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Comprehensive Cancer Information for Patients, Families and Medical Professionals Printed from CancerHelp®

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Fatigue 02/03

-- Introduction --

This patient summary on fatigue is adapted from a summary written for health professionals by cancer experts. This and other credible information about cancer treatment, screening, prevention, supportive care, and ongoing clinical trials is available from the National Cancer Institute. Fatigue is one of the most common complaints of people diagnosed with cancer. This brief summary describes fatigue, its causes and treatment.

-- Overview --

Fatigue occurs in 14% to 96% of people with cancer, especially those receiving treatment for their cancer. Fatigue is complex, and has biological, psychological, and behavioral causes. Fatigue is difficult to describe and

people with cancer may express it in different ways, such as saying they feel tired, weak, exhausted, weary, worn-out, fatigued, heavy, or slow. Health professionals may use terms such as asthenia, fatigue, lassitude, prostration, exercise intolerance, lack of energy, and weakness to describe fatigue.

Fatigue can be described as a condition that causes distress and decreased ability to function due to a lack of energy. Specific symptoms may be physical, psychological, or emotional. To be treated effectively, fatigue related to cancer and cancer treatment needs to be distinguished from other kinds of fatigue.

Fatigue may be acute or chronic. Acute fatigue is normal tiredness with occasional symptoms that begin quickly and last for a short time. Rest may alleviate fatigue and allow a return to a normal level of functioning in a healthy individual, but this ability is diminished in people who have cancer. Chronic fatigue is long lasting. Chronic fatigue syndrome describes prolonged debilitating fatigue that may persist or relapse. This illness is sometimes diagnosed in people who do not have cancer. Although many treatment- and disease-related factors may cause fatigue, the exact process of fatigue in people with cancer is not known.

Fatigue can become a very important issue in the life of a person with cancer. It may affect how the person feels about him- or herself, his or her daily activities and relationships with others, and whether he or she continues with cancer treatment. Patients receiving some cancer treatments may miss work, withdraw from friends, need more sleep, and, in some cases, may not be able to perform any physical activities because of fatigue. Finances can become difficult if people with fatigue need to take disability leave or stop working completely. Job loss may result in the loss of health insurance or the inability to get medical care. Understanding fatigue and its causes is important in determining effective treatment and in helping people with cancer cope with fatigue. Tests that measure the level of fatigue have been developed.

-- Causes --

The causes of fatigue in people with cancer are not known. Fatigue commonly is an indicator of disease progression and is frequently one of the first symptoms of cancer in both children and adults. For example, parents of a child diagnosed with acute lymphocytic leukemia or non-Hodgkin's lymphoma frequently seek medical care because of the child's extreme fatigue. Tumors can cause fatigue directly or indirectly by spreading to the bone marrow, causing anemia, and by forming toxic substances in the body that interfere with normal cell functions. People who are having problems breathing, another symptom of some cancers, may also experience fatigue.

Fatigue can occur for many reasons. The extreme stress that people with cancer experience over a long period of time can cause them to use more energy, leading to fatigue. However, there may be other reasons that cancer patients suffer from fatigue. The central nervous system (the brain and spinal cord) may be affected by the cancer or the cancer therapy (especially biological therapy) and cause fatigue. Medication to treat pain, depression, vomiting, seizures, and other problems related to cancer may also cause fatigue. Tumor necrosis factor (TNF) is a substance that can be produced by a tumor, or may be given to a patient as a treatment for some types of cancer. TNF may cause a decrease in protein stores in muscles causing the body to work harder to perform normal functions, and therefore causing fatigue.

-- Factors Related to Fatigue --

It is not always possible to determine the factors that cause fatigue in patients with cancer. Possible factors include cancer treatment, anemia, medications, weight loss and loss of appetite, changes in metabolism, decreased levels of hormones, emotional distress, difficulty sleeping, inactivity, difficulty breathing, loss of strength and muscle coordination, pain, infection, and having other medical conditions in addition to cancer.

-- Cancer treatment --

Fatigue is a common symptom following radiation therapy or chemotherapy. It may be caused by anemia, or the collection of toxic

substances produced by cells. In the case of radiation, it may be caused by the increased energy needed to repair damaged skin tissue.

