

## Integrative Oncology

Integrative medicine in cancer care, called integrative oncology, combines traditional or conventional cancer care with complementary therapies. The goal of complementary therapies is to lessen the side effects of the disease and its treatment and to improve the patient's quality of life. Complementary therapies include natural products, mind/body relaxation techniques, *acupuncture* (an ancient Chinese practice of inserting ultra-thin needles into specific parts of the body), and massage therapies. Natural products include herbs, botanicals, vitamins, minerals, and probiotics. Mind/body techniques include Tai Chi, yoga, *meditation* (a relaxation technique that helps patients achieve a resting state, inner harmony, and increased mental awareness through focusing on their breathing, a word, an object, or a silent prayer), *guided imagery* (the use of mental visualization to reduce anxiety and pain and boost the immune system), music therapy, health-related prayer, etc.

The use of complementary remedies to treat illness has a long history in the United States. However, it was not until 1992 when the National Institutes of Health launched the Office of Alternative Medicine—now known as the National Center for Complementary and Integrative Health—that the study of complementary therapies gained real legitimacy in the medical field and many interventions are now evidence-based. Complementary therapies differ from alternative therapies, which are remedies used instead of standard or proven therapy. Because many lymphomas are treatable and some are curable with conventional medical care, patients diagnosed with lymphoma should never consider using only alternative treatment for cancer, regardless of unproven claims on the internet and elsewhere.

Today, many major academic cancer centers have integrative medicine departments that conduct clinical studies in complementary/integrative therapies for cancer. More and more oncologists incorporate integrative oncology into the standard care regimens they prescribe for their patients with lymphoma.

### How Integrative Oncology Helps

Integrative therapies are currently used to reduce lymphoma symptoms and relieve treatment side effects. For example, acupuncture can alleviate chemotherapy-induced nausea and vomiting, and it may improve sleep and increase energy levels in some patients. There is evidence that massage therapy can be instrumental in reducing pain and producing a sense of well-being in patients with lymphoma. Mind/body practices can reduce anxiety and stress.

More information about these therapies is provided below and in the next column:

- Acupuncture — Ultra-thin needles are applied to specific points on the body. Acupuncture is safe and generally painless. Studies have shown that acupuncture can relieve pain, nausea, *fatigue* (feeling tired), *hot flashes* (a sudden feeling of intense

body heat), and *peripheral neuropathy* (numbness and tingling in the hands and feet) associated with chemotherapy. It can also help decrease mild depression.

- Mind/body techniques — The connection between the mind and physical health is well documented. Meditation, guided imagery, and self-hypnosis are methods used to manage stress and relieve pain. Yoga, Qi Gong, and Tai Chi can also minimize stress and improve balance and flexibility.
- Touch therapies — Massage and *reflexology* (specialized foot massage) involve applying therapeutic pressure to the body, while *Reiki* (a Japanese touch therapy technique for stress reduction and relaxation) uses hands placed on or near the body to improve the flow of energy. Touch therapies can help alleviate pain and restore a sense of harmony, relaxation, and well-being. An *oncology massage* (a special type of massage using modified massage techniques designed to be safe for patients at any stage of cancer treatment) can sometimes help patients relax and manage pain.

Before undergoing any type of massage therapy, patients should check with their oncologist to make sure their blood counts are normal and that they do not have *lymphedema* (localized fluid retention caused by a weakened lymphatic system) or any other medical problem that would make getting a massage inadvisable. Massage therapists may need to touch lighter and ensure the environment is clean to help patients avoid bleeding, bruising, or obtaining infections which are common events when platelets and neutrophil counts are low. Once you are cleared by your healthcare team to receive an oncology massage, be sure the massage therapist you choose is well trained in oncology massage and designated as a preferred practitioner by the Society for Oncology Massage ([www.s4om.org/](http://www.s4om.org/)).

