysis of the cells. [NIH]

Enkephalin: A natural opiate painkiller, in the hypothalamus. [NIH]

Environmental Health: The science of controlling or modifying those conditions, influences, or forces surrounding man which relate to promoting, establishing, and maintaining health. [NIH]

Enzymatic: Phase where enzyme cuts the precursor protein. [NIH]

Enzyme: A protein that speeds up chemical reactions in the body. [NIH]

Epidemic: Occurring suddenly in numbers clearly in excess of normal expectancy; said especially of infectious diseases but applied also to any disease, injury, or other health-related event occurring in such outbreaks. [EU]

Epigastric: Having to do with the upper middle area of the abdomen. [NIH]

Epinephrine: The active sympathomimetic hormone from the adrenal medulla in most species. It stimulates both the alpha- and beta- adrenergic systems, causes systemic vasoconstriction and gastrointestinal relaxation, stimulates the heart, and dilates bronchi and cerebral vessels. It is used in asthma and cardiac failure and to delay absorption of local anesthetics. [NIH]

ERV: The expiratory reserve volume is the largest volume of gas that can be expired from the end-expiratory level. [NIH]

Erythrocyte Volume: Volume of circulating erythrocytes. It is usually measured by radioisotope dilution technique. [NIH]

Erythrocytes: Red blood cells. Mature erythrocytes are non-nucleated, biconcave disks containing hemoglobin whose function is to transport oxygen. [NIH]

Erythropoietin: Glycoprotein hormone, secreted chiefly by the kidney in the adult and the liver in the fetus, that acts on erythroid stem cells of the bone marrow to stimulate proliferation and differentiation. [NIH]

Esophagus: The muscular tube through which food passes from the throat to the stomach. [NIH]

Ethanol: A clear, colorless liquid rapidly absorbed from the gastrointestinal tract and distributed throughout the body. It has bactericidal activity and is used often as a topical disinfectant. It is widely used as a solvent and preservative in pharmaceutical preparations as well as serving as the primary ingredient in alcoholic beverages. [NIH]

Evacuation: An emptying, as of the bowels. [EU]

Evoke: The electric response recorded from the cerebral cortex after stimulation of a

peripheral sense organ. [NIH]

Exocrine: Secreting outwardly, via a duct. [EU]

Exogenous: Developed or originating outside the organism, as exogenous disease. [EU]

Expert Systems: Computer programs based on knowledge developed from consultation with experts on a problem, and the processing and/or formalizing of this knowledge using these programs in such a manner that the problems may be solved. [NIH]

Expiration: The act of breathing out, or expelling air from the lungs. [EU]

Expiratory: The volume of air which leaves the breathing organs in each expiration. [NIH]

Expiratory Reserve Volume: The extra volume of air that can be expired with maximum effort beyond the level reached at the end of a normal, quiet expiration. Common abbreviation is ERV. [NIH]

External-beam radiation: Radiation therapy that uses a machine to aim high-energy rays at the cancer. Also called external radiation. [NIH]

Extracellular: Outside a cell or cells. [EU]

Extrapyramidal: Outside of the pyramidal tracts. [EU]

Facial: Of or pertaining to the face. [EU]

Facial Nerve: The 7th cranial nerve. The facial nerve has two parts, the larger motor root which may be called the facial nerve proper, and the smaller intermediate or sensory root. Together they provide efferent innervation to the muscles of facial expression and to the lacrimal and salivary glands, and convey afferent information for taste from the anterior two-thirds of the tongue and for touch from the external ear. [NIH]

Family Planning: Programs or services designed to assist the family in controlling reproduction by either improving or diminishing fertility. [NIH]

Family Relations: Behavioral, psychological, and social relations among various members of the nuclear family and the extended family. [NIH]

Family Therapy: A form of group psychotherapy. It involves treatment of more than one member of the family simultaneously in the same session. [NIH]

Fat: Total lipids including phospholipids. [NIH]

Fathers: Male parents, human or animal. [NIH]

Fatigue: The state of weariness following a period of exertion, mental or physical, characterized by a decreased capacity for work and reduced efficiency to respond to stimuli. [NIH]

Feces: The excrement discharged from the intestines, consisting of bacteria, cells exfoliated from the intestines, secretions, chiefly of the liver, and a small amount of food residue. [EU]

Fetus: The developing offspring from 7 to 8 weeks after conception until birth. [NIH]

Fibrosis: Any pathological condition where fibrous connective tissue invades any organ, usually as a consequence of inflammation or other injury. [NIH]

Flatulence: Production or presence of gas in the gastrointestinal tract which may be expelled through the anus. [NIH]

Flatus: Gas passed through the rectum. [NIH]

Focus Groups: A method of data collection and a qualitative research tool in which a small group of individuals are brought together and allowed to interact in a discussion of their opinions about topics, issues, or questions. [NIH]

Food Handling: Any aspect of the operations in the preparation, transport, storage,

packaging, wrapping, exposure for sale, service, or delivery of food. [NIH]

Foot Care: Taking special steps to avoid foot problems such as sores, cuts, bunions, and calluses. Good care includes daily examination of the feet, toes, and toenails and choosing shoes and socks or stockings that fit well. People with diabetes have to take special care of their feet because nerve damage and reduced blood flow sometimes mean they will have less feeling in their feet than normal. They may not notice cuts and other problems as soon as they should. [NIH]

Forearm: The part between the elbow and the wrist. [NIH]

Fungus: A general term used to denote a group of eukaryotic protists, including mushrooms, yeasts, rusts, moulds, smuts, etc., which are characterized by the absence of chlorophyll and by the presence of a rigid cell wall composed of chitin, mannans, and sometimes cellulose. They are usually of simple morphological form or show some reversible cellular specialization, such as the formation of pseudoparenchymatous tissue in the fruiting body of a mushroom. The dimorphic fungi grow, according to environmental conditions, as moulds or yeasts. [EU]

Gadolinium: An element of the rare earth family of metals. It has the atomic symbol Gd, atomic number 64, and atomic weight 157.25. Its oxide is used in the control rods of some nuclear reactors. [NIH]

Gallbladder: The pear-shaped organ that sits below the liver. Bile is concentrated and stored in the gallbladder. [NIH]

Gamma Rays: Very powerful and penetrating, high-energy electromagnetic radiation of shorter wavelength than that of x-rays. They are emitted by a decaying nucleus, usually between 0.01 and 10 MeV. They are also called nuclear x-rays. [NIH]

Ganglia: Clusters of multipolar neurons surrounded by a capsule of loosely organized connective tissue located outside the central nervous system. [NIH]

Gas: Air that comes from normal breakdown of food. The gases are passed out of the body through the rectum (flatus) or the mouth (burp). [NIH]

Gastric: Having to do with the stomach. [NIH]

Gastric Juices: Liquids produced in the stomach to help break down food and kill bacteria. [NIH]

Gastric Mucosa: Surface epithelium in the stomach that invaginates into the lamina propria, forming gastric pits. Tubular glands, characteristic of each region of the stomach (cardiac, gastric, and pyloric), empty into the gastric pits. The gastric mucosa is made up of several different kinds of cells. [NIH]

Gastrin: A hormone released after eating. Gastrin causes the stomach to produce more acid. [NIH]

Gastrointestinal: Refers to the stomach and intestines. [NIH]

Gastrointestinal tract: The stomach and intestines. [NIH]

Gene: The functional and physical unit of heredity passed from parent to offspring. Genes are pieces of DNA, and most genes contain the information for making a specific protein. [NIH]

Gene Expression: The phenotypic manifestation of a gene or genes by the processes of gene action. [NIH]

General practitioner: A medical practitioner who does not specialize in a particular branch of medicine or limit his practice to a specific class of diseases. [NIH]

Genetic Code: The specifications for how information, stored in nucleic acid sequence (base

sequence), is translated into protein sequence (amino acid sequence). The start, stop, and order of amino acids of a protein is specified by consecutive triplets of nucleotides called codons (codon). [NIH]

Genetic Engineering: Directed modification of the gene complement of a living organism by such techniques as altering the DNA, substituting genetic material by means of a virus, transplanting whole nuclei, transplanting cell hybrids, etc. [NIH]

Genetics: The biological science that deals with the phenomena and mechanisms of heredity. [NIH]

Genotype: The genetic constitution of the individual; the characterization of the genes. [NIH]

Germ Cells: The reproductive cells in multicellular organisms. [NIH]

Gestation: The period of development of the young in viviparous animals, from the time of fertilization of the ovum until birth. [EU]

Gestational: Psychosis attributable to or occurring during pregnancy. [NIH]

Gland: An organ that produces and releases one or more substances for use in the body. Some glands produce fluids that affect tissues or organs. Others produce hormones or participate in blood production. [NIH]

Glipizide: An oral hypoglycemic agent which is rapidly absorbed and completely metabolized. [NIH]

Glossopharyngeal Nerve: The 9th cranial nerve. The glossopharyngeal nerve is a mixed motor and sensory nerve; it conveys somatic and autonomic efferents as well as general, special, and visceral afferents. Among the connections are motor fibers to the stylopharyngeus muscle, parasympathetic fibers to the parotid glands, general and taste afferents from the posterior third of the tongue, the nasopharynx, and the palate, and afferents from baroreceptors and chemoreceptors of the carotid sinus. [NIH]

Glucocorticoids: A group of corticosteroids that affect carbohydrate metabolism (gluconeogenesis, liver glycogen deposition, elevation of blood sugar), inhibit corticotropin secretion, and possess pronounced anti-inflammatory activity. They also play a role in fat and protein metabolism, maintenance of arterial blood pressure, alteration of the connective tissue response to injury, reduction in the number of circulating lymphocytes, and functioning of the central nervous system. [NIH]

Gluconeogenesis: The process by which glucose is formed from a non-carbohydrate source. [NIH]

Glucose: D-Glucose. A primary source of energy for living organisms. It is naturally occurring and is found in fruits and other parts of plants in its free state. It is used therapeutically in fluid and nutrient replacement. [NIH]

Glucose Intolerance: A pathological state in which the fasting plasma glucose level is less than 140 mg per deciliter and the 30-, 60-, or 90-minute plasma glucose concentration following a glucose tolerance test exceeds 200 mg per deciliter. This condition is seen frequently in diabetes mellitus but also occurs with other diseases. [NIH]

Glucose tolerance: The power of the normal liver to absorb and store large quantities of glucose and the effectiveness of intestinal absorption of glucose. The glucose tolerance test is a metabolic test of carbohydrate tolerance that measures active insulin, a hepatic function based on the ability of the liver to absorb glucose. The test consists of ingesting 100 grams of glucose into a fasting stomach; blood sugar should return to normal in 2 to 21 hours after ingestion. [NIH]

Glucose Tolerance Test: Determination of whole blood or plasma sugar in a fasting state before and at prescribed intervals (usually 1/2 hr, 1 hr, 3 hr, 4 hr) after taking a specified

amount (usually 100 gm orally) of glucose. [NIH]

Glycogen: A sugar stored in the liver and muscles. It releases glucose into the blood when cells need it for energy. Glycogen is the chief source of stored fuel in the body. [NIH]

Goats: Any of numerous agile, hollow-horned ruminants of the genus Capra, closely related to the sheep. [NIH]

Governing Board: The group in which legal authority is vested for the control of health-related institutions and organizations. [NIH]

Government Agencies: Administrative units of government responsible for policy making and management of governmental activities in the U.S. and abroad. [NIH]

Grade: The grade of a tumor depends on how abnormal the cancer cells look under a microscope and how quickly the tumor is likely to grow and spread. Grading systems are different for each type of cancer. [NIH]

Graft: Healthy skin, bone, or other tissue taken from one part of the body and used to replace diseased or injured tissue removed from another part of the body. [NIH]

Grafting: The operation of transfer of tissue from one site to another. [NIH]

Gram-positive: Retaining the stain or resisting decolorization by alcohol in Gram's method of staining, a primary characteristic of bacteria whose cell wall is composed of a thick layer of peptidologlycan with attached teichoic acids. [EU]

Group dynamics: Is concerned with examining the complex relations which exist between members of a group and the effect of these relationships on the operational effectiveness of the group as a whole. [NIH]

Growth: The progressive development of a living being or part of an organism from its earliest stage to maturity. [NIH]

Habitat: An area considered in terms of its environment, particularly as this determines the type and quality of the vegetation the area can carry. [NIH]

Habitual: Of the nature of a habit; according to habit; established by or repeated by force of habit, customary. [EU]

Handicap: A handicap occurs as a result of disability, but disability does not always constitute a handicap. A handicap may be said to exist when a disability causes a substantial and continuing reduction in a person's capacity to function socially and vocationally. [NIH]

Harmony: Attribute of a product which gives rise to an overall pleasant sensation. This sensation is produced by the perception of the product components as olfactory, gustatory, tactile and kinaesthetic stimuli because they are present in suitable concentration ratios. [NIH]