Several factors have been linked with fatigue caused by chemotherapy. Some people may respond to the diagnosis and treatment of cancer with mood changes and disrupted sleep patterns. Nausea, vomiting, chronic pain, and weight loss can also cause fatigue.

Fatigue has long been associated with radiation therapy although the connection between them is not well understood. Fatigue usually lessens after the therapy is completed, although not all patients return to their normal level of energy. Patients who are older, have advanced disease, or receive combination therapy (for example, chemotherapy plus radiation therapy) are at a higher risk for developing long-term fatigue.

Biological therapy frequently causes fatigue. In this setting, fatigue is one of a group of side effects known as "flu-like" syndrome. This syndrome also includes fever, chills, muscle pain, headache, and a sense of generally not feeling well. Some patients may also experience problems with their ability to think clearly. The type of biological therapy used may determine the type and pattern of fatigue experienced.

Many people with cancer undergo surgery for diagnosis or treatment. Fatigue is a problem following surgery, but fatigue from surgery improves with time. It can be made worse, however, when combined with the fatigue caused by other cancer treatments.

-- Anemia --

Anemia may be a major factor in cancer-related fatigue and quality of life in people with cancer. Anemia may be caused by the cancer, cancer treatment, or may be related to other medical causes.

-- Nutrition factors --

Fatigue often occurs when the body needs more energy than the amount being supplied from the patient's diet. In people with cancer, 3 major

factors may be involved: a change in the body's ability to process food normally, an increased need by the body for energy (due to tumor growth, infection, fever, or problems with breathing), and a decrease in the amount of food eaten (due to lack of appetite, nausea, vomiting, diarrhea, or bowel obstruction).

-- Psychological factors --

The moods, beliefs, attitudes, and reactions to stress of people with cancer can contribute to the development of fatigue. Approximately 40% to 60% of the cases of fatigue among all patients (cancer patients as well as other patients) are not caused by disease or other physical reasons. Anxiety and depression are the most common psychological disorders that cause fatigue.

Depression may be a disabling illness that affects approximately 15% to 25% of people who have cancer. When patients experience depression (loss of interest, difficulty concentrating, mental and physical tiredness, and feelings of hopelessness), the fatigue from physical causes can become worse and last longer than usual, even after the physical causes are gone. Anxiety and fear associated with a cancer diagnosis, as well as its impact on a person's physical, mental, social, and financial well-being are sources of emotional stress. Distress from being diagnosed with cancer may be all that is needed to trigger fatigue. (Refer to the PDQ summaries on Depression and on Anxiety for more information.)

-- Mental ability factors --

Decreased attention span and difficulty understanding and thinking are often associated with fatigue. Attention problems are common during and after cancer treatment. Attention may be restored by activities that encourage rest. Sleep is also necessary for relieving attention problems but it is not always enough.

-- Sleep disorders and inactivity --

Disrupted sleep, poor sleep habits, less sleep at night, sleeping a lot during the day, or no activity during the day may contribute to cancer-related fatigue. Patients who are less active during the daytime and awaken frequently during the night report higher levels of cancer-related fatigue.

-- Medications --

Medications other than those used in chemotherapy may also contribute to fatigue. Opioids used in treating cancer-related pain often cause drowsiness, the extent of which may vary depending on the individual. Other types of medications such as tricyclic antidepressants and antihistamines may also produce the side effect of drowsiness. Taking several medications may compound fatigue symptoms.

-- Assessment --

To determine the cause and best treatment for fatigue, the person's fatigue pattern must be determined, and all of the factors causing the fatigue must be identified. The following factors must be included:

1. Fatigue pattern, including how and when it started, how long it has lasted, and its severity, plus any factors that make fatigue worse or better.
2. Type and degree of disease and of treatment-related symptoms and/or side effects.
3. Treatment history.
4. Current medications.
5. Sleep and/or rest patterns and relaxation habits.
6. Eating habits and appetite or weight changes.
7. Effects of fatigue on activities of daily living and lifestyle.
8. Psychological profile, including an evaluation for depression.
9. Complete physical examination that includes evaluation of walking patterns, posture, and joint movements.
10. How well the patient is able to follow the recommended treatment.
11. Job performance.
12. Financial resources.
13. Other factors (for example, anemia, breathing problems, decreased muscle strength).

