

## Life Stresses and Mind-Body Therapies

**S**tress: We all live with it, whether we are aware of it or not. It can be produced by interactions with our families or jobs; knowledge of current events, such as threats of a terrorist attack or a plunge in the stock market; or living with a disease or medical condition, either in ourselves or in a loved one.

What is stress? Generally speaking, stress is caused by events in the environment that pose a threat to our safety and well-being. The mind interprets what is happening, and the body responds. The pioneering research into the effects of stress was done by Dr. Hans Selye in the 1930s, who defined stress as the body's nonspecific response to any demands made upon it. Stress can be negative (such as an illness or an argument) or positive (such as accepting a new job or falling in love). In either case, the body's

response, including the release of hormones and chemicals, is the same, in the sense of disrupting homeostasis (i.e., stability in the normal body—for example, stability of internal temperature).

Sometimes stress can be useful. When stress is mild or lasts for a short time, it can help spur us on—for example, to avoid a dangerous situation, meet a deadline at

work, or compete in an athletic event. But when stress is intense or lasts a long time (i.e., when the body and mind stay on “red alert” for weeks, months, or even years), physical and mental health problems can result—including headaches, stomach problems, insomnia, depression, problems concentrating, physical pain, chest pain, and heart disease. Stress is expensive. The costs of health care for U.S. workers with high levels of job stress are

nearly 50 percent higher than those for other workers. In short, stress is a significant public health problem.

Accordingly, NCCAM is sponsoring studies on techniques from complementary and alternative medicine (CAM)<sup>1</sup> to prevent, manage, and treat stress-related problems. One CAM area being used for stress is that of mind-body interventions—that is, techniques designed to enhance the mind's capacity to affect bodily function and symptoms.

“Our goal at NCCAM is to pursue the best science that we can,” says NCCAM Director Stephen E. Straus, M.D. “We have an opportunity to harness wonderful new tools that are now available—from interventions and imaging, to discoveries in basic neurobiology—to ask and answer questions about mind-body modalities in the CAM domain.”

NCCAM-funded studies include:

- ▶ Placebos and the placebo effect, a broad area of mind-body medicine with many potential health applications.<sup>2</sup> NCCAM co-released three research initiatives on this topic in late 2001. One NCCAM grantee is studying in depth **the brain's system that releases natural painkillers**, including during the placebo response.
- ▶ Mindfulness-Based Stress Reduction and qi gong<sup>3</sup> to help persons with **fibromyalgia**, a complex syndrome involving widespread physical pain or tenderness.
- ▶ A multidimensional study of CAM, including mind-body medicine, in **pediatric health care**.
- ▶ Meditation and its possible benefits for people with **heart disease and high blood pressure**.
- ▶ Self-hypnosis as an aid in **minor surgery**. Relaxation through self-hypnosis, if found effective, might enable the drugs now used (which can have serious complications) in these procedures to be used less often or in smaller amounts.
- ▶ A prayer-based intervention for women with **breast cancer**, to find out its effects on the emotional stresses of diagnosis



## Life Stresses and Mind-Body Therapies, continued from pg. 1

and treatment and upon responses of the neuroendocrine and immune systems.

- Music therapy, to find out whether it lessens side effects and/or speeds the recovery of the immune system in people who have had **bone marrow transplants**.

For other examples of NCCAM research on mind-body interventions, go to [nccam.nih.gov/clinicaltrials/treatmenttherapy](http://nccam.nih.gov/clinicaltrials/treatmenttherapy) or contact the NCCAM Clearinghouse (see below).

Margaret A. Chesney, Ph.D., Deputy Director of NCCAM, has researched stress and illness for the past 25 years. She notes,

### Other NCCAM Activities on Mind-Body Interventions

**Mind-Body Research Initiative:** In January 2003, NCCAM joined 15 other NIH entities in releasing a mind-body research initiative. “Mind-Body Interactions and Health: Research Infrastructure Program” will allow scientists and institutions already conducting high-caliber mind-body research to pursue new opportunities. A companion program, “Mind-Body Interactions and Health: Exploratory/Developmental Research Program,” is targeted to institutions at earlier research stages.

**Intramural Research:** The NCCAM Division of Intramural Research, located on the NIH campus, plans to conduct research on selected CAM modalities that might relieve or ease the life stressors of depression, cognitive decline, chronic pain, frailty, and sleep disorders, particularly as they affect the elderly and the medically underserved. Studies will look particularly at the endocrine, nervous, and immune systems.

#### Complementary and Alternative Medicine at the NIH

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**NCCAM Clearinghouse:** For information about NCCAM or any aspect of complementary and alternative medicine, contact the NCCAM Clearinghouse:

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**Our mission:** NCCAM is dedicated to exploring complementary and alternative healing practices in the context of rigorous science, training complementary and alternative medicine researchers, and disseminating authoritative information to the public and professionals.