Headache: Pain in the cranial region that may occur as an isolated and benign symptom or as a manifestation of a wide variety of conditions including subarachnoid hemorrhage; craniocerebral trauma; central nervous system infections; intracranial hypertension; and other disorders. In general, recurrent headaches that are not associated with a primary disease process are referred to as headache disorders (e.g., migraine). [NIH]

Headache Disorders: Common conditions characterized by persistent or recurrent headaches. Headache syndrome classification systems may be based on etiology (e.g., vascular headache, post-traumatic headaches, etc.), temporal pattern (e.g., cluster headache, paroxysmal hemicrania, etc.), and precipitating factors (e.g., cough headache). [NIH]

Health Behavior: Behaviors expressed by individuals to protect, maintain or promote their health status. For example, proper diet, and appropriate exercise are activities perceived to influence health status. Life style is closely associated with health behavior and factors

influencing life style are socioeconomic, educational, and cultural. [NIH]

Health Care Costs: The actual costs of providing services related to the delivery of health care, including the costs of procedures, therapies, and medications. It is differentiated from health expenditures, which refers to the amount of money paid for the services, and from fees, which refers to the amount charged, regardless of cost. [NIH]

Health Education: Education that increases the awareness and favorably influences the attitudes and knowledge relating to the improvement of health on a personal or community basis. [NIH]

Health Expenditures: The amounts spent by individuals, groups, nations, or private or public organizations for total health care and/or its various components. These amounts may or may not be equivalent to the actual costs (health care costs) and may or may not be shared among the patient, insurers, and/or employers. [NIH]

Health Promotion: Encouraging consumer behaviors most likely to optimize health potentials (physical and psychosocial) through health information, preventive programs, and access to medical care. [NIH]

Health Status: The level of health of the individual, group, or population as subjectively assessed by the individual or by more objective measures. [NIH]

Heart attack: A seizure of weak or abnormal functioning of the heart. [NIH]

Heart failure: Loss of pumping ability by the heart, often accompanied by fatigue, breathlessness, and excess fluid accumulation in body tissues. [NIH]

Heartburn: Substernal pain or burning sensation, usually associated with regurgitation of gastric juice into the esophagus. [NIH]

Hemodynamics: The movements of the blood and the forces involved in systemic or regional blood circulation. [NIH]

Hemorrhage: Bleeding or escape of blood from a vessel. [NIH]

Hemostasis: The process which spontaneously arrests the flow of blood from vessels carrying blood under pressure. It is accomplished by contraction of the vessels, adhesion and aggregation of formed blood elements, and the process of blood or plasma coagulation. [NIH]

Hepatic: Refers to the liver. [NIH]

Hepatitis: Inflammation of the liver and liver disease involving degenerative or necrotic alterations of hepatocytes. [NIH]

Hepatocellular: Pertaining to or affecting liver cells. [EU]

Hepatocellular carcinoma: A type of adenocarcinoma, the most common type of liver tumor. [NIH]

Hepatocytes: The main structural component of the liver. They are specialized epithelial cells that are organized into interconnected plates called lobules. [NIH]

Hereditary: Of, relating to, or denoting factors that can be transmitted genetically from one generation to another. [NIH]

Heredity: 1. The genetic transmission of a particular quality or trait from parent to offspring. 2. The genetic constitution of an individual. [EU]

Heritability: The proportion of observed variation in a particular trait that can be attributed to inherited genetic factors in contrast to environmental ones. [NIH]

Herpes: Any inflammatory skin disease caused by a herpesvirus and characterized by the formation of clusters of small vesicles. When used alone, the term may refer to herpes

simplex or to herpes zoster. [EU]

Herpes Zoster: Acute vesicular inflammation. [NIH]

HIV: Human immunodeficiency virus. Species of lentivirus, subgenus primate lentiviruses, formerly designated T-cell lymphotropic virus type III/lymphadenopathy-associated virus (HTLV-III/LAV). It is acknowledged to be the agent responsible for the acute infectious manifestations, neurologic disorders, and immunologic abnormalities linked to the acquired immunodeficiency syndrome. [NIH]

Holistic Health: Health as viewed from the perspective that man and other organisms function as complete, integrated units rather than as aggregates of separate parts. [NIH]

Homologous: Corresponding in structure, position, origin, etc., as (a) the feathers of a bird and the scales of a fish, (b) antigen and its specific antibody, (c) allelic chromosomes. [EU]

Hormonal: Pertaining to or of the nature of a hormone. [EU]

Hormone: A substance in the body that regulates certain organs. Hormones such as gastrin help in breaking down food. Some hormones come from cells in the stomach and small intestine. [NIH]

Hospice: Institution dedicated to caring for the terminally ill. [NIH]

Hospital Charges: The prices a hospital sets for its services. Hospital costs (the direct and indirect expenses incurred by the hospital in providing the services) are one factor in the determination of hospital charges. Other factors may include, for example, profits, competition, and the necessity of recouping the costs of uncompensated care. [NIH]

Hospital Costs: The expenses incurred by a hospital in providing care. The hospital costs attributed to a particular patient care episode include the direct costs plus an appropriate proportion of the overhead for administration, personnel, building maintenance, equipment, etc. Hospital costs are one of the factors which determine hospital charges (the price the hospital sets for its services). [NIH]

Host: Any animal that receives a transplanted graft. [NIH]

Human papillomavirus: HPV. A virus that causes abnormal tissue growth (warts) and is often associated with some types of cancer. [NIH]

Humoral: Of, relating to, proceeding from, or involving a bodily humour - now often used of endocrine factors as opposed to neural or somatic. [EU]

Hydrochloric Acid: A strong corrosive acid that is commonly used as a laboratory reagent. It is formed by dissolving hydrogen chloride in water. Gastric acid is the hydrochloric acid component of gastric juice. [NIH]

Hydrogen: The first chemical element in the periodic table. It has the atomic symbol H, atomic number 1, and atomic weight 1. It exists, under normal conditions, as a colorless, odorless, tasteless, diatomic gas. Hydrogen ions are protons. Besides the common H1 isotope, hydrogen exists as the stable isotope deuterium and the unstable, radioactive isotope tritium. [NIH]

Hydroxylysine: A hydroxylated derivative of the amino acid lysine that is present in certain collagens. [NIH]

Hydroxyproline: A hydroxylated form of the imino acid proline. A deficiency in ascorbic acid can result in impaired hydroxyproline formation. [NIH]

Hygienic: Pertaining to hygiene, or conducive to health. [EU]

Hyperglycemia: Abnormally high blood sugar. [NIH]

Hyperopia: Farsightedness; ability to see distant objects more clearly than close objects; may be corrected with glasses or contact lenses. [NIH]

Hypersensitivity: Altered reactivity to an antigen, which can result in pathologic reactions upon subsequent exposure to that particular antigen. [NIH]

Hypersensitivity, Immediate: Hypersensitivity reactions which occur within minutes of exposure to challenging antigen due to the release of histamine which follows the antigen-antibody reaction and causes smooth muscle contraction and increased vascular permeability. [NIH]

Hypertension: Persistently high arterial blood pressure. Currently accepted threshold levels are 140 mm Hg systolic and 90 mm Hg diastolic pressure. [NIH]

Hyperthyroidism: Excessive functional activity of the thyroid gland. [NIH]

Hypertrophy: General increase in bulk of a part or organ, not due to tumor formation, nor to an increase in the number of cells. [NIH]

Hypnotic: A drug that acts to induce sleep. [EU]

Hypoglycemia: Abnormally low blood sugar [NIH]

Hypoglycemic: An orally active drug that produces a fall in blood glucose concentration. [NIH]

Hypotension: Abnormally low blood pressure. [NIH]

Hypothalamic: Of or involving the hypothalamus. [EU]

Hypothalamus: Ventral part of the diencephalon extending from the region of the optic chiasm to the caudal border of the mammillary bodies and forming the inferior and lateral walls of the third ventricle. [NIH]

Hypoxemia: Deficient oxygenation of the blood; hypoxia. [EU]

Id: The part of the personality structure which harbors the unconscious instinctive desires and strivings of the individual. [NIH]

Idiopathic: Describes a disease of unknown cause. [NIH]

Immune function: Production and action of cells that fight disease or infection. [NIH]

Immune response: The activity of the immune system against foreign substances (antigens). [NIH]

Immune system: The organs, cells, and molecules responsible for the recognition and disposal of foreign ("non-self") material which enters the body. [NIH]

Immunity: Nonsusceptibility to the invasive or pathogenic effects of foreign microorganisms or to the toxic effect of antigenic substances. [NIH]

Immunization: Deliberate stimulation of the host's immune response. Active immunization involves administration of antigens or immunologic adjuvants. Passive immunization involves administration of immune sera or lymphocytes or their extracts (e.g., transfer factor, immune RNA) or transplantation of immunocompetent cell producing tissue (thymus or bone marrow). [NIH]

Immunocompetence: The ability of lymphoid cells to mount a humoral or cellular immune response when challenged by antigen. [NIH]

Immunodeficiency: The decreased ability of the body to fight infection and disease. [NIH]

Immunodeficiency syndrome: The inability of the body to produce an immune response. [NIH]

Immunoglobulin: A protein that acts as an antibody. [NIH]

Immunologic: The ability of the antibody-forming system to recall a previous experience with an antigen and to respond to a second exposure with the prompt production of large amounts of antibody. [NIH]

Immunosuppressive: Describes the ability to lower immune system responses. [NIH]

Immunosuppressive therapy: Therapy used to decrease the body's immune response, such as drugs given to prevent transplant rejection. [NIH]

Immunotherapy: Manipulation of the host's immune system in treatment of disease. It includes both active and passive immunization as well as immunosuppressive therapy to prevent graft rejection. [NIH]

Impairment: In the context of health experience, an impairment is any loss or abnormality of psychological, physiological, or anatomical structure or function. [NIH]

Implant radiation: A procedure in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near the tumor. Also called [NIH]

Impotence: The inability to perform sexual intercourse. [NIH]

In vitro: In the laboratory (outside the body). The opposite of in vivo (in the body). [NIH]

In vivo: In the body. The opposite of in vitro (outside the body or in the laboratory). [NIH]

Incision: A cut made in the body during surgery. [NIH]

Incontinence: Inability to control the flow of urine from the bladder (urinary incontinence) or the escape of stool from the rectum (fecal incontinence). [NIH]

Indicative: That indicates; that points out more or less exactly; that reveals fairly clearly. [EU]

Induction: The act or process of inducing or causing to occur, especially the production of a specific morphogenetic effect in the developing embryo through the influence of evocators or organizers, or the production of anaesthesia or unconsciousness by use of appropriate agents. [EU]

Infant, Newborn: An infant during the first month after birth. [NIH]

Infarction: A pathological process consisting of a sudden insufficient blood supply to an area, which results in necrosis of that area. It is usually caused by a thrombus, an embolus, or a vascular torsion. [NIH]

Infection: 1. Invasion and multiplication of microorganisms in body tissues, which may be clinically unapparent or result in local cellular injury due to competitive metabolism, toxins, intracellular replication, or antigen-antibody response. The infection may remain localized, subclinical, and temporary if the body's defensive mechanisms are effective. A local infection may persist and spread by extension to become an acute, subacute, or chronic clinical infection or disease state. A local infection may also become systemic when the microorganisms gain access to the lymphatic or vascular system. 2. An infectious disease. [EU]

Infection Control: Programs of disease surveillance, generally within health care facilities, designed to investigate, prevent, and control the spread of infections and their causative microorganisms. [NIH]

Infertility: The diminished or absent ability to conceive or produce an offspring while sterility is the complete inability to conceive or produce an offspring. [NIH]

Inflammation: A pathological process characterized by injury or destruction of tissues caused by a variety of cytologic and chemical reactions. It is usually manifested by typical signs of pain, heat, redness, swelling, and loss of function. [NIH]

Inflammatory bowel disease: A general term that refers to the inflammation of the colon and rectum. Inflammatory bowel disease includes ulcerative colitis and Crohn's disease. [NIH]

Ingestion: Taking into the body by mouth [NIH]

Initiation: Mutation induced by a chemical reactive substance causing cell changes; being a

step in a carcinogenic process. [NIH]

Inotropic: Affecting the force or energy of muscular contractions. [EU]

Insight: The capacity to understand one's own motives, to be aware of one's own psychodynamics, to appreciate the meaning of symbolic behavior. [NIH]

Insomnia: Difficulty in going to sleep or getting enough sleep. [NIH]

Instillation: . [EU]

Institutionalization: The caring for individuals in institutions and their adaptation to routines characteristic of the institutional environment, and/or their loss of adaptation to life outside the institution. [NIH]

