Cancer-Related Fatigue

What is cancer-related fatigue?

Patients know fatigue as the feeling of exhaustion, being completely worn out, unable to concentrate, feeling "heavy", and most of all, feeling more tired than they have ever felt. Cancer-related fatigue is caused by cancer and its treatments.

Fatigue is one of the most common symptoms of cancer patients. Studies report that 26-90% of patients have fatigue during their treatment. The reason for this large range is that the definition of fatigue varies in these studies, as has the extent and type of tumor, and the type of treatment. Fatigue is a personal experience and is different for each person. The National Comprehensive Cancer Network defines cancer-related fatigue (CRF) as "a persistent, subjective sense of tiredness related to cancer or cancer treatment that interferes with usual functioning." This sense of tiredness does not go away if you rest. This fatigue is not caused by too much activity. Many patients describe it as feeling “bone-tired.” They feel physically, mentally, and emotionally drained.

This fatigue impacts a person's quality of life. Many patients see this as part of their treatment and don't seek help from their healthcare providers. Many healthcare providers suggest rest, which research has found is not very helpful.

Fatigue can get better and sometimes worse during the cancer diagnosis. Patients getting chemotherapy often have a peak in fatigue 4-5 days after treatment, or at the time when blood counts are low (nadir). For patients receiving radiation, fatigue tends to reach a peak at the end of treatment and it gets better 1-3 months after therapy. Many patients report fatigue for months or years after therapy, even if their cancer is in remission.

What causes CRF?

There are medical and psychosocial conditions that can cause or increase fatigue. If you have one of these conditions, it should be treated. Some medical conditions that cause fatigue are:

- Anemia. Anemia is a low red blood cell count.
- Pain.
- Infection.
- Cardiac (heart) or pulmonary (lung) disease.
- Medication side effect.
- Thyroid disorders.
- Nutritional deficiency.
- Renal (kidney) failure.

Psychosocial conditions that can cause fatigue are:

- Lack of family, friends, and community social support.
- Poor coping skills.
- Anxiety.
- Depression.
- Sleep problems like a lack of sleep or disrupted sleep patterns.

There are many ideas as to why cancer patients have fatigue. The first involves cytokines, which are proteins released by cells that act as a messenger for the immune system. These proteins regulate how our immune system works, including inflammation, immune function, and making blood cells. Researchers have found that cancer causes an increase in the release
of certain cytokines. The levels of these cytokines are higher in people with CRF, suggesting they could be a cause. It is also known that some cancers cause people to have higher "resting energy consumption." This means they burn more calories at rest than someone without the disease, and need more energy to do daily activities. A decrease in the production of certain hormones has also been found in patients with CRF. It is likely there is not one single cause, but rather many factors.

We also know that a lack of physical activity can cause or make fatigue worse. This may be because weakened muscles require a person to use more energy and effort to do a task. Exercise has been studied as a preventive measure and has been shown to work best when started before fatigue sets in. Exercise can also help reduce fatigue from cancer and treatment.

**How can you reduce or prevent fatigue?**

There are only two ways to reduce or prevent fatigue: treatment of anemia and exercise. It is hard to know how to reduce or prevent CRF since it is not well understood. We will discuss some other ways to manage fatigue that have been shown to be helpful.

**Anemia**

Anemia is a hemoglobin (red blood cell) level below 12 g/dl and symptoms are shortness of breath or trouble breathing with exertion and fatigue. Anemia in a cancer patient is caused by bleeding, bone marrow involvement of disease, chemotherapy, radiation therapy, organ dysfunction (heart, lung, liver, or kidney disease), or poor nutrition. Anemia can cause fatigue. Treating anemia can lessen fatigue. One way to treat anemia is through blood transfusions. Blood transfusions are not without risk and can lead to the transmission of viruses, allergic reactions, and lung injury.

Anemia can also be treated by stimulating the bone marrow to make more red blood cells. A decrease in the red blood cell count or hemoglobin causes the kidneys to release a protein called erythropoietin. This stimulates the bone marrow to make more red blood cells. Synthetic or man-made versions of erythropoietin can also stimulate the same response. These are called growth factors and include *darbepoetin alpha* (Aranesp®) and *epoetin alpha* (Procrit®). Studies have shown that these growth factors are not helpful to all cancer patients. They may increase the risk of blood clots, hypertension (high blood pressure), tumor growth, and even cause death. Your provider will decide if growth factors are a treatment for your anemia.