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“We know that the mind and body are in active dialogue with one another. Our job is to learn all we can about the language they are speaking, and to identify ways to harness it—through CAM interventions—for better health.” ■

## Notes

1. CAM is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine. While some scientific evidence exists regarding some CAM therapies, for most there are key questions that are yet to be answered through well-designed scientific studies—such as whether they are safe and whether they work for the diseases or medical conditions for which they are used. For more about CAM and conventional medicine, see the NCCAM fact sheet “What Is Complementary and Alternative Medicine?”

2. Placebos and the response they produce can be useful in clinical trials (research studies in people) and health care. In clinical trials, a placebo is designed to resemble the treatment being studied, except that the placebo is inactive (an example is a sugar pill). By giving one group of participants a placebo and the other group the active treatment, researchers can compare how the two groups respond. In recent years, the definition of placebo has been expanded to include other things that can have an impact on the results of health care, such as how a patient and a health care provider interact, how a patient feels about receiving the care, and what he or she expects to happen from the care.

3. In Mindfulness-Based Stress Reduction, participants learn specific skills for paying attention, relaxing deeply, and enhancing awareness; these skills can be applied to reduce stress. Qi gong (“chee-GUNG”) is a component of traditional Chinese medicine. It combines movement, meditation, and regulation of breathing, with the goal of enhancing the flow of qi (an ancient term given to what is believed to be vital energy).

Sources for this article include consumer information from the National Institute for Occupational Safety and Health; the National Ag Safety Database at the Centers for Disease Control and Prevention; and the following journal article: Glaser R, Rabin B, Chesney M, et al. Stress-induced immunomodulation: implications for infectious diseases? *Journal of the American Medical Association*. 1999; 281(24):2268-2270.

## NIH Council Openings

The Director of the National Institutes of Health (NIH) invites applications from interested persons for the NIH Director's Council of Public Representatives (COPR). The Council consists of up to 21 persons who are selected from among the diverse communities that benefit from, and have an interest in, NIH research, programs, and activities. It advises NIH on cross-cutting issues related to medical research and health issues of public interest. For more information or to obtain an application (due September 15, 2003), go to [copr.nih.gov/application\\_process.shtm](http://copr.nih.gov/application_process.shtm) or call 301-650-8660.

## Get NCCAM News by E-mail

NCCAM has launched an electronic news bulletin, the *NCCAM Update*. The *Update*, sent by e-mail approximately once per month, informs readers about NCCAM activities and announcements. There is no charge for the service. To find out more or to subscribe, go to [nccam.nih.gov/news](http://nccam.nih.gov/news).

## Research Funding Opportunities

Visit [nccam.nih.gov/research/announcements](http://nccam.nih.gov/research/announcements) for more information on these and other NCCAM funding opportunities.

- ▶ Request for Application (RFA OB-03-004): Mind-Body Interactions and Health: Research Infrastructure Program. Sponsor: NCCAM and 14 other NIH Institutes, Centers, and Offices (see pg. 2).
- ▶ Request for Application (RFA OB-03-005): Mind-Body Interactions and Health: Exploratory/Developmental Research Program. Sponsor: NCCAM and 15 other NIH Institutes, Centers, and Offices (see pg. 2).
- ▶ Program Announcement (PAR-03-102): Secondary Analysis of Data on CAM Use in Minority Populations. Sponsor: NCCAM.

## Scientific Opportunities at NCCAM

NCCAM is expanding its team of Program Officers to manage research portfolios in pharmacology/pharmacognosy, immunology/allergy, infectious diseases, oncology, musculoskeletal disorders, and psychology. Positions are in Bethesda, Maryland. For more information, go to [nccam.nih.gov/about/jobs/programofficer](http://nccam.nih.gov/about/jobs/programofficer).



David Spiegel, M.D., professor of psychiatry and behavioral sciences at Stanford University School of Medicine, spoke at NIH on May 6, 2003, as part of the NCCAM series "Distinguished Lectures in the Science of Complementary and Alternative Medicine." Dr. Spiegel's lecture, "Hypnosis and Group Support in Medical Care: Altering Perception and Reality," can be viewed on the Web at [videocast.nih.gov/pastevents.asp](http://videocast.nih.gov/pastevents.asp) (select "Special Lectures/Press Conferences" and scroll back to the lecture date).

The next meeting of the **National Advisory Council for Complementary and Alternative Medicine** will be held on September 8, 2003, at the NIH Neuroscience Building, 6001 Executive Boulevard, Rockville, Maryland. For more information, go to [nccam.nih.gov/about](http://nccam.nih.gov/about).

## FDA Warnings: Dietary Supplements for Sexual Enhancement

Since April 2003, the U.S. Food and Drug Administration (FDA) has issued warnings to consumers not to purchase or consume various dietary supplements promoted for increasing desire, confidence, and sexual performance. At press time, these products included Vinarol, Viga, Sigrá, Stamina Rx, Stamina Rx for Women, Y-Y, Spontane ES, and Uroprin. The FDA found that each contained an unlabeled prescription ingredient that could pose serious health risks for users who also take prescription drugs containing nitrates (such as nitroglycerin). The unlabeled ingredients are sildenafil (also found in Viagra) or tadalafil (also found in a drug sold in Europe, Cialis). Consumers of the supplements named above should stop using them immediately and consult their health care provider about any medical concerns. For updated alerts and advisories, go to [nccam.nih.gov/health](http://nccam.nih.gov/health).