Insulator: Material covering the metal conductor of the lead. It is usually polyurethane or silicone. [NIH]

Insulin: A protein hormone secreted by beta cells of the pancreas. Insulin plays a major role in the regulation of glucose metabolism, generally promoting the cellular utilization of glucose. It is also an important regulator of protein and lipid metabolism. Insulin is used as a drug to control insulin-dependent diabetes mellitus. [NIH]

Insulin-dependent diabetes mellitus: A disease characterized by high levels of blood glucose resulting from defects in insulin secretion, insulin action, or both. Autoimmune, genetic, and environmental factors are involved in the development of type I diabetes. [NIH]

Intensive Care: Advanced and highly specialized care provided to medical or surgical patients whose conditions are life-threatening and require comprehensive care and constant monitoring. It is usually administered in specially equipped units of a health care facility. [NIH]

Interferon: A biological response modifier (a substance that can improve the body's natural response to disease). Interferons interfere with the division of cancer cells and can slow tumor growth. There are several types of interferons, including interferon-alpha, -beta, and -gamma. These substances are normally produced by the body. They are also made in the laboratory for use in treating cancer and other diseases. [NIH]

Interferon-alpha: One of the type I interferons produced by peripheral blood leukocytes or lymphoblastoid cells when exposed to live or inactivated virus, double-stranded RNA, or bacterial products. It is the major interferon produced by virus-induced leukocyte cultures and, in addition to its pronounced antiviral activity, it causes activation of NK cells. [NIH]

Internal Medicine: A medical specialty concerned with the diagnosis and treatment of diseases of the internal organ systems of adults. [NIH]

Internal radiation: A procedure in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near the tumor. Also called brachytherapy, implant radiation, or interstitial radiation therapy. [NIH]

Interpersonal Relations: The reciprocal interaction of two or more persons. [NIH]

Interstitial: Pertaining to or situated between parts or in the interspaces of a tissue. [EU]

Intervention Studies: Epidemiologic investigations designed to test a hypothesized cause-effect relation by modifying the supposed causal factor(s) in the study population. [NIH]

Intestinal: Having to do with the intestines. [NIH]

Intestine: A long, tube-shaped organ in the abdomen that completes the process of digestion. There is both a large intestine and a small intestine. Also called the bowel. [NIH]

Intoxication: Poisoning, the state of being poisoned. [EU]

Intracellular: Inside a cell. [NIH]

Intracranial Hypertension: Increased pressure within the cranial vault. This may result from several conditions, including hydrocephalus; brain edema; intracranial masses; severe systemic hypertension; pseudotumor cerebri; and other disorders. [NIH]

Invasive: 1. Having the quality of invasiveness. 2. Involving puncture or incision of the skin or insertion of an instrument or foreign material into the body; said of diagnostic techniques. [EU]

Invertebrates: Animals that have no spinal column. [NIH]

Involuntary: Reaction occurring without intention or volition. [NIH]

Ionizing: Radiation comprising charged particles, e. g. electrons, protons, alpha-particles, etc., having sufficient kinetic energy to produce ionization by collision. [NIH]

Ions: An atom or group of atoms that have a positive or negative electric charge due to a gain (negative charge) or loss (positive charge) of one or more electrons. Atoms with a positive charge are known as cations; those with a negative charge are anions. [NIH]

Irritable Bowel Syndrome: A disorder that comes and goes. Nerves that control the muscles in the GI tract are too active. The GI tract becomes sensitive to food, stool, gas, and stress. Causes abdominal pain, bloating, and constipation or diarrhea. Also called spastic colon or mucous colitis. [NIH]

Irritants: Drugs that act locally on cutaneous or mucosal surfaces to produce inflammation; those that cause redness due to hyperemia are rubefacients; those that raise blisters are vesicants and those that penetrate sebaceous glands and cause abscesses are pustulants; tear gases and mustard gases are also irritants. [NIH]

Ischemia: Deficiency of blood in a part, due to functional constriction or actual obstruction of a blood vessel. [EU]

Job Satisfaction: Personal satisfaction relative to the work situation. [NIH]

Joint: The point of contact between elements of an animal skeleton with the parts that surround and support it. [NIH]

Kb: A measure of the length of DNA fragments, 1 Kb = 1000 base pairs. The largest DNA fragments are up to 50 kilobases long. [NIH]

Labile: 1. Gliding; moving from point to point over the surface; unstable; fluctuating. 2. Chemically unstable. [EU]

Large Intestine: The part of the intestine that goes from the cecum to the rectum. The large intestine absorbs water from stool and changes it from a liquid to a solid form. The large intestine is 5 feet long and includes the appendix, cecum, colon, and rectum. Also called colon. [NIH]

Larynx: An irregularly shaped, musculocartilaginous tubular structure, lined with mucous membrane, located at the top of the trachea and below the root of the tongue and the hyoid bone. It is the essential sphincter guarding the entrance into the trachea and functioning secondarily as the organ of voice. [NIH]

Latency: The period of apparent inactivity between the time when a stimulus is presented and the moment a response occurs. [NIH]

Length of Stay: The period of confinement of a patient to a hospital or other health facility. [NIH]

Lens: The transparent, double convex (outward curve on both sides) structure suspended between the aqueous and vitreous; helps to focus light on the retina. [NIH]

Lentivirus: A genus of the family Retroviridae consisting of non-oncogenic retroviruses that produce multi-organ diseases characterized by long incubation periods and persistent

infection. Lentiviruses are unique in that they contain open reading frames (ORFs) between the pol and env genes and in the 3' env region. Five serogroups are recognized, reflecting the mammalian hosts with which they are associated. HIV-1 is the type species. [NIH]

Lesion: An area of abnormal tissue change. [NIH]

Leucine: An essential branched-chain amino acid important for hemoglobin formation. [NIH]

Leukocytes: White blood cells. These include granular leukocytes (basophils, eosinophils, and neutrophils) as well as non-granular leukocytes (lymphocytes and monocytes). [NIH]

Leukopenia: A condition in which the number of leukocytes (white blood cells) in the blood is reduced. [NIH]

Library Services: Services offered to the library user. They include reference and circulation. [NIH]

Ligament: A band of fibrous tissue that connects bones or cartilages, serving to support and strengthen joints. [EU]

Linear Models: Statistical models in which the value of a parameter for a given value of a factor is assumed to be equal to a + bx, where a and b are constants. The models predict a linear regression. [NIH]

Linkage: The tendency of two or more genes in the same chromosome to remain together from one generation to the next more frequently than expected according to the law of independent assortment. [NIH]

Lipid: Fat. [NIH]

Lipid Peroxidation: Peroxidase catalyzed oxidation of lipids using hydrogen peroxide as an electron acceptor. [NIH]

Liver: A large, glandular organ located in the upper abdomen. The liver cleanses the blood and aids in digestion by secreting bile. [NIH]

Localized: Cancer which has not metastasized yet. [NIH]

Longitudinal study: Also referred to as a "cohort study" or "prospective study"; the analytic method of epidemiologic study in which subsets of a defined population can be identified who are, have been, or in the future may be exposed or not exposed, or exposed in different degrees, to a factor or factors hypothesized to influence the probability of occurrence of a given disease or other outcome. The main feature of this type of study is to observe large numbers of subjects over an extended time, with comparisons of incidence rates in groups that differ in exposure levels. [NIH]

Lorazepam: An anti-anxiety agent with few side effects. It also has hypnotic, anticonvulsant, and considerable sedative properties and has been proposed as a preanesthetic agent. [NIH]

Lumbar: Pertaining to the loins, the part of the back between the thorax and the pelvis. [EU]

Lumbar puncture: A procedure in which a needle is put into the lower part of the spinal column to collect cerebrospinal fluid or to give anticancer drugs intrathecally. Also called a spinal tap. [NIH]

Lymph: The almost colorless fluid that travels through the lymphatic system and carries cells that help fight infection and disease. [NIH]

Lymph node: A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Also known as a lymph gland. Lymph nodes are spread out along lymphatic vessels and contain many lymphocytes, which filter the lymphatic fluid (lymph). [NIH]

Lymphadenitis: Inflammation of the lymph nodes. [NIH]

Lymphadenopathy: Disease or swelling of the lymph nodes. [NIH]

Lymphatic: The tissues and organs, including the bone marrow, spleen, thymus, and lymph nodes, that produce and store cells that fight infection and disease. [NIH]

Lymphatic system: The tissues and organs that produce, store, and carry white blood cells that fight infection and other diseases. This system includes the bone marrow, spleen, thymus, lymph nodes and a network of thin tubes that carry lymph and white blood cells. These tubes branch, like blood vessels, into all the tissues of the body. [NIH]

Lymphocyte: A white blood cell. Lymphocytes have a number of roles in the immune system, including the production of antibodies and other substances that fight infection and diseases. [NIH]

Lymphoid: Referring to lymphocytes, a type of white blood cell. Also refers to tissue in which lymphocytes develop. [NIH]

Lymphokine: A soluble protein produced by some types of white blood cell that stimulates other white blood cells to kill foreign invaders. [NIH]

Macrophage: A type of white blood cell that surrounds and kills microorganisms, removes dead cells, and stimulates the action of other immune system cells. [NIH]

Magnetic Resonance Imaging: Non-invasive method of demonstrating internal anatomy based on the principle that atomic nuclei in a strong magnetic field absorb pulses of radiofrequency energy and emit them as radiowaves which can be reconstructed into computerized images. The concept includes proton spin tomographic techniques. [NIH]

Malignant: Cancerous; a growth with a tendency to invade and destroy nearby tissue and spread to other parts of the body. [NIH]

Mammary: Pertaining to the mamma, or breast. [EU]

Manifest: Being the part or aspect of a phenomenon that is directly observable : concretely expressed in behaviour. [EU]

Meat: The edible portions of any animal used for food including domestic mammals (the major ones being cattle, swine, and sheep) along with poultry, fish, shellfish, and game. [NIH]

Medial: Lying near the midsaggital plane of the body; opposed to lateral. [NIH]

Mediate: Indirect; accomplished by the aid of an intervening medium. [EU]

Mediator: An object or substance by which something is mediated, such as (1) a structure of the nervous system that transmits impulses eliciting a specific response; (2) a chemical substance (transmitter substance) that induces activity in an excitable tissue, such as nerve or muscle; or (3) a substance released from cells as the result of the interaction of antigen with antibody or by the action of antigen with a sensitized lymphocyte. [EU]

Medical Oncology: A subspecialty of internal medicine concerned with the study of neoplasms. [NIH]

MEDLINE: An online database of MEDLARS, the computerized bibliographic Medical Literature Analysis and Retrieval System of the National Library of Medicine. [NIH]

Medullary: Pertaining to the marrow or to any medulla; resembling marrow. [EU]

Membrane: A very thin layer of tissue that covers a surface. [NIH]

Memory: Complex mental function having four distinct phases: (1) memorizing or learning, (2) retention, (3) recall, and (4) recognition. Clinically, it is usually subdivided into immediate, recent, and remote memory. [NIH]

Menopause: Permanent cessation of menstruation. [NIH]

Menstruation: The normal physiologic discharge through the vagina of blood and mucosal

tissues from the nonpregnant uterus. [NIH]

Mental Disorders: Psychiatric illness or diseases manifested by breakdowns in the adaptational process expressed primarily as abnormalities of thought, feeling, and behavior producing either distress or impairment of function. [NIH]

Mental Health: The state wherein the person is well adjusted. [NIH]

Mental Processes: Conceptual functions or thinking in all its forms. [NIH]

Metastasis: The spread of cancer from one part of the body to another. Tumors formed from cells that have spread are called "secondary tumors" and contain cells that are like those in the original (primary) tumor. The plural is metastases. [NIH]

Metastatic: Having to do with metastasis, which is the spread of cancer from one part of the body to another. [NIH]

Methionine: A sulfur containing essential amino acid that is important in many body functions. It is a chelating agent for heavy metals. [NIH]

MI: Myocardial infarction. Gross necrosis of the myocardium as a result of interruption of the blood supply to the area; it is almost always caused by atherosclerosis of the coronary arteries, upon which coronary thrombosis is usually superimposed. [NIH]

Microbiology: The study of microorganisms such as fungi, bacteria, algae, archaea, and viruses. [NIH]

Migration: The systematic movement of genes between populations of the same species, geographic race, or variety. [NIH]

Mitosis: A method of indirect cell division by means of which the two daughter nuclei normally receive identical complements of the number of chromosomes of the somatic cells of the species. [NIH]

Modeling: A treatment procedure whereby the therapist presents the target behavior which the learner is to imitate and make part of his repertoire. [NIH]

Modification: A change in an organism, or in a process in an organism, that is acquired from its own activity or environment. [NIH]

Molecular: Of, pertaining to, or composed of molecules : a very small mass of matter. [EU]