Underlying factors that contribute to fatigue should be evaluated and treated when possible. Contributing factors include anemia, depression, anxiety, pain, dehydration, nutritional deficiencies, sedating medications, and therapies that may have poorly tolerated side effects. Patients should tell their doctors when they are experiencing fatigue and ask for information about fatigue related to underlying causes and treatment side effects.

-- Anemia evaluation --

There are different kinds of anemia. A medical history, a physical examination, and blood tests may be used to determine the kind and extent of anemia that a person may have. In people with cancer there may be several causes.

-- Treatment --

Most of the treatments for fatigue in cancer patients are for treating symptoms and providing emotional support because the causes of fatigue that are specifically related to cancer have not been determined. Some of these symptom-related treatments may include adjusting the dosages of pain medications, administering red blood cell transfusions or blood cell growth factors, diet supplementation with iron and vitamins, and antidepressants or psychostimulants.

-- Psychostimulant drugs --

Although fatigue is one of the most common symptoms in cancer, few medications are effective in treating it. A health care provider may prescribe medication in low doses that may help patients who are depressed, unresponsive, tired, distracted, or weak. These drugs (psychostimulants) can give a sense of well-being, decrease fatigue, and increase appetite. They are also helpful in reversing the sedating effects of morphine, and they work quickly. However, these drugs can also cause sleeplessness, euphoria, and mood changes. High doses and long-term

use may cause loss of appetite, nightmares, sleeplessness, euphoria, paranoid behavior, and possible heart problems.

-- Treatment for anemia --

Treatment for fatigue that is related to anemia may include red blood cell transfusions. Transfusions are an effective treatment for anemia, however possible side effects include infection, immediate transfusion reaction, graft-versus-host disease, and changes in immunity. Treatment for anemia related fatigue, in patients undergoing chemotherapy, may also include drugs that stimulate the production of blood cells such as epoetin alfa.

-- Exercise --

Exercise (including light- to moderate-intensity walking programs) helps many people with cancer. People with cancer who exercise may have more physical energy, improved appetite, improved ability to function, improved quality of life, improved outlook, improved sense of well being, enhanced sense of commitment, and improved ability to meet the challenges of cancer and cancer treatment.

Exercise may also help patients with advanced cancer, even those in hospice care. More benefit may result when family members are involved with the patient in the physical therapy program.

-- Activity and rest --

Any changes in daily routine require the body to use more energy. People with cancer should set priorities and keep a reasonable schedule. Health professionals can help patients by providing information about support services to help with daily activities and responsibilities. An activity and rest program can be developed with a health care professional to make the most of a patient's energy. Practicing sleep habits such as not lying down at times other than for sleep, taking short naps no longer than one hour, and limiting distracting noise (tv, radio) during sleep may improve sleep and allow more activity during the day.

-- Patient education --

Treating chronic fatigue in cancer patients means accepting the condition and learning how to cope with it. People with cancer may find that fatigue becomes a chronic disability. Although fatigue is frequently an expected, temporary side effect of treatment, other factors may cause it to continue.

Since fatigue is the most common symptom in people receiving outpatient chemotherapy, patients should learn ways to manage the fatigue. Patients should be taught the following:

- * The difference between fatigue and depression
- * Possible medical causes of fatigue (not enough fluids, electrolyte imbalance, breathing problems, anemia)
- * To observe their rest and activity patterns during the day and over time
- * To engage in attention-restoring activities (walking, gardening, bird-watching)
- * To recognize fatigue that is a side effect of certain therapies
- * To participate in exercise programs that are realistic
- * To identify activities which cause fatigue and develop ways to avoid or modify those activities
- * To identify environmental or activity changes that may help decrease fatigue
- * The importance of eating enough food and drinking enough fluids
- * Physical therapy may help with nerve or muscle weakness
- * Respiratory therapy may help with breathing problems

- * To schedule important daily activities during times of less fatigue, and cancel unimportant activities that cause stress
- * To avoid or change a situation that causes stress
- * To observe whether treatments being used to help fatigue are working

-- Post-treatment Considerations --

This section is for patients who have had no cancer treatment for at least 6 months. The causes of fatigue are different for patients who are receiving therapy compared to those who have completed therapy. Also, the treatment for fatigue may be different for patients who are no longer receiving treatment for cancer.