## NIH Autoimmune Diseases Research Plan

NCCAM participated in the development of an NIH Autoimmune Diseases Research Plan, announced by U.S. Department of Health and Human Services Secretary Tommy G. Thompson in early 2003. Autoimmune diseases—rheumatoid arthritis, multiple sclerosis, type 1 diabetes, lupus, and others—afflict an estimated 14 to 20 million Americans. Complementary and alternative medicine approaches are among the therapies planned for study. The plan is posted at [www.niaid.nih.gov/dait/pdf/adcc\\_report.pdf](http://www.niaid.nih.gov/dait/pdf/adcc_report.pdf).

## Atkins Diet Study Results Published

A team headed by an NCCAM grantee has published the results of a small pilot study on a low-carbohydrate, high-protein, high-fat diet for weight loss, most popularly known as the Atkins diet. Gary D. Foster, Ph.D., and his colleagues at the University of Pennsylvania randomly assigned 63 people to either the low-carbohydrate diet or a conventional diet. Those in the low-carbohydrate group lost more weight (about 4 percent more) for the first 6 months. However, there was no significant difference between the two groups at 1 year. The low-carbohydrate diet appeared to improve risk factors for heart disease. The authors concluded that more research is needed on the safety and effectiveness of this regimen (Foster GD, Wyatt HR, Hill JO, et al. A multicenter, randomized, controlled trial of a low-carbohydrate diet for obesity. *New England Journal of Medicine*. 2003;348(21):2082-2090).

*continued on pg. 4*

Official Business

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## OTHER INFORMATION (continued)

### Manufacturing and Labeling Standards Proposed for Supplements

The U.S. Food and Drug Administration (FDA) has taken action toward helping Americans who purchase dietary supplements get products that are accurately labeled and free of impurities. Dietary supplements, in brief, are vitamins, herbal products, and certain other substances intended to supplement the diet. In March 2003, the FDA issued a proposed rule that would establish new, industrywide manufacturing and labeling standards for supplements. NCCAM Director Stephen E. Straus, M.D., noted that the rule's "good manufacturing processes" would also improve what is known about supplements' safety and efficacy: "Since many of the current products are highly variable, these practices will enhance research efforts and our ability to provide the public with definitive data about supplements' safety and effectiveness." The public comment period closed in early June, but you can find out more about the proposed rule and watch for further developments at [www.fda.gov](http://www.fda.gov).

### New Fact Sheets

NCCAM is continually developing new fact sheets and posting them on the Web. To obtain copies, go to [nccam.nih.gov/health](http://nccam.nih.gov/health) or contact the NCCAM Clearinghouse (see pg. 2). New titles posted recently or coming soon include:

- ▶ "Questions and Answers About Homeopathy"
- ▶ "What's in the Bottle? An Introduction to Dietary Supplements"
- ▶ "Hepatitis C and Complementary and Alternative Medicine: 2003 Update"
- ▶ "About Chiropractic and Its Use in Treating Back Pain"
- ▶ "Questions and Answers About Using Magnets for Pain"
- ▶ "Complementary and Alternative Medicine in Cancer Treatment: Questions and Answers" (coproduced by NCCAM and the National Cancer Institute)

NCCAM has also posted Spanish-language versions of "Are You Considering Using Complementary and Alternative Medicine?" and "What Is Complementary and Alternative Medicine?"

### NCCAM Exhibits at Upcoming National Meetings

- ▶ National Medical Association Annual Convention and Scientific Assembly, August 2-7, Philadelphia ([www.nmanet.org](http://www.nmanet.org))
- ▶ American Association of Retired Persons National Event, September 5-7, Chicago ([www.aarp.org](http://www.aarp.org))
- ▶ Seventh Annual United States Conference on AIDS, September 18-21, New Orleans ([www.nmac.org](http://www.nmac.org))

### Government Action on SARS Claims

In May 2003, the Federal Trade Commission (FTC) and the FDA announced a crackdown on unproven claims about products that supposedly treat severe acute respiratory syndrome (SARS). Manufacturers, distributors, and Web site operators who make such claims are breaking the law. According to the FTC, "Although health authorities are searching for effective vaccines and treatment drugs, currently no products are known to protect against, treat, or cure the virus thought to cause SARS...and no dietary supplements claiming to prevent, treat, or cure SARS have yet been tested against the virus." Consumers should ask, "If a medical breakthrough for SARS has occurred, would I be hearing about it for the first time through an advertisement or sales pitch?" To find out more, go to [www.fda.gov/bbs/topics/news/2003/new00904.html](http://www.fda.gov/bbs/topics/news/2003/new00904.html). In the interim, NCCAM, in partnership with the National Institute of Allergy and Infectious Diseases, has assembled the resources needed to test natural products in the laboratory for their potential activity to block the growth of the SARS virus ([nccam.nih.gov/research/news/sars](http://nccam.nih.gov/research/news/sars)).