Molecular Structure: The location of the atoms, groups or ions relative to one another in a molecule, as well as the number, type and location of covalent bonds. [NIH]

Molecule: A chemical made up of two or more atoms. The atoms in a molecule can be the same (an oxygen molecule has two oxygen atoms) or different (a water molecule has two hydrogen atoms and one oxygen atom). Biological molecules, such as proteins and DNA, can be made up of many thousands of atoms. [NIH]

Monitor: An apparatus which automatically records such physiological signs as respiration, pulse, and blood pressure in an anesthetized patient or one undergoing surgical or other procedures. [NIH]

Monoclonal: An antibody produced by culturing a single type of cell. It therefore consists of a single species of immunoglobulin molecules. [NIH]

Morphine: The principal alkaloid in opium and the prototype opiate analgesic and narcotic. Morphine has widespread effects in the central nervous system and on smooth muscle. [NIH]

Motility: The ability to move spontaneously. [EU]

Motion Sickness: Sickness caused by motion, as sea sickness, train sickness, car sickness, and air sickness. [NIH]

Mucins: A secretion containing mucopolysaccharides and protein that is the chief

constituent of mucus. [NIH]

Mucus: The viscous secretion of mucous membranes. It contains mucin, white blood cells, water, inorganic salts, and exfoliated cells. [NIH]

Multiple sclerosis: A disorder of the central nervous system marked by weakness, numbness, a loss of muscle coordination, and problems with vision, speech, and bladder control. Multiple sclerosis is thought to be an autoimmune disease in which the body's immune system destroys myelin. Myelin is a substance that contains both protein and fat (lipid) and serves as a nerve insulator and helps in the transmission of nerve signals. [NIH]

Muscle Relaxation: That phase of a muscle twitch during which a muscle returns to a resting position. [NIH]

Muscle tension: A force in a material tending to produce extension; the state of being stretched. [NIH]

Mustard Gas: Severe irritant and vesicant of skin, eyes, and lungs. It may cause blindness and lethal lung edema and was formerly used as a war gas. The substance has been proposed as a cytostatic and for treatment of psoriasis. It has been listed as a known carcinogen in the Fourth Annual Report on Carcinogens (NTP-85-002, 1985) (Merck, 11th ed). [NIH]

Mycobacteriosis: Any disease caused by Mycobacterium other than M. tuberculosis, M. bovis, and M. avium. [NIH]

Mycobacterium: A genus of gram-positive, aerobic bacteria. Most species are free-living in soil and water, but the major habitat for some is the diseased tissue of warm-blooded hosts. [NIH]

Mycobacterium avium: A bacterium causing tuberculosis in domestic fowl and other birds. In pigs, it may cause localized and sometimes disseminated disease. The organism occurs occasionally in sheep and cattle. It should be distinguished from the M. avium complex, which infects primarily humans. [NIH]

Mycobacterium avium Complex: A complex that includes several strains of M. avium. M. intracellulare is not easily distinguished from M. avium and therefore is included in the complex. These organisms are most frequently found in pulmonary secretions from persons with a tuberculous-like mycobacteriosis. Strains of this complex have also been associated with childhood lymphadenitis and AIDS. M. avium alone causes tuberculosis in a variety of birds and other animals, including pigs. [NIH]

Myelin: The fatty substance that covers and protects nerves. [NIH]

Myocardial infarction: Gross necrosis of the myocardium as a result of interruption of the blood supply to the area; it is almost always caused by atherosclerosis of the coronary arteries, upon which coronary thrombosis is usually superimposed. [NIH]

Myocardial Ischemia: A disorder of cardiac function caused by insufficient blood flow to the muscle tissue of the heart. The decreased blood flow may be due to narrowing of the coronary arteries (coronary arteriosclerosis), to obstruction by a thrombus (coronary thrombosis), or less commonly, to diffuse narrowing of arterioles and other small vessels within the heart. Severe interruption of the blood supply to the myocardial tissue may result in necrosis of cardiac muscle (myocardial infarction). [NIH]

Myocardium: The muscle tissue of the heart composed of striated, involuntary muscle known as cardiac muscle. [NIH]

Myopia: That error of refraction in which rays of light entering the eye parallel to the optic axis are brought to a focus in front of the retina, as a result of the eyeball being too long from front to back (axial m.) or of an increased strength in refractive power of the media of the

eye (index m.). Called also nearsightedness, because the near point is less distant than it is in emmetropia with an equal amplitude of accommodation. [EU]

Naive: Used to describe an individual who has never taken a certain drug or class of drugs (e. g., AZT-naive, antiretroviral-naive), or to refer to an undifferentiated immune system cell. [NIH]

Naloxone: A specific opiate antagonist that has no agonist activity. It is a competitive antagonist at mu, delta, and kappa opioid receptors. [NIH]

Narcosis: A general and nonspecific reversible depression of neuronal excitability, produced by a number of physical and chemical aspects, usually resulting in stupor. [NIH]

Narcotic: 1. Pertaining to or producing narcosis. 2. An agent that produces insensibility or stupor, applied especially to the opioids, i.e. to any natural or synthetic drug that has morphine-like actions. [EU]

Nausea: An unpleasant sensation in the stomach usually accompanied by the urge to vomit. Common causes are early pregnancy, sea and motion sickness, emotional stress, intense pain, food poisoning, and various enteroviruses. [NIH]

NCI: National Cancer Institute. NCI, part of the National Institutes of Health of the United States Department of Health and Human Services, is the federal government's principal agency for cancer research. NCI conducts, coordinates, and funds cancer research, training, health information dissemination, and other programs with respect to the cause, diagnosis, prevention, and treatment of cancer. Access the NCI Web site at http://cancer.gov. [NIH]

Necrosis: A pathological process caused by the progressive degradative action of enzymes that is generally associated with severe cellular trauma. It is characterized by mitochondrial swelling, nuclear flocculation, uncontrolled cell lysis, and ultimately cell death. [NIH]

Need: A state of tension or dissatisfaction felt by an individual that impels him to action toward a goal he believes will satisfy the impulse. [NIH]

Needs Assessment: Systematic identification of a population's needs or the assessment of individuals to determine the proper level of services needed. [NIH]

Neonatal: Pertaining to the first four weeks after birth. [EU]

Neoplasms: New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms. [NIH]

Nerve: A cordlike structure of nervous tissue that connects parts of the nervous system with other tissues of the body and conveys nervous impulses to, or away from, these tissues. [NIH]

Nervous System: The entire nerve apparatus composed of the brain, spinal cord, nerves and ganglia. [NIH]

Networks: Pertaining to a nerve or to the nerves, a meshlike structure of interlocking fibers or strands. [NIH]

Neural: 1. Pertaining to a nerve or to the nerves. 2. Situated in the region of the spinal axis, as the neutral arch. [EU]

Neuroendocrine: Having to do with the interactions between the nervous system and the endocrine system. Describes certain cells that release hormones into the blood in response to stimulation of the nervous system. [NIH]

Neuroendocrinology: The study of the anatomical and functional relationships between the nervous system and the endocrine system. [NIH]

Neurogenic: Loss of bladder control caused by damage to the nerves controlling the bladder. [NIH]

Neurologic: Having to do with nerves or the nervous system. [NIH]

Neuronal: Pertaining to a neuron or neurons (= conducting cells of the nervous system). [EU]

Neurons: The basic cellular units of nervous tissue. Each neuron consists of a body, an axon, and dendrites. Their purpose is to receive, conduct, and transmit impulses in the nervous system. [NIH]

Neuropeptide: A member of a class of protein-like molecules made in the brain. Neuropeptides consist of short chains of amino acids, with some functioning as neurotransmitters and some functioning as hormones. [NIH]

Neurosecretory Systems: A system of neurons that has the specialized function to produce and secrete hormones, and that constitutes, in whole or in part, an endocrine organ or system. [NIH]

Neurosis: Functional derangement due to disorders of the nervous system which does not affect the psychic personality of the patient. [NIH]

Neurotic: 1. Pertaining to or characterized by neurosis. 2. A person affected with a neurosis. [EU]

Neutrons: Electrically neutral elementary particles found in all atomic nuclei except light hydrogen; the mass is equal to that of the proton and electron combined and they are unstable when isolated from the nucleus, undergoing beta decay. Slow, thermal, epithermal, and fast neutrons refer to the energy levels with which the neutrons are ejected from heavier nuclei during their decay. [NIH]

Nicotine: Nicotine is highly toxic alkaloid. It is the prototypical agonist at nicotinic cholinergic receptors where it dramatically stimulates neurons and ultimately blocks synaptic transmission. Nicotine is also important medically because of its presence in tobacco smoke. [NIH]

Nonverbal Communication: Transmission of emotions, ideas, and attitudes between individuals in ways other than the spoken language. [NIH]

Norepinephrine: Precursor of epinephrine that is secreted by the adrenal medulla and is a widespread central and autonomic neurotransmitter. Norepinephrine is the principal transmitter of most postganglionic sympathetic fibers and of the diffuse projection system in the brain arising from the locus ceruleus. It is also found in plants and is used pharmacologically as a sympathomimetic. [NIH]

Normal Distribution: Continuous frequency distribution of infinite range. Its properties are as follows: 1) continuous, symmetrical distribution with both tails extending to infinity; 2) arithmetic mean, mode, and median identical; and 3) shape completely determined by the mean and standard deviation. [NIH]

Nuclear: A test of the structure, blood flow, and function of the kidneys. The doctor injects a mildly radioactive solution into an arm vein and uses x-rays to monitor its progress through the kidneys. [NIH]

Nuclear Family: A family composed of spouses and their children. [NIH]

Nuclei: A body of specialized protoplasm found in nearly all cells and containing the chromosomes. [NIH]

Nucleic acid: Either of two types of macromolecule (DNA or RNA) formed by polymerization of nucleotides. Nucleic acids are found in all living cells and contain the information (genetic code) for the transfer of genetic information from one generation to the next. [NIH]

Nucleus: A body of specialized protoplasm found in nearly all cells and containing the chromosomes. [NIH]

Nursing Care: Care given to patients by nursing service personnel. [NIH]

Nursing Staff: Personnel who provide nursing service to patients in an organized facility, institution, or agency. [NIH]

Occupational Health: The promotion and maintenance of physical and mental health in the work environment. [NIH]

Ointments: Semisolid preparations used topically for protective emollient effects or as a vehicle for local administration of medications. Ointment bases are various mixtures of fats, waxes, animal and plant oils and solid and liquid hydrocarbons. [NIH]

Oncogenic: Chemical, viral, radioactive or other agent that causes cancer; carcinogenic. [NIH]

Oncology: The study of cancer. [NIH]

Oncology nurse: A nurse who specializes in treating and caring for people who have cancer. [NIH]

Opportunistic Infections: An infection caused by an organism which becomes pathogenic under certain conditions, e.g., during immunosuppression. [NIH]

Orthopedics: A surgical specialty which utilizes medical, surgical, and physical methods to treat and correct deformities, diseases, and injuries to the skeletal system, its articulations, and associated structures. [NIH]

Orthostatic: Pertaining to or caused by standing erect. [EU]

Osteoporosis: Reduction of bone mass without alteration in the composition of bone, leading to fractures. Primary osteoporosis can be of two major types: postmenopausal osteoporosis and age-related (or senile) osteoporosis. [NIH]

Outpatient: A patient who is not an inmate of a hospital but receives diagnosis or treatment in a clinic or dispensary connected with the hospital. [NIH]

Ovum: A female germ cell extruded from the ovary at ovulation. [NIH]

Oxidation: The act of oxidizing or state of being oxidized. Chemically it consists in the increase of positive charges on an atom or the loss of negative charges. Most biological oxidations are accomplished by the removal of a pair of hydrogen atoms (dehydrogenation) from a molecule. Such oxidations must be accompanied by reduction of an acceptor molecule. Univalent o. indicates loss of one electron; divalent o., the loss of two electrons. [EU]

Oxidative Stress: A disturbance in the prooxidant-antioxidant balance in favor of the former, leading to potential damage. Indicators of oxidative stress include damaged DNA bases, protein oxidation products, and lipid peroxidation products (Sies, Oxidative Stress, 1991, pxv-xvi). [NIH]

Oxygen Consumption: The oxygen consumption is determined by calculating the difference between the amount of oxygen inhaled and exhaled. [NIH]

Palate: The structure that forms the roof of the mouth. It consists of the anterior hard palate and the posterior soft palate. [NIH]

Palliative: 1. Affording relief, but not cure. 2. An alleviating medicine. [EU]

Pancreas: A mixed exocrine and endocrine gland situated transversely across the posterior abdominal wall in the epigastric and hypochondriac regions. The endocrine portion is comprised of the Islets of Langerhans, while the exocrine portion is a compound acinar gland that secretes digestive enzymes. [NIH]