Fatigue in people who have completed treatment for cancer and who are considered to be disease-free is a different condition than the fatigue experienced by patients receiving therapy. Fatigue may significantly affect the quality of life of cancer survivors. Studies show that some patients continue to have moderate to severe fatigue for up to 18 years after bone marrow transplantation. Long-term therapies such as tamoxifen can also cause fatigue. Fatigue can cause poor school performance years later in children who were treated for brain tumors and cured. Long-term follow-up care is important for patients after cancer therapy. Physical causes should be ruled out when trying to determine the cause of fatigue in cancer survivors.

-- To Learn More --

Call

For more information, U.S. residents may call the National Cancer Institute's (NCI's) Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237) Monday through Friday from 9:00 a.m. to 4:30 p.m. Deaf and hard-of-hearing callers with TTY equipment may call 1-800-

332-8615. The call is free and a trained Cancer Information Specialist is available to answer your questions.

Web sites and Organizations

The NCI's Cancer.gov Web site provides online access to information on cancer, clinical trials, and other Web sites and organizations that offer support and resources for cancer patients and their families. There are also many other places where people can get materials and information about cancer treatment and services. Local hospitals may have information on local and regional agencies that offer information about finances, getting to and from treatment, receiving care at home, and dealing with problems associated with cancer treatment.

Publications

The NCI has booklets and other materials for patients, health professionals, and the public. These publications discuss types of cancer, methods of cancer treatment, coping with cancer, and clinical trials. Some publications provide information on tests for cancer, cancer causes and prevention, cancer statistics, and NCI research activities. NCI materials on these and other topics may be ordered online or printed directly from the NCI Publications Locator. These materials can also be ordered by telephone from the Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237), TTY at 1-800-332-8615.

LiveHelp

The NCI's LiveHelp service, a program available on several of the Institute's Web sites, provides Internet users with the ability to chat online with an Information Specialist. The service is available from 9:00 a.m. to 10:00 p.m. Eastern time, Monday through Friday. Information Specialists can help Internet users find information on NCI Web sites and answer questions about cancer.

Write

For more information from the NCI, please write to this address:

- * NCI Public Inquiries Office
- * Suite 3036A
- * 6116 Executive Boulevard, MSC8322
- * Bethesda, MD 20892-8322

-- About PDQ --

PDQ is a comprehensive cancer database available on Cancer.gov.

PDQ is the National Cancer Institute's (NCI's) comprehensive cancer information database. Most of the information contained in PDQ is available online at Cancer.gov, the NCI's Web site. PDQ is provided as a service of the NCI. The NCI is part of the National Institutes of Health, the federal government's focal point for biomedical research.

PDQ contains cancer information summaries.

The PDQ database contains summaries of the latest published information on cancer prevention, detection, genetics, treatment, supportive care, and complementary and alternative medicine. Most summaries are available in two versions. The health professional versions provide detailed information written in technical language. The patient versions are written in easy-to-understand, nontechnical language. Both versions provide current and accurate cancer information.

The PDQ cancer information summaries are developed by cancer experts and reviewed regularly.

Editorial Boards made up of experts in oncology and related specialties are responsible for writing and maintaining the cancer information summaries. The summaries are reviewed regularly and changes are made as new information becomes available. The date on each summary ("Date Last Modified") indicates the time of the most recent change.

PDQ also contains information on clinical trials.

Some patients have symptoms caused by cancer treatment or by the cancer itself. Patients who have symptoms related to cancer treatment may want to take part in a clinical trial. A clinical trial is a study to answer a scientific question, such as whether one method of treating symptoms is better than another. Trials are based on past studies and what has been learned in the laboratory. Each trial answers certain scientific questions in order to find new and better ways to help cancer patients. During supportive care clinical trials, information is collected about new treatment methods, the risks involved, and how well they do or do not work. If a clinical trial shows that a new treatment is better than one currently being used, the new treatment may become "standard."

Listings of clinical trials are included in PDQ and are available online at Cancer.gov. Descriptions of the trials are available in health professional and patient versions. Many cancer doctors who take part in clinical trials are also listed in PDQ. For more information, call the Cancer Information Service 1-800-4-CANCER (1-800-422-6237); TTY at 1-800-332-8615.

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