### What to Avoid

While some complementary/integrative therapies, including meditation, acupuncture, and therapeutic massage, have been found to be safe and effective for providing symptom relief from cancer treatment, other complementary therapies (such as herbs, vitamins, and antioxidants) may actually be harmful. These supplements can reduce the effectiveness and increase the toxicity of chemotherapy agents and radiation therapy. Radiation and many chemotherapy drugs, including the alkylating agents cyclophosphamide (Cytoxan) and nitrogen mustard, act by interfering with a process in cells called oxidation, and some laboratory research suggests that high levels of antioxidants such as vitamins A, C, and E block that oxidative process. For that reason, antioxidant vitamin supplements—and even antioxidant-rich drinks like green tea and pomegranate juice—could potentially reduce the effectiveness of chemotherapy and radiation therapy by protecting the tumor cells from oxidative damage caused by the treatments.<sup>1-4</sup>

Until more research is done, patients with lymphoma who are undergoing treatment with radiation or chemotherapy should avoid the use of antioxidants and dietary supplements, even in low doses, and they should refrain from drinking juices high in antioxidants such as cranberry, pomegranate, acai, goji, and mangosteen.

Combining herbal remedies with conventional chemotherapy is also not recommended. For example, the botanical St. John's wort interferes with some common chemotherapy agents, reducing their effectiveness. The reason may be that St. John's wort and chemotherapy drugs compete for the same metabolic pathway in the liver. Before starting any complementary treatment, patients should speak to their physician.

## The Importance of a Healthy Diet and Exercise

Although taking over-the-counter dietary supplements should be avoided during lymphoma treatment, eating a nutrient-rich diet is essential for maintaining energy, supporting the immune system, and reducing the side effects of lymphoma treatment. A diet high in nutrients, especially one that contains plenty of omega-3 fatty acids, can also reduce inflammation in the body. Omega-3s can reduce chronic inflammation which has been associated with promoting cancers as well as heart disease and other chronic illnesses. Omega-3 fatty acids can be found in the following foods:

- Deep cold-water fish such as salmon, albacore tuna, mackerel, and sardines
- Organic eggs
- Walnuts

It is important to maintain a healthy diet while undergoing cancer treatment, including eating plenty of fruits and vegetables, whole grains, meats, and dairy products. Since patients with cancer need to eat food to keep up their strength, they should include extra protein and calories in their diet. Maintaining a regular exercise program most days of the week is also recommended to help reduce fatigue and stress and to build muscle strength. However, before starting or resuming any exercise program, patients should talk with their physician to see how much and what types of activity are most appropriate for them. For more information, please view the *Nutrition* fact sheet on the Lymphoma Research Foundation's (LRF's) website at [www.lymphoma.org/publications](http://www.lymphoma.org/publications).

## Vitamin C and Its Potential Effect on Non-Hodgkin Lymphoma

Vitamin C is an antioxidant abundant in citrus fruits like oranges and grapefruit, as well as in certain vegetables and other fruits. Studies have shown a link between eating foods rich in vitamin C and a reduced risk of cancer. However, studies of vitamin C supplements have not shown a similar risk reduction.

A Phase I study of intravenous high-dose vitamin C in patients with various types of advanced cancer showed the treatment to be safe, yet none of the patients had an antitumor response.<sup>5</sup> Additionally, a laboratory study by researchers at Memorial Sloan Kettering Cancer Center on the effects of vitamin C on cancer cells found that the supplement reduced the effectiveness of chemotherapy drugs.

Until more is known about the effect of vitamin C and other antioxidants on cancer and its treatment, a healthy diet is recommended as the most appropriate source of the nutrients needed to stay healthy. Patients should tell their medical team about any dietary supplements or vitamins they are taking and ask about potential conflicts or interference with their treatment.

## Questions to Ask Your Physician

- Am I a candidate for integrative oncology?
- What types of integrative oncology would be most beneficial for me?
- How much physical activity do I need each day?
- Which food and drinks should I consume, and which ones should I avoid?

## Resources

LRF offers a wide range of resources that address treatment options, the latest research advances, and ways to cope with all aspects of lymphoma and chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) including our award-winning mobile app. LRF also provides many educational activities, from in-person meetings to teleconferences and webcasts for people with lymphoma, as well as patient guides and e-Updates that provide the latest disease-specific news and treatment options. To learn more about any of these resources, visit LRF's website at [www.lymphoma.org](http://www.lymphoma.org), or contact the LRF Helpline at (800) 500-9976 or [helpline@lymphoma.org](mailto:helpline@lymphoma.org).

<sup>1</sup>Lawenda BD et al. *J Natl Cancer Inst.* 2008;100:773-783; <sup>2</sup>Ladas E et al. *Explore (NY)*. 2010;6:75-85; <sup>3</sup>Norman HA et al. *J Nutr.* 2003;133:3794S-3799S; <sup>4</sup>Bairati I et