Panic: A state of extreme acute, intense anxiety and unreasoning fear accompanied by disorganization of personality function. [NIH]

Panic Disorder: A type of anxiety disorder characterized by unexpected panic attacks that

last minutes or, rarely, hours. Panic attacks begin with intense apprehension, fear or terror and, often, a feeling of impending doom. Symptoms experienced during a panic attack include dyspnea or sensations of being smothered; dizziness, loss of balance or faintness; choking sensations; palpitations or accelerated heart rate; shakiness; sweating; nausea or other form of abdominal distress; depersonalization or derealization; paresthesias; hot flashes or chills; chest discomfort or pain; fear of dying and fear of not being in control of oneself or going crazy. Agoraphobia may also develop. Similar to other anxiety disorders, it may be inherited as an autosomal dominant trait. [NIH]

Papillomavirus: A genus of Papovaviridae causing proliferation of the epithelium, which may lead to malignancy. A wide range of animals are infected including humans, chimpanzees, cattle, rabbits, dogs, and horses. [NIH]

Paralysis: Loss of ability to move all or part of the body. [NIH]

Parasite: An animal or a plant that lives on or in an organism of another species and gets at least some of its nutrition from that other organism. [NIH]

Parasitic: Having to do with or being a parasite. A parasite is an animal or a plant that lives on or in an organism of another species and gets at least some of its nutrients from it. [NIH]

Parent-Child Relations: The interactions between parent and child. [NIH]

Paresthesias: Abnormal touch sensations, such as burning or prickling, that occur without an outside stimulus. [NIH]

Partial remission: The shrinking, but not complete disappearance, of a tumor in response to therapy. Also called partial response. [NIH]

Pathogenesis: The cellular events and reactions that occur in the development of disease. [NIH]

Pathologic: 1. Indicative of or caused by a morbid condition. 2. Pertaining to pathology (= branch of medicine that treats the essential nature of the disease, especially the structural and functional changes in tissues and organs of the body caused by the disease). [EU]

Pathologic Processes: The abnormal mechanisms and forms involved in the dysfunctions of tissues and organs. [NIH]

Patient Education: The teaching or training of patients concerning their own health needs. [NIH]

Pediatric Dentistry: The practice of dentistry concerned with the dental problems of children, proper maintenance, and treatment. The dental care may include the services provided by dental specialists. [NIH]

Pelvic: Pertaining to the pelvis. [EU]

Pelvic inflammatory disease: A bacteriological disease sometimes associated with intrauterine device (IUD) usage. [NIH]

Penis: The external reproductive organ of males. It is composed of a mass of erectile tissue enclosed in three cylindrical fibrous compartments. Two of the three compartments, the corpus cavernosa, are placed side-by-side along the upper part of the organ. The third compartment below, the corpus spongiosum, houses the urethra. [NIH]

Pepsin: An enzyme made in the stomach that breaks down proteins. [NIH]

Pepsin A: Formed from pig pepsinogen by cleavage of one peptide bond. The enzyme is a single polypeptide chain and is inhibited by methyl 2-diaazoacetamidohexanoate. It cleaves peptides preferentially at the carbonyl linkages of phenylalanine or leucine and acts as the principal digestive enzyme of gastric juice. [NIH]

Peptic: Pertaining to pepsin or to digestion; related to the action of gastric juices. [EU]

Peptic Ulcer: Ulcer that occurs in those portions of the alimentary tract which come into contact with gastric juice containing pepsin and acid. It occurs when the amount of acid and pepsin is sufficient to overcome the gastric mucosal barrier. [NIH]

Peptide: Any compound consisting of two or more amino acids, the building blocks of proteins. Peptides are combined to make proteins. [NIH]

Perception: The ability quickly and accurately to recognize similarities and differences among presented objects, whether these be pairs of words, pairs of number series, or multiple sets of these or other symbols such as geometric figures. [NIH]

Perfusion: Bathing an organ or tissue with a fluid. In regional perfusion, a specific area of the body (usually an arm or a leg) receives high doses of anticancer drugs through a blood vessel. Such a procedure is performed to treat cancer that has not spread. [NIH]

Perinatal: Pertaining to or occurring in the period shortly before and after birth; variously defined as beginning with completion of the twentieth to twenty-eighth week of gestation and ending 7 to 28 days after birth. [EU]

Perineal: Pertaining to the perineum. [EU]

Periodontal disease: Disease involving the supporting structures of the teeth (as the gums and periodontal membranes). [NIH]

Periodontitis: Inflammation of the periodontal membrane; also called periodontitis simplex. [NIH]

Peroxidase: A hemeprotein from leukocytes. Deficiency of this enzyme leads to a hereditary disorder coupled with disseminated moniliasis. It catalyzes the conversion of a donor and peroxide to an oxidized donor and water. EC 1.11.1.7. [NIH]

Peroxide: Chemical compound which contains an atom group with two oxygen atoms tied to each other. [NIH]

Pharmacist: A person trained to prepare and distribute medicines and to give information about them. [NIH]

Pharmacologic: Pertaining to pharmacology or to the properties and reactions of drugs. [EU]

Pharynx: The hollow tube about 5 inches long that starts behind the nose and ends at the top of the trachea (windpipe) and esophagus (the tube that goes to the stomach). [NIH]

Phospholipids: Lipids containing one or more phosphate groups, particularly those derived from either glycerol (phosphoglycerides; glycerophospholipids) or sphingosine (sphingolipids). They are polar lipids that are of great importance for the structure and function of cell membranes and are the most abundant of membrane lipids, although not stored in large amounts in the system. [NIH]

Phosphorous: Having to do with or containing the element phosphorus. [NIH]

Phosphorus: A non-metallic element that is found in the blood, muscles, nevers, bones, and teeth, and is a component of adenosine triphosphate (ATP; the primary energy source for the body's cells.) [NIH]

Physical Therapy: The restoration of function and the prevention of disability following disease or injury with the use of light, heat, cold, water, electricity, ultrasound, and exercise. [NIH]

Physician-Patient Relations: The interactions between physician and patient. [NIH]

Physiologic: Having to do with the functions of the body. When used in the phrase "physiologic age," it refers to an age assigned by general health, as opposed to calendar age. [NIH]

Physiology: The science that deals with the life processes and functions of organismus, their

cells, tissues, and organs. [NIH]

Pilot study: The initial study examining a new method or treatment. [NIH]

Pitch: The subjective awareness of the frequency or spectral distribution of a sound. [NIH]

Pituitary Gland: A small, unpaired gland situated in the sella turcica tissue. It is connected to the hypothalamus by a short stalk. [NIH]

Plants: Multicellular, eukaryotic life forms of the kingdom Plantae. They are characterized by a mainly photosynthetic mode of nutrition; essentially unlimited growth at localized regions of cell divisions (meristems); cellulose within cells providing rigidity; the absence of organs of locomotion; absense of nervous and sensory systems; and an alteration of haploid and diploid generations. [NIH]

Plasma: The clear, yellowish, fluid part of the blood that carries the blood cells. The proteins that form blood clots are in plasma. [NIH]

Plasma Volume: Volume of plasma in the circulation. It is usually measured by indicator dilution techniques. [NIH]

Pneumonia, Pneumocystis carinii: A pulmonary disease occurring in immunodeficient or malnourished patients or infants, characterized by dyspnea, tachypnea, and hypoxemia. Pneumocystis carinii pneumonia is a frequently seen opportunistic infection in AIDS. It is caused by the fungus Pneumocystis carinii. [NIH]

Podiatrist: A doctor who treats and takes care of people's feet. [NIH]

Poisoning: A condition or physical state produced by the ingestion, injection or inhalation of, or exposure to a deleterious agent. [NIH]

Policy Making: The decision process by which individuals, groups or institutions establish policies pertaining to plans, programs or procedures. [NIH]

Polypeptide: A peptide which on hydrolysis yields more than two amino acids; called tripeptides, tetrapeptides, etc. according to the number of amino acids contained. [EU]

Polyposis: The development of numerous polyps (growths that protrude from a mucous membrane). [NIH]

Posterior: Situated in back of, or in the back part of, or affecting the back or dorsal surface of the body. In lower animals, it refers to the caudal end of the body. [EU]

Postmenopausal: Refers to the time after menopause. Menopause is the time in a woman's life when menstrual periods stop permanently; also called "change of life." [NIH]

Postnatal: Occurring after birth, with reference to the newborn. [EU]

Practicability: A non-standard characteristic of an analytical procedure. It is dependent on the scope of the method and is determined by requirements such as sample throughout and costs. [NIH]

Practice Guidelines: Directions or principles presenting current or future rules of policy for the health care practitioner to assist him in patient care decisions regarding diagnosis, therapy, or related clinical circumstances. The guidelines may be developed by government agencies at any level, institutions, professional societies, governing boards, or by the convening of expert panels. The guidelines form a basis for the evaluation of all aspects of health care and delivery. [NIH]

Preclinical: Before a disease becomes clinically recognizable. [EU]

Precursor: Something that precedes. In biological processes, a substance from which another, usually more active or mature substance is formed. In clinical medicine, a sign or symptom that heralds another. [EU]

Prejudice: A preconceived judgment made without adequate evidence and not easily alterable by presentation of contrary evidence. [NIH]

Prenatal: Existing or occurring before birth, with reference to the fetus. [EU]

Prevalence: The total number of cases of a given disease in a specified population at a designated time. It is differentiated from incidence, which refers to the number of new cases in the population at a given time. [NIH]

Primary Prevention: Prevention of disease or mental disorders in susceptible individuals or populations through promotion of health, including mental health, and specific protection, as in immunization, as distinguished from the prevention of complications or after-effects of existing disease. [NIH]

Problem Solving: A learning situation involving more than one alternative from which a selection is made in order to attain a specific goal. [NIH]

Program Development: The process of formulating, improving, and expanding educational, managerial, or service-oriented work plans (excluding computer program development). [NIH]

Progression: Increase in the size of a tumor or spread of cancer in the body. [NIH]

Progressive: Advancing; going forward; going from bad to worse; increasing in scope or severity. [EU]

Projection: A defense mechanism, operating unconsciously, whereby that which is emotionally unacceptable in the self is rejected and attributed (projected) to others. [NIH]

Proline: A non-essential amino acid that is synthesized from glutamic acid. It is an essential component of collagen and is important for proper functioning of joints and tendons. [NIH]

Prone: Having the front portion of the body downwards. [NIH]

Propranolol: A widely used non-cardioselective beta-adrenergic antagonist. Propranolol is used in the treatment or prevention of many disorders including acute myocardial infarction, arrhythmias, angina pectoris, hypertension, hypertensive emergencies, hyperthyroidism, migraine, pheochromocytoma, menopause, and anxiety. [NIH]

Prospective Payment System: A system wherein reimbursement rates are set, for a given period of time, prior to the circumstances giving rise to actual reimbursement claims. [NIH]

Prospective study: An epidemiologic study in which a group of individuals (a cohort), all free of a particular disease and varying in their exposure to a possible risk factor, is followed over a specific amount of time to determine the incidence rates of the disease in the exposed and unexposed groups. [NIH]

Prostate: A gland in males that surrounds the neck of the bladder and the urethra. It secretes a substance that liquifies coagulated semen. It is situated in the pelvic cavity behind the lower part of the pubic symphysis, above the deep layer of the triangular ligament, and rests upon the rectum. [NIH]

Prostatectomy: Complete or partial surgical removal of the prostate. Three primary approaches are commonly employed: suprapubic - removal through an incision above the pubis and through the urinary bladder; retropubic - as for suprapubic but without entering the urinary bladder; and transurethral (transurethral resection of prostate). [NIH]

Protein S: The vitamin K-dependent cofactor of activated protein C. Together with protein C, it inhibits the action of factors VIIIa and Va. A deficiency in protein S can lead to recurrent venous and arterial thrombosis. [NIH]

Proteins: Polymers of amino acids linked by peptide bonds. The specific sequence of amino acids determines the shape and function of the protein. [NIH]

Proteolytic: 1. Pertaining to, characterized by, or promoting proteolysis. 2. An enzyme that promotes proteolysis (= the splitting of proteins by hydrolysis of the peptide bonds with formation of smaller polypeptides). [EU]

Protocol: The detailed plan for a clinical trial that states the trial's rationale, purpose, drug or vaccine dosages, length of study, routes of administration, who may participate, and other aspects of trial design. [NIH]

Protons: Stable elementary particles having the smallest known positive charge, found in the nuclei of all elements. The proton mass is less than that of a neutron. A proton is the nucleus of the light hydrogen atom, i.e., the hydrogen ion. [NIH]

Pruritic: Pertaining to or characterized by pruritus. [EU]

Psychiatric: Pertaining to or within the purview of psychiatry. [EU]

Psychiatry: The medical science that deals with the origin, diagnosis, prevention, and treatment of mental disorders. [NIH]

Psychic: Pertaining to the psyche or to the mind; mental. [EU]

Psychogenic: Produced or caused by psychic or mental factors rather than organic factors. [EU]

Psychology: The science dealing with the study of mental processes and behavior in man and animals. [NIH]

Psychometric testing: Psychological and mental testing and quantitative analysis of an individual's psychological traits or attitudes or mental processes. [NIH]

Psychoneuroimmunology: The field concerned with the interrelationship between the brain, behavior and the immune system. Neuropsychologic, neuroanatomic and psychosocial studies have demonstrated their role in accentuating or diminishing immune/allergic responses. [NIH]

Psychopathology: The study of significant causes and processes in the development of mental illness. [NIH]

Psychosomatic: Pertaining to the mind-body relationship; having bodily symptoms of psychic, emotional, or mental origin; called also psychophysiologic. [EU]

Psychotherapy: A generic term for the treatment of mental illness or emotional disturbances primarily by verbal or nonverbal communication. [NIH]

Public Health: Branch of medicine concerned with the prevention and control of disease and disability, and the promotion of physical and mental health of the population on the international, national, state, or municipal level. [NIH]

Public Policy: A course or method of action selected, usually by a government, from among alternatives to guide and determine present and future decisions. [NIH]

Publishing: "The business or profession of the commercial production and issuance of literature" (Webster's 3d). It includes the publisher, publication processes, editing and editors. Production may be by conventional printing methods or by electronic publishing. [NIH]

Pulmonary: Relating to the lungs. [NIH]

Pulmonary Artery: The short wide vessel arising from the conus arteriosus of the right ventricle and conveying unaerated blood to the lungs. [NIH]

Pulmonary Edema: An accumulation of an excessive amount of watery fluid in the lungs, may be caused by acute exposure to dangerous concentrations of irritant gasses. [NIH]

Pulmonary hypertension: Abnormally high blood pressure in the arteries of the lungs. [NIH]

Pulse: The rhythmical expansion and contraction of an artery produced by waves of pressure caused by the ejection of blood from the left ventricle of the heart as it contracts. [NIH]

Quality of Life: A generic concept reflecting concern with the modification and enhancement of life attributes, e.g., physical, political, moral and social environment. [NIH]

Race: A population within a species which exhibits general similarities within itself, but is both discontinuous and distinct from other populations of that species, though not sufficiently so as to achieve the status of a taxon. [NIH]

Radiation: Emission or propagation of electromagnetic energy (waves/rays), or the waves/rays themselves; a stream of electromagnetic particles (electrons, neutrons, protons, alpha particles) or a mixture of these. The most common source is the sun. [NIH]

Radiation Oncology: A subspecialty of medical oncology and radiology concerned with the radiotherapy of cancer. [NIH]

Radiation therapy: The use of high-energy radiation from x-rays, gamma rays, neutrons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body in the area near cancer cells (internal radiation therapy, implant radiation, or brachytherapy). Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that circulates throughout the body. Also called radiotherapy. [NIH]

Radical prostatectomy: Surgery to remove the entire prostate. The two types of radical prostatectomy are retropubic prostatectomy and perineal prostatectomy. [NIH]

Radioactive: Giving off radiation. [NIH]

Radioimmunotherapy: Radiotherapy where cytotoxic radionuclides are linked to antibodies in order to deliver toxins directly to tumor targets. Therapy with targeted radiation rather than antibody-targeted toxins (immunotoxins) has the advantage that adjacent tumor cells, which lack the appropriate antigenic determinants, can be destroyed by radiation cross-fire. Radioimmunotherapy is sometimes called targeted radiotherapy, but this latter term can also refer to radionuclides linked to non-immune molecules (radiotherapy). [NIH]

Radiolabeled: Any compound that has been joined with a radioactive substance. [NIH]

Radiology: A specialty concerned with the use of x-ray and other forms of radiant energy in the diagnosis and treatment of disease. [NIH]

Radionuclide Ventriculography: Imaging of a ventricle of the heart after the injection of a radioactive contrast medium. The technique is less invasive than cardiac catheterization and is used to assess ventricular function. [NIH]

Radiotherapy: The use of ionizing radiation to treat malignant neoplasms and other benign conditions. The most common forms of ionizing radiation used as therapy are x-rays, gamma rays, and electrons. A special form of radiotherapy, targeted radiotherapy, links a cytotoxic radionuclide to a molecule that targets the tumor. When this molecule is an antibody or other immunologic molecule, the technique is called radioimmunotherapy. [NIH]

Random Allocation: A process involving chance used in therapeutic trials or other research endeavor for allocating experimental subjects, human or animal, between treatment and control groups, or among treatment groups. It may also apply to experiments on inanimate objects. [NIH]

Randomization: Also called random allocation. Is allocation of individuals to groups, e.g., for experimental and control regimens, by chance. Within the limits of chance variation, random allocation should make the control and experimental groups similar at the start of

an investigation and ensure that personal judgment and prejudices of the investigator do not influence allocation. [NIH]

Randomized: Describes an experiment or clinical trial in which animal or human subjects are assigned by chance to separate groups that compare different treatments. [NIH]

Randomized clinical trial: A study in which the participants are assigned by chance to separate groups that compare different treatments; neither the researchers nor the participants can choose which group. Using chance to assign people to groups means that the groups will be similar and that the treatments they receive can be compared objectively. At the time of the trial, it is not known which treatment is best. It is the patient's choice to be in a randomized trial. [NIH]

Reaction Time: The time from the onset of a stimulus until the organism responds. [NIH]

Reagent: A substance employed to produce a chemical reaction so as to detect, measure, produce, etc., other substances. [EU]

Receptor: A molecule inside or on the surface of a cell that binds to a specific substance and causes a specific physiologic effect in the cell. [NIH]

Receptors, Serotonin: Cell-surface proteins that bind serotonin and trigger intracellular changes which influence the behavior of cells. Several types of serotonin receptors have been recognized which differ in their pharmacology, molecular biology, and mode of action. [NIH]

Reconstitution: 1. A type of regeneration in which a new organ forms by the rearrangement of tissues rather than from new formation at an injured surface. 2. The restoration to original form of a substance previously altered for preservation and storage, as the restoration to a liquid state of blood serum or plasma that has been dried and stored. [EU]

Rectal: By or having to do with the rectum. The rectum is the last 8 to 10 inches of the large intestine and ends at the anus. [NIH]

Rectum: The last 8 to 10 inches of the large intestine. [NIH]

Recurrence: The return of a sign, symptom, or disease after a remission. [NIH]

Reductase: Enzyme converting testosterone to dihydrotestosterone. [NIH]

Refer: To send or direct for treatment, aid, information, de decision. [NIH]

Refraction: A test to determine the best eyeglasses or contact lenses to correct a refractive error (myopia, hyperopia, or astigmatism). [NIH]

Refractory: Not readily yielding to treatment. [EU]

Regeneration: The natural renewal of a structure, as of a lost tissue or part. [EU]

Regimen: A treatment plan that specifies the dosage, the schedule, and the duration of treatment. [NIH]

Regurgitation: A backward flowing, as the casting up of undigested food, or the backward flowing of blood into the heart, or between the chambers of the heart when a valve is incompetent. [EU]

Rehabilitative: Instruction of incapacitated individuals or of those affected with some mental disorder, so that some or all of their lost ability may be regained. [NIH]

Relapse: The return of signs and symptoms of cancer after a period of improvement. [NIH]

Relaxation Techniques: The use of muscular relaxation techniques in treatment. [NIH]

Reliability: Used technically, in a statistical sense, of consistency of a test with itself, i. e. the extent to which we can assume that it will yield the same result if repeated a second time. [NIH]

Remission: A decrease in or disappearance of signs and symptoms of cancer. In partial

remission, some, but not all, signs and symptoms of cancer have disappeared. In complete remission, all signs and symptoms of cancer have disappeared, although there still may be cancer in the body. [NIH]

Research Design: A plan for collecting and utilizing data so that desired information can be obtained with sufficient precision or so that an hypothesis can be tested properly. [NIH]

Resolving: The ability of the eye or of a lens to make small objects that are close together, separately visible; thus revealing the structure of an object. [NIH]

Respiration: The act of breathing with the lungs, consisting of inspiration, or the taking into the lungs of the ambient air, and of expiration, or the expelling of the modified air which contains more carbon dioxide than the air taken in (Blakiston's Gould Medical Dictionary, 4th ed.). This does not include tissue respiration (= oxygen consumption) or cell respiration (= cell respiration). [NIH]

Restoration: Broad term applied to any inlay, crown, bridge or complete denture which restores or replaces loss of teeth or oral tissues. [NIH]

Retinal: 1. Pertaining to the retina. 2. The aldehyde of retinol, derived by the oxidative enzymatic splitting of absorbed dietary carotene, and having vitamin A activity. In the retina, retinal combines with opsins to form visual pigments. One isomer, 11-cis retinal combines with opsin in the rods (scotopsin) to form rhodopsin, or visual purple. Another, all-trans retinal (trans-r.); visual yellow; xanthopsin) results from the bleaching of rhodopsin by light, in which the 11-cis form is converted to the all-trans form. Retinal also combines with opsins in the cones (photopsins) to form the three pigments responsible for colour vision. Called also retinal, and retinene1. [EU]

Retropubic: A potential space between the urinary bladder and the symphisis and body of the pubis. [NIH]

Retropubic prostatectomy: Surgery to remove the prostate through an incision made in the abdominal wall. [NIH]

Reverberant: The sound field prevailing in a large enclosure with moderately reflecting surfaces. [NIH]

Rheumatism: A group of disorders marked by inflammation or pain in the connective tissue structures of the body. These structures include bone, cartilage, and fat. [NIH]

Rheumatoid: Resembling rheumatism. [EU]

Rheumatoid arthritis: A form of arthritis, the cause of which is unknown, although infection, hypersensitivity, hormone imbalance and psychologic stress have been suggested as possible causes. [NIH]

Risk factor: A habit, trait, condition, or genetic alteration that increases a person's chance of developing a disease. [NIH]

Rod: A reception for vision, located in the retina. [NIH]

Role Playing: The adopting or performing the role of another significant individual in order to gain insight into the behavior of that person. [NIH]

Rural Population: The inhabitants of rural areas or of small towns classified as rural. [NIH]

Saliva: The clear, viscous fluid secreted by the salivary glands and mucous glands of the mouth. It contains mucins, water, organic salts, and ptylin. [NIH]

Salivary: The duct that convey saliva to the mouth. [NIH]

Salivary glands: Glands in the mouth that produce saliva. [NIH]

Sanitation: The development and establishment of environmental conditions favorable to the health of the public. [NIH]

Saphenous: Applied to certain structures in the leg, e. g. nerve vein. [NIH]

Saphenous Vein: The vein which drains the foot and leg. [NIH]

Saturated fat: A type of fat found in greatest amounts in foods from animals, such as fatty cuts of meat, poultry with the skin, whole-milk dairy products, lard, and in some vegetable oils, including coconut, palm kernel, and palm oils. Saturated fat raises blood cholesterol more than anything else eaten. On a Step I Diet, no more than 8 to 10 percent of total calories should come from saturated fat, and in the Step II Diet, less than 7 percent of the day's total calories should come from saturated fat. [NIH]

Schizoid: Having qualities resembling those found in greater degree in schizophrenics; a person of schizoid personality. [NIH]

Schizophrenia: A mental disorder characterized by a special type of disintegration of the personality. [NIH]

Schizotypal Personality Disorder: A personality disorder in which there are oddities of thought (magical thinking, paranoid ideation, suspiciousness), perception (illusions, depersonalization), speech (digressive, vague, overelaborate), and behavior (inappropriate affect in social interactions, frequently social isolation) that are not severe enough to characterize schizophrenia. [NIH]

Scleroderma: A chronic disorder marked by hardening and thickening of the skin. Scleroderma can be localized or it can affect the entire body (systemic). [NIH]

Sclerosis: A pathological process consisting of hardening or fibrosis of an anatomical structure, often a vessel or a nerve. [NIH]

Screening: Checking for disease when there are no symptoms. [NIH]

Sebaceous: Gland that secretes sebum. [NIH]

Sebaceous gland: Gland that secretes sebum. [NIH]

Secretion: 1. The process of elaborating a specific product as a result of the activity of a gland; this activity may range from separating a specific substance of the blood to the elaboration of a new chemical substance. 2. Any substance produced by secretion. [EU]

Secretory: Secreting; relating to or influencing secretion or the secretions. [NIH]

Sedative: 1. Allaying activity and excitement. 2. An agent that allays excitement. [EU]

Sedentary: 1. Sitting habitually; of inactive habits. 2. Pertaining to a sitting posture. [EU]