In most studies, treating anemia led to decreased fatigue and an increase in quality of life. These positive changes were greatest in patients whose tumors also responded to therapy. Studies also found that an increase in hemoglobin in those with progressive disease also had improved quality of life, compared to patients with lower hemoglobin.

**Exercise**

Many studies have proven that exercise improves fatigue ratings and overall quality of life. Exercise leads to a better mood, more energy, feeling more rested, and better ability to concentrate. Light exercises, such as taking a walk, doing simple arm exercises, marching in place, non-strenuous swimming, or pedaling on a stationary bike are all forms of exercise that help. It may be helpful to ask someone to walk with you as encouragement. A walk to a nice park or garden may help you relax and take your mind off your worries.

Most exercise study participants started before or during cancer therapy in an effort to prevent fatigue. It can be much harder to start a program once fatigue has set in, but it is not impossible. Start off slow and progress if you are able.

Make your healthcare team aware of your exercise plan before starting. Certain exercises may not be recommended, especially for those with bone metastases, low blood counts, or other health conditions. Do whatever form of exercise you enjoy. The important thing is that you do some activity. You will feel much better once you get started.

**Energy Conservation**

Rest is often suggested to treat CRF but it often does not help. One way rest can help is through energy conservation and activity planning. This is planning and saving your energy for when you want or need it most. For instance, if your son is playing in a soccer game this afternoon that you really want to go to, take it easy in the morning and conserve energy for the afternoon event. Remember that you may not have the energy to stay for an entire game, so if you want to be there until the end, go a little late.

Another way to conserve energy is to ask for help. Don't be afraid to do so. Ask a friend to clean the house for you, prepare a
meal for your family, drive the school carpool, or just sit and talk. These may seem like simple tasks, but they can be very helpful if you have CRF.

Sleep problems and deprivation can add to or cause fatigue. Keep a normal sleep schedule and talk to your provider about options if you are having trouble sleeping at night. Avoid caffeine later in the day so you will be more likely to sleep at night. Avoid naps or limit them to 20-30 minutes and not too late in the day. See our article on insomnia for more tips.

**Integrative Therapies**

Mind-body interventions have been studied in the treatment of fatigue. Acupuncture, healing touch, hypnosis, massage, yoga, guided imagery, and relaxation have been found to be helpful. There may be an out-of-pocket expense without a guarantee of it working but many find them helpful.

Managing stress can also be helpful in managing fatigue. You may join a support group with other patients or connect with a peer through peer mentoring programs. Start by asking yourself, "what has helped me manage stressful situations in the past?" Then, think about if those methods would be helpful in managing your cancer-related stress and fatigue.

**Medications**

There have been studies of medications called psychostimulants to treat fatigue. These medications "stimulate" the mind and body of the patient, giving them more energy. Several small trials have found an increase in energy with the use of these medications, but they were not all tested in cancer patients. These medications include methylphenidate (Ritalin), dexamphetamine (Focalin), and modafinil (Provigil). Modafinil is a medication used to treat narcolepsy. In cancer patients, it was found to help those with severe fatigue, but not mild or moderate levels of fatigue. There are side effects to these medications such as loss of appetite, sleep problems, dizziness, headache, and nausea. Studies continue looking at these medications. Overall, studies have shown that it is best to treat CRF with non-pharmacological treatments. If they are not helping, your healthcare team may suggest medications.

Depression and anxiety can cause or worsen fatigue. Treatment with anti-depressants has been studied. This therapy was found to be helpful in those patients suffering from true depression and not beneficial for treating fatigue in those without depression. It is normal to have a reaction of sadness to a diagnosis of cancer, but this does not always lead to depression. In fact, studies have found that only 25-30% of cancer patients meet the criteria for a diagnosis of depression.

Corticosteroids, such as dexamethasone and prednisone, have been studied and may help in the short-term for some patients. There are side effects of long-term steroid use so they should only be used for a short period of time.

**Clinical Trials and Specialists**

You should talk to your healthcare team if you are having fatigue and explain how it is affecting your quality of life. Your provider can suggest treatments and interventions to help with fatigue. Ask about clinical trials studying fatigue. Some centers have fatigue clinics that deal with this symptom. Find available trials using the OncoLink Clinical Trials Matching System.

**Resources for More Information**

**Managing Fatigue:** Here you will find a list of helpful tips about fatigue and cancer-related anemia. You will find information that explains what fatigue is, why it happens, how it is treated, and what you can do to prevent yourself from developing it.