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Health Topics

June 2003

Chronic Fatigue Research: Challenges and Opportunities

Chronic Fatigue vs. Chronic Fatigue Syndrome

Fatigue refers to a sensation of exhaustion during or after usual daily activities, or a lack of energy to begin these activities. Most people have fatigue at one time or another in their lives. Fatigue may result from exertion, lack of sleep, or illnesses such as colds. Fatigue is not extreme or persistent. Instead, it generally goes away after getting more rest or recovering from a cold. Chronic fatigue, however, occurs when symptoms of exhaustion or lack of energy last over 6 months.

Chronic Fatigue Syndrome (CFS) is the medical name for a condition of extreme and persistent fatigue. To have a diagnosis of chronic fatigue syndrome (CFS), a patient must meet the following two criteria: 1) have severe chronic fatigue for 6 months or longer with other known medical conditions excluded by clinical diagnosis, and 2) at the same time, have four or more of the following symptoms: substantial impairment in short-term memory or concentration; sore throat; tender lymph nodes; muscle pain; multijoint pain without swelling or redness; headaches of a new type, pattern, or severity; unrefreshing sleep; and discomfort after physical activity that lasts more than 24 hours. The symptoms must have persisted or recurred during 6 or more consecutive months and must not have predated the fatigue. When there is no apparent explanation or cause of fatigue, such as a disease, a diagnosis of CFS is given. Additional information on chronic fatigue syndrome is available on the Web at www4.od.nih.gov/orwh/CFS-newhome.html and in the resource section at the end of this paper.

The following information covers chronic fatigue-not CFS-as a symptom of many diseases of the skin, muscles, and joints.

Chronic Fatigue: A Symptom of Many Diseases

Chronic fatigue is a symptom of many diseases that fall under the NIAMS mission, such as rheumatoid arthritis, fibromyalgia, and lupus. Although the cause of chronic fatigue is unknown, infection, hormone levels, and stress are believed to play a role in its symptoms. Chronic fatigue often results from sleep disturbance, usually insomnia, in combination with chronic pain and depression. Stress, physical inactivity, poor diet, and medications may also contribute to chronic fatigue. Social and cultural factors are also believed to play a role in chronic fatigue symptoms. People with mobility-limiting disorders often experience chronic fatigue. Regardless of the cause, chronic fatigue has a major impact on day-to-day functioning and quality of life.

Talking to Your Doctor About Chronic Fatigue

If you think you may be struggling with chronic fatigue, it is important to discuss your symptoms with your doctor. Symptoms such as anxiety, depression, insomnia, and pain are particularly important to discuss. It is also important to tell your doctor about any medications you are taking, including dietary supplements and alternative and complementary treatments,

because some medications can exaggerate the symptoms listed above. For example, stimulants (such as caffeine) as well as corticosteroids may cause sleep disturbances. Your doctor can provide guidance on what medications and interventions may restore your sleep, as well as advice on medications to avoid. It is also important to discuss chronic pain symptoms with your doctor because chronic pain often leads to sleep difficulties, which in turn leads to chronic fatigue. Your doctor may order laboratory tests to determine what organ(s) may be involved in causing chronic fatigue.

Your doctor may recommend self-management strategies to handle your fatigue. For example, the Arthritis Self-Help Course (developed by the Arthritis Foundation) is an effective way to reduce many symptoms of arthritis, including fatigue. Maintaining a healthy weight and participating in regular exercise may also help reduce symptoms of fatigue.

Why is Basic Research Important to Understanding Fatigue?

Basic research has improved our understanding of what factors - both within and outside the body - trigger the disease process, and is important to understanding fatigue. It seeks to discover how systems work and to develop a knowledge base that scientists can use to achieve practical goals, such as treatments or cures for diseases. By providing this new knowledge, basic biomedical research, such as that supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), forms the foundation for advances in the diagnosis, treatment, and prevention of diseases.

Why are Clinical and Behavioral Research Important to Understanding Fatigue?

Clinical and behavioral research helps scientists to understand health and disease in humans. Improved understanding of health and disease often allows scientists to translate research findings into improved patient care. Clinical research includes clinical trials, behavioral research, health services research, epidemiology (where and how often a disease appears), translational research (which moves basic advances into the clinic), and community-based research.

Clinical trials allow scientists to test interventions designed to prevent, treat, or cure disease. For example, NIAMS-funded researchers are following a set of lupus patients from three well-defined ethnic groups-Hispanic, African American and Caucasian-as part of the LUpus in MInorities: NAture versus Nurture (LUMINA) study. So far, researchers have found that a variety of factors contribute to increased fatigue in lupus patients. These factors include older age, Caucasian ethnicity, lack of health insurance, inadequate coping strategies, higher degree of disease activity, helplessness, and pain. By understanding these factors, researchers hope to design therapies aimed at overcoming this common and often disabling symptom. Researchers also hope to uncover how and why fatigue occurs in certain individuals. You can learn more about this trial and other clinical trials by going to the Web site www.clinicaltrials.gov.

Behavioral research is designed to further our understanding of behavioral functioning and provide knowledge needed for better prediction, prevention, and control of diseases. The NIAMS currently supports a clinical trial designed to test cognitive-behavioral therapy as a treatment for insomnia in fibromyalgia patients. Researchers hope the trial results will confirm the usefulness of cognitive-behavioral therapy to reduce sleep disturbances, daytime pain, and fatigue. Cognitive-behavioral therapy combines cognitive therapy, which is designed to change or eliminate thought patterns that contribute to the person's symptoms, and behavioral therapy, which aims to help the person change his or her behavior. The NIAMS is also interested in the use of cognitive-behavioral therapy for pain management in other rheumatic diseases, as well as in low back pain.

Clinical and behavioral research, such as the studies described above, have the potential to improve public health and enhance quality of life. Since it is impossible to know with certainty which area of research will produce the next important discovery, the community of science, of which NIAMS is a part, has to be open to all ideas. Discoveries can come from research funded in a variety of areas, across a wide range of scientific disciplines.

Current and Planned Initiatives

Self-Management Strategies Across Chronic Diseases-Program Announcement (June 2000). This multi-institute Program Announcement (PA) recognizes that self-management strategies have the potential to reduce symptoms of fatigue for people with chronic diseases. It extends current research to test the effectiveness of self-management interventions. Developing standard approaches or best practices to self-management is a major goal. Examples of approaches include cognitive strategies, social support, improving self-efficacy, and coping skills.

Physical Activity and Obesity Across Chronic Diseases-Program Announcement (November 2000). NIAMS and six other NIH components issued this PA as part of a trans-NIH Obesity Initiative, which includes approaches to obesity prevention and the neuroendocrinology of obesity. Obesity, physical activity, and energy level are interrelated and are thought to play a role in the development of fatigue. Studies will include examining the quality-of-life benefits of physical activity, which may include reducing fatigue.

Social and Cultural Dimensions of Health-Program Announcement (December 2001). NIAMS joined several other NIH components in issuing this PA to stimulate research in these areas. Some experts believe that fatigue may be influenced by social and cultural factors. By clarifying the relationship between social and cultural factors and health and illness, the role of fatigue may be uncovered. The announcement was based on recommendations submitted to the National Institutes of Health (NIH) in conjunction with the 2000 conference, "Toward Higher Levels of Analysis: Progress and Promise in Research on Social and Cultural Dimensions of Health," held in Bethesda, Maryland.

Increasing Quality of Life in Mobility Disorders-Program Announcement (May 2002). Recognizing that pain, fatigue, and depression are common symptoms for persons with limited mobility, this multi-institute PA seeks to stimulate research that will improve quality of life for people with mobility disorders. It focuses on improvement by managing the physical symptoms. Possible project topics are identifying ways to improve life quality and psychosocial adjustment, and determining factors that contribute to quality of life and positive outcomes for individuals with mobility disorders.

Mind-Body Interactions and Health: Research Infrastructure and Exploratory Development Programs-Requests for Applications (January 2003). The NIAMS and 14 other NIH components issued two requests for applications (RFAs) to support and advance research to improve the understanding of mind-body interactions and health. By promoting collaboration among investigators conducting health-related mind-body research throughout the United States, these RFAs will stimulate innovative coordinated approaches to research questions. The NIAMS is particularly interested in understanding the relationship between stress and health consequences for people with arthritis, musculoskeletal disorders, and skin diseases.

Where to Find Additional Information

There are many organizations that address fatigue, such as those listed below.

National Library of Medicine (NLM)

MEDLINEplus
8600 Rockville Pike
Bethesda, Maryland 20894
(301) 496-6308 or (800) 338-7657
www.nlm.nih.gov/medlineplus/

MEDLINEplus is designed to assist the public in locating authoritative health information on the Internet. This free service provides access to extensive information about specific diseases and conditions and has links to health information from the NIH, dictionaries, lists of hospitals and physicians, health information in Spanish and other languages, and clinical trials. Links to predesigned searches of the MEDLINE® database allow you to find references to the latest health professional articles on each topic. The adam.com medical encyclopedia

included in MEDLINEplus brings health consumers an extensive library of medical images, as well as over 4,000 articles about diseases, tests, symptoms, injuries, and surgeries. Drug information is also available on the site.

ClinicalTrials.gov

ClinicalTrials.gov is an information service of the National Institutes of Health (NIH) developed by the NLM that provides patients, family members, health care professionals, and the public with easy access to information on clinical trials for a wide range of diseases and conditions. This database provides opportunities to participate in the evaluation of new treatments. The NLM maintains the database in collaboration with all NIH institutes and centers, other Federal agencies, the pharmaceutical industry, and academic and other nonprofit organizations. You can access this database on the Web at clinicaltrials.gov.

Office of Research on Women's Health

National Institutes of Health
9000 Rockville Pike, MSC 0161
Bethesda, Maryland 20892
(301) 402-1770
www4.od.nih.gov/orwh/CFS-newhome.html

Centers for Disease Control and Prevention

National Center for Infectious Diseases
Division of Viral and Rickettsial Diseases
Atlanta, Georgia 30333
(404) 639-1388 or 1-888-232-3228
www.cdc.gov/ncidod/diseases/cfs

If you are interested in medical, professional, and patient groups, many of which have information on fatigue, visit the NIAMS coalition listing on our Web site at www.niams.nih.gov/hi/coalition/resources.htm.