Self Care: Performance of activities or tasks traditionally performed by professional health care providers. The concept includes care of oneself or one's family and friends. [NIH]

Semen: The thick, yellowish-white, viscid fluid secretion of male reproductive organs discharged upon ejaculation. In addition to reproductive organ secretions, it contains spermatozoa and their nutrient plasma. [NIH]

Senile: Relating or belonging to old age; characteristic of old age; resulting from infirmity of old age. [NIH]

Sensor: A device designed to respond to physical stimuli such as temperature, light, magnetism or movement and transmit resulting impulses for interpretation, recording, movement, or operating control. [NIH]

Serotonin: A biochemical messenger and regulator, synthesized from the essential amino acid L-tryptophan. In humans it is found primarily in the central nervous system, gastrointestinal tract, and blood platelets. Serotonin mediates several important physiological functions including neurotransmission, gastrointestinal motility, hemostasis, and cardiovascular integrity. Multiple receptor families (receptors, serotonin) explain the broad physiological actions and distribution of this biochemical mediator. [NIH]

Serum: The clear liquid part of the blood that remains after blood cells and clotting proteins have been removed. [NIH]

Sex Characteristics: Those characteristics that distinguish one sex from the other. The primary sex characteristics are the ovaries and testes and their related hormones. Secondary sex characteristics are those which are masculine or feminine but not directly related to reproduction. [NIH]

Shock: The general bodily disturbance following a severe injury; an emotional or moral upset occasioned by some disturbing or unexpected experience; disruption of the circulation, which can upset all body functions: sometimes referred to as circulatory shock. [NIH]

Sick Role: Behavior patterns consistent with those expected of an individual functioning in a state of ill health. [NIH]

Side effect: A consequence other than the one(s) for which an agent or measure is used, as the adverse effects produced by a drug, especially on a tissue or organ system other than the one sought to be benefited by its administration. [EU]

Signs and Symptoms: Clinical manifestations that can be either objective when observed by a physician, or subjective when perceived by the patient. [NIH]

Skeletal: Having to do with the skeleton (boney part of the body). [NIH]

Skeleton: The framework that supports the soft tissues of vertebrate animals and protects many of their internal organs. The skeletons of vertebrates are made of bone and/or cartilage. [NIH]

Skin Care: Maintenance of the hygienic state of the skin under optimal conditions of cleanliness and comfort. Effective in skin care are proper washing, bathing, cleansing, and the use of soaps, detergents, oils, etc. In various disease states, therapeutic and protective solutions and ointments are useful. The care of the skin is particularly important in various occupations, in exposure to sunlight, in neonates, and in decubitus ulcer. [NIH]

Skin graft: Skin that is moved from one part of the body to another. [NIH]

Small intestine: The part of the digestive tract that is located between the stomach and the large intestine. [NIH]

Smooth muscle: Muscle that performs automatic tasks, such as constricting blood vessels. [NIH]

Soaps: Sodium or potassium salts of long chain fatty acids. These detergent substances are obtained by boiling natural oils or fats with caustic alkali. Sodium soaps are harder and are used as topical anti-infectives and vehicles in pills and liniments; potassium soaps are soft, used as vehicles for ointments and also as topical antimicrobials. [NIH]

Social Behavior: Any behavior caused by or affecting another individual, usually of the same species. [NIH]

Social Environment: The aggregate of social and cultural institutions, forms, patterns, and processes that influence the life of an individual or community. [NIH]

Social Isolation: The separation of individuals or groups resulting in the lack of or minimizing of social contact and/or communication. This separation may be accomplished by physical separation, by social barriers and by psychological mechanisms. In the latter, there may be interaction but no real communication. [NIH]

Social Problems: Situations affecting a significant number of people, that are believed to be sources of difficulty or threaten the stability of the community, and that require programs of amelioration. [NIH]

Social Support: Support systems that provide assistance and encouragement to individuals

with physical or emotional disabilities in order that they may better cope. Informal social support is usually provided by friends, relatives, or peers, while formal assistance is provided by churches, groups, etc. [NIH]

Social Work: The use of community resources, individual case work, or group work to promote the adaptive capacities of individuals in relation to their social and economic environments. It includes social service agencies. [NIH]

Socialization: The training or molding of an individual through various relationships, educational agencies, and social controls, which enables him to become a member of a particular society. [NIH]

Sodium: An element that is a member of the alkali group of metals. It has the atomic symbol Na, atomic number 11, and atomic weight 23. With a valence of 1, it has a strong affinity for oxygen and other nonmetallic elements. Sodium provides the chief cation of the extracellular body fluids. Its salts are the most widely used in medicine. (From Dorland, 27th ed) Physiologically the sodium ion plays a major role in blood pressure regulation, maintenance of fluid volume, and electrolyte balance. [NIH]

Soft tissue: Refers to muscle, fat, fibrous tissue, blood vessels, or other supporting tissue of the body. [NIH]

Solid tumor: Cancer of body tissues other than blood, bone marrow, or the lymphatic system. [NIH]

Solitary Nucleus: Gray matter located in the dorsomedial part of the medulla oblongata associated with the solitary tract. The solitary nucleus receives inputs from most organ systems including the terminations of the facial, glossopharyngeal, and vagus nerves. It is a major coordinator of autonomic nervous system regulation of cardiovascular, respiratory, gustatory, gastrointestinal, and chemoreceptive aspects of homeostasis. The solitary nucleus is also notable for the large number of neurotransmitters which are found therein. [NIH]

Solvent: 1. Dissolving; effecting a solution. 2. A liquid that dissolves or that is capable of dissolving; the component of a solution that is present in greater amount. [EU]

Soma: The body as distinct from the mind; all the body tissue except the germ cells; all the axial body. [NIH]

Somatic: 1. Pertaining to or characteristic of the soma or body. 2. Pertaining to the body wall in contrast to the viscera. [EU]

Sound wave: An alteration of properties of an elastic medium, such as pressure, particle displacement, or density, that propagates through the medium, or a superposition of such alterations. [NIH]

Spasm: An involuntary contraction of a muscle or group of muscles. Spasms may involve skeletal muscle or smooth muscle. [NIH]

Spastic: 1. Of the nature of or characterized by spasms. 2. Hypertonic, so that the muscles are stiff and the movements awkward. 3. A person exhibiting spasticity, such as occurs in spastic paralysis or in cerebral palsy. [EU]

Spasticity: A state of hypertonicity, or increase over the normal tone of a muscle, with heightened deep tendon reflexes. [EU]

Specialist: In medicine, one who concentrates on 1 special branch of medical science. [NIH]

Species: A taxonomic category subordinate to a genus (or subgenus) and superior to a subspecies or variety, composed of individuals possessing common characters distinguishing them from other categories of individuals of the same taxonomic level. In taxonomic nomenclature, species are designated by the genus name followed by a Latin or Latinized adjective or noun. [EU]

Spectrum: A charted band of wavelengths of electromagnetic vibrations obtained by refraction and diffraction. By extension, a measurable range of activity, such as the range of bacteria affected by an antibiotic (antibacterial s.) or the complete range of manifestations of a disease. [EU]

Speech Perception: The process whereby an utterance is decoded into a representation in terms of linguistic units (sequences of phonetic segments which combine to form lexical and grammatical morphemes). [NIH]

Sphincter: A ringlike band of muscle fibres that constricts a passage or closes a natural orifice; called also musculus sphincter. [EU]

Spinal cord: The main trunk or bundle of nerves running down the spine through holes in the spinal bone (the vertebrae) from the brain to the level of the lower back. [NIH]

Spinal tap: A procedure in which a needle is put into the lower part of the spinal column to collect cerebrospinal fluid or to give anticancer drugs intrathecally. Also called a lumbar puncture. [NIH]

Statistically significant: Describes a mathematical measure of difference between groups. The difference is said to be statistically significant if it is greater than what might be expected to happen by chance alone. [NIH]

Stem Cells: Relatively undifferentiated cells of the same lineage (family type) that retain the ability to divide and cycle throughout postnatal life to provide cells that can become specialized and take the place of those that die or are lost. [NIH]

Sterility: 1. The inability to produce offspring, i.e., the inability to conceive (female s.) or to induce conception (male s.). 2. The state of being aseptic, or free from microorganisms. [EU]

Steroid: A group name for lipids that contain a hydrogenated cyclopentanoperhydrophenanthrene ring system. Some of the substances included in this group are progesterone, adrenocortical hormones, the gonadal hormones, cardiac aglycones, bile acids, sterols (such as cholesterol), toad poisons, saponins, and some of the carcinogenic hydrocarbons. [EU]

Stimulant: 1. Producing stimulation; especially producing stimulation by causing tension on muscle fibre through the nervous tissue. 2. An agent or remedy that produces stimulation. [EU]

Stimulus: That which can elicit or evoke action (response) in a muscle, nerve, gland or other excitable issue, or cause an augmenting action upon any function or metabolic process. [NIH]

Stomach: An organ of digestion situated in the left upper quadrant of the abdomen between the termination of the esophagus and the beginning of the duodenum. [NIH]

Stool: The waste matter discharged in a bowel movement; feces. [NIH]

Stress: Forcibly exerted influence; pressure. Any condition or situation that causes strain or tension. Stress may be either physical or psychologic, or both. [NIH]

Stress management: A set of techniques used to help an individual cope more effectively with difficult situations in order to feel better emotionally, improve behavioral skills, and often to enhance feelings of control. Stress management may include relaxation exercises, assertiveness training, cognitive restructuring, time management, and social support. It can be delivered either on a one-to-one basis or in a group format. [NIH]

Stroke: Sudden loss of function of part of the brain because of loss of blood flow. Stroke may be caused by a clot (thrombosis) or rupture (hemorrhage) of a blood vessel to the brain. [NIH]

Stroke Volume: The amount of blood pumped out of the heart per beat not to be confused with cardiac output (volume/time). [NIH]

Students, Medical: Individuals enrolled in a school of medicine or a formal educational program in medicine. [NIH]

Stupor: Partial or nearly complete unconsciousness, manifested by the subject's responding only to vigorous stimulation. Also, in psychiatry, a disorder marked by reduced responsiveness. [EU]

Subacute: Somewhat acute; between acute and chronic. [EU]

Subarachnoid: Situated or occurring between the arachnoid and the pia mater. [EU]

Subclinical: Without clinical manifestations; said of the early stage(s) of an infection or other disease or abnormality before symptoms and signs become apparent or detectable by clinical examination or laboratory tests, or of a very mild form of an infection or other disease or abnormality. [EU]

Subspecies: A category intermediate in rank between species and variety, based on a smaller number of correlated characters than are used to differentiate species and generally conditioned by geographical and/or ecological occurrence. [NIH]

Substance P: An eleven-amino acid neurotransmitter that appears in both the central and peripheral nervous systems. It is involved in transmission of pain, causes rapid contractions of the gastrointestinal smooth muscle, and modulates inflammatory and immune responses. [NIH]

Substrate: A substance upon which an enzyme acts. [EU]

Support group: A group of people with similar disease who meet to discuss how better to cope with their cancer and treatment. [NIH]

Suppression: A conscious exclusion of disapproved desire contrary with repression, in which the process of exclusion is not conscious. [NIH]

Sympathetic Nervous System: The thoracolumbar division of the autonomic nervous system. Sympathetic preganglionic fibers originate in neurons of the intermediolateral column of the spinal cord and project to the paravertebral and prevertebral ganglia, which in turn project to target organs. The sympathetic nervous system mediates the body's response to stressful situations, i.e., the fight or flight reactions. It often acts reciprocally to the parasympathetic system. [NIH]

Sympathomimetic: 1. Mimicking the effects of impulses conveyed by adrenergic postganglionic fibres of the sympathetic nervous system. 2. An agent that produces effects similar to those of impulses conveyed by adrenergic postganglionic fibres of the sympathetic nervous system. Called also adrenergic. [EU]

Symphysis: A secondary cartilaginous joint. [NIH]

Symptomatic: Having to do with symptoms, which are signs of a condition or disease. [NIH]

Symptomatology: 1. That branch of medicine with treats of symptoms; the systematic discussion of symptoms. 2. The combined symptoms of a disease. [EU]

Synaptic: Pertaining to or affecting a synapse (= site of functional apposition between neurons, at which an impulse is transmitted from one neuron to another by electrical or chemical means); pertaining to synapsis (= pairing off in point-for-point association of homologous chromosomes from the male and female pronuclei during the early prophase of meiosis). [EU]

Synaptic Transmission: The communication from a neuron to a target (neuron, muscle, or secretory cell) across a synapse. In chemical synaptic transmission, the presynaptic neuron releases a neurotransmitter that diffuses across the synaptic cleft and binds to specific synaptic receptors. These activated receptors modulate ion channels and/or second-messenger systems to influence the postsynaptic cell. Electrical transmission is less common

in the nervous system, and, as in other tissues, is mediated by gap junctions. [NIH]

Synergistic: Acting together; enhancing the effect of another force or agent. [EU]

Systemic: Affecting the entire body. [NIH]

Systolic: Indicating the maximum arterial pressure during contraction of the left ventricle of the heart. [EU]

Tachypnea: Rapid breathing. [NIH]

Tardive: Marked by lateness, late; said of a disease in which the characteristic lesion is late in appearing. [EU]

Taste Buds: Small sensory organs which contain gustatory receptor cells, basal cells, and supporting cells. Taste buds in humans are found in the epithelia of the tongue, palate, and pharynx. They are innervated by the chorda tympani nerve (a branch of the facial nerve) and the glossopharyngeal nerve. [NIH]

Tear Gases: Gases that irritate the eyes, throat, or skin. Severe lacrimation develops upon irritation of the eyes. [NIH]

Telecommunications: Transmission of information over distances via electronic means. [NIH]

Temperament: Predisposition to react to one's environment in a certain way; usually refers to mood changes. [NIH]

Terminator: A DNA sequence sited at the end of a transcriptional unit that signals the end of transcription. [NIH]

Testosterone: A hormone that promotes the development and maintenance of male sex characteristics. [NIH]

Therapeutics: The branch of medicine which is concerned with the treatment of diseases, palliative or curative. [NIH]

Thermal: Pertaining to or characterized by heat. [EU]

Thorax: A part of the trunk between the neck and the abdomen; the chest. [NIH]

Threshold: For a specified sensory modality (e. g. light, sound, vibration), the lowest level (absolute threshold) or smallest difference (difference threshold, difference limen) or intensity of the stimulus discernible in prescribed conditions of stimulation. [NIH]

Thrombocytopenia: A decrease in the number of blood platelets. [NIH]

Thrombosis: The formation or presence of a blood clot inside a blood vessel. [NIH]

Thrombus: An aggregation of blood factors, primarily platelets and fibrin with entrapment of cellular elements, frequently causing vascular obstruction at the point of its formation. Some authorities thus differentiate thrombus formation from simple coagulation or clot formation. [EU]

Time Management: Planning and control of time to improve efficiency and effectiveness. [NIH]

Tinnitus: Sounds that are perceived in the absence of any external noise source which may take the form of buzzing, ringing, clicking, pulsations, and other noises. Objective tinnitus refers to noises generated from within the ear or adjacent structures that can be heard by other individuals. The term subjective tinnitus is used when the sound is audible only to the affected individual. Tinnitus may occur as a manifestation of cochlear diseases; vestibulocochlear nerve diseases; intracranial hypertension; craniocerebral trauma; and other conditions. [NIH]

Tissue: A group or layer of cells that are alike in type and work together to perform a

specific function. [NIH]

Tolerance: 1. The ability to endure unusually large doses of a drug or toxin. 2. Acquired drug tolerance; a decreasing response to repeated constant doses of a drug or the need for increasing doses to maintain a constant response. [EU]

Tonicity: The normal state of muscular tension. [NIH]

Tooth Preparation: Procedures carried out with regard to the teeth or tooth structures preparatory to specified dental therapeutic and surgical measures. [NIH]

Toxic: Having to do with poison or something harmful to the body. Toxic substances usually cause unwanted side effects. [NIH]

Toxicity: The quality of being poisonous, especially the degree of virulence of a toxic microbe or of a poison. [EU]

Toxicology: The science concerned with the detection, chemical composition, and pharmacologic action of toxic substances or poisons and the treatment and prevention of toxic manifestations. [NIH]

Toxins: Specific, characterizable, poisonous chemicals, often proteins, with specific biological properties, including immunogenicity, produced by microbes, higher plants, or animals. [NIH]

Trachea: The cartilaginous and membranous tube descending from the larynx and branching into the right and left main bronchi. [NIH]

Transcutaneous: Transdermal. [EU]

Transfection: The uptake of naked or purified DNA into cells, usually eukaryotic. It is analogous to bacterial transformation. [NIH]

Translational: The cleavage of signal sequence that directs the passage of the protein through a cell or organelle membrane. [NIH]

Transmitter: A chemical substance which effects the passage of nerve impulses from one cell to the other at the synapse. [NIH]

Transplantation: Transference of a tissue or organ, alive or dead, within an individual, between individuals of the same species, or between individuals of different species. [NIH]

Trauma: Any injury, wound, or shock, must frequently physical or structural shock, producing a disturbance. [NIH]

Treatment Outcome: Evaluation undertaken to assess the results or consequences of management and procedures used in combating disease in order to determine the efficacy, effectiveness, safety, practicability, etc., of these interventions in individual cases or series. [NIH]

Tricuspid Atresia: Absence of the orifice between the right atrium and ventricle, with the presence of an atrial defect through which all the systemic venous return reaches the left heart. As a result, there is left ventricular hypertrophy because the right ventricle is absent or not functional. [NIH]

Tricyclic: Containing three fused rings or closed chains in the molecular structure. [EU]

Tryptophan: An essential amino acid that is necessary for normal growth in infants and for nitrogen balance in adults. It is a precursor serotonin and niacin. [NIH]

Tuberculosis: Any of the infectious diseases of man and other animals caused by species of Mycobacterium. [NIH]

Tumor marker: A substance sometimes found in an increased amount in the blood, other body fluids, or tissues and which may mean that a certain type of cancer is in the body.

Examples of tumor markers include CA 125 (ovarian cancer), CA 15-3 (breast cancer), CEA (ovarian, lung, breast, pancreas, and gastrointestinal tract cancers), and PSA (prostate cancer). Also called biomarker. [NIH]

Tungsten: A metallic element with the atomic symbol W, atomic number 74, and atomic weight 183.85. It is used in many manufacturing applications, including increasing the hardness, toughness, and tensile strength of steel; manufacture of filaments for incandescent light bulbs; and in contact points for automotive and electrical apparatus. [NIH]

Type 2 diabetes: Usually characterized by a gradual onset with minimal or no symptoms of metabolic disturbance and no requirement for exogenous insulin. The peak age of onset is 50 to 60 years. Obesity and possibly a genetic factor are usually present. [NIH]

Tyrosine: A non-essential amino acid. In animals it is synthesized from phenylalanine. It is also the precursor of epinephrine, thyroid hormones, and melanin. [NIH]

Ulcerative colitis: Chronic inflammation of the colon that produces ulcers in its lining. This condition is marked by abdominal pain, cramps, and loose discharges of pus, blood, and mucus from the bowel. [NIH]

Ultrasound test: A test that bounces sound waves off tissues and internal organs and changes the echoes into pictures (sonograms). [NIH]

Unconscious: Experience which was once conscious, but was subsequently rejected, as the "personal unconscious". [NIH]

Universal Precautions: Prudent standard preventive measures to be taken by professional and other health personnel in contact with persons afflicted with a communicable disease, to avoid contracting the disease by contagion or infection. Precautions are especially applicable in the diagnosis and care of AIDS patients. [NIH]

Ureters: Tubes that carry urine from the kidneys to the bladder. [NIH]

Urethra: The tube through which urine leaves the body. It empties urine from the bladder. [NIH]

Urinary: Having to do with urine or the organs of the body that produce and get rid of urine. [NIH]

Urinary tract: The organs of the body that produce and discharge urine. These include the kidneys, ureters, bladder, and urethra. [NIH]

Urinary tract infection: An illness caused by harmful bacteria growing in the urinary tract. [NIH]

Urinate: To release urine from the bladder to the outside. [NIH]

Urine: Fluid containing water and waste products. Urine is made by the kidneys, stored in the bladder, and leaves the body through the urethra. [NIH]

Uterus: The small, hollow, pear-shaped organ in a woman's pelvis. This is the organ in which a fetus develops. Also called the womb. [NIH]

Vaccine: A substance or group of substances meant to cause the immune system to respond to a tumor or to microorganisms, such as bacteria or viruses. [NIH]

Vagal: Pertaining to the vagus nerve. [EU]

Vagina: The muscular canal extending from the uterus to the exterior of the body. Also called the birth canal. [NIH]

Vaginal: Of or having to do with the vagina, the birth canal. [NIH]

Vaginitis: Inflammation of the vagina characterized by pain and a purulent discharge. [NIH]

Vagus Nerve: The 10th cranial nerve. The vagus is a mixed nerve which contains somatic

afferents (from skin in back of the ear and the external auditory meatus), visceral afferents (from the pharynx, larynx, thorax, and abdomen), parasympathetic efferents (to the thorax and abdomen), and efferents to striated muscle (of the larynx and pharynx). [NIH]

Vascular: Pertaining to blood vessels or indicative of a copious blood supply. [EU]

Vascular Resistance: An expression of the resistance offered by the systemic arterioles, and to a lesser extent by the capillaries, to the flow of blood. [NIH]

Vasoconstriction: Narrowing of the blood vessels without anatomic change, for which constriction, pathologic is used. [NIH]

Vasodilator: An agent that widens blood vessels. [NIH]

VE: The total volume of gas either inspired or expired in one minute. [NIH]

Venous: Of or pertaining to the veins. [EU]

Ventricle: One of the two pumping chambers of the heart. The right ventricle receives oxygen-poor blood from the right atrium and pumps it to the lungs through the pulmonary artery. The left ventricle receives oxygen-rich blood from the left atrium and pumps it to the body through the aorta. [NIH]

Ventricular: Pertaining to a ventricle. [EU]

Ventricular Function: The hemodynamic and electrophysiological action of the ventricles. [NIH]

Vestibulocochlear Nerve: The 8th cranial nerve. The vestibulocochlear nerve has a cochlear part (cochlear nerve) which is concerned with hearing and a vestibular part (vestibular nerve) which mediates the sense of balance and head position. The fibers of the cochlear nerve originate from neurons of the spiral ganglion and project to the cochlear nuclei (cochlear nucleus). The fibers of the vestibular nerve arise from neurons of Scarpa's ganglion and project to the vestibular nuclei. [NIH]

Vestibulocochlear Nerve Diseases: Diseases of the vestibular and/or cochlear (acoustic) nerves, which join to form the vestibulocochlear nerve. Vestibular neuritis, cochlear neuritis, and acoustic neuromas are relatively common conditions that affect these nerves. Clinical manifestations vary with which nerve is primarily affected, and include hearing loss, vertigo, and tinnitus. [NIH]

Veterinary Medicine: The medical science concerned with the prevention, diagnosis, and treatment of diseases in animals. [NIH]

Viral: Pertaining to, caused by, or of the nature of virus. [EU]

Viral Load: The quantity of measurable virus in the blood. Change in viral load, measured in plasma, is used as a surrogate marker in HIV disease progression. [NIH]

Virus: Submicroscopic organism that causes infectious disease. In cancer therapy, some viruses may be made into vaccines that help the body build an immune response to, and kill, tumor cells. [NIH]

Viscera: Any of the large interior organs in any one of the three great cavities of the body, especially in the abdomen. [NIH]

Visceral: , from viscus a viscus) pertaining to a viscus. [EU]

Visceral Afferents: The sensory fibers innervating the viscera. [NIH]

Vitro: Descriptive of an event or enzyme reaction under experimental investigation occurring outside a living organism. Parts of an organism or microorganism are used together with artificial substrates and/or conditions. [NIH]

Voice Disorders: Disorders of voice pitch, loudness, or quality. Dysphonia refers to

impaired utterance of sounds by the vocal folds. [NIH]

Void: To urinate, empty the bladder. [NIH]

Warts: Benign epidermal proliferations or tumors; some are viral in origin. [NIH]

White blood cell: A type of cell in the immune system that helps the body fight infection and disease. White blood cells include lymphocytes, granulocytes, macrophages, and others. [NIH]

Withdrawal: 1. A pathological retreat from interpersonal contact and social involvement, as may occur in schizophrenia, depression, or schizoid avoidant and schizotypal personality disorders. 2. (DSM III-R) A substance-specific organic brain syndrome that follows the cessation of use or reduction in intake of a psychoactive substance that had been regularly used to induce a state of intoxication. [EU]

Xenograft: The cells of one species transplanted to another species. [NIH]

X-ray: High-energy radiation used in low doses to diagnose diseases and in high doses to treat cancer. [NIH]

Zidovudine: A dideoxynucleoside compound in which the 3'-hydroxy group on the sugar moiety has been replaced by an azido group. This modification prevents the formation of phosphodiester linkages which are needed for the completion of nucleic acid chains. The compound is a potent inhibitor of HIV replication, acting as a chain-terminator of viral DNA during reverse transcription. It improves immunologic function, partially reverses the HIV-induced neurological dysfunction, and improves certain other clinical abnormalities associated with AIDS. Its principal toxic effect is dose-dependent suppression of bone marrow, resulting in anemia and leukopenia. [NIH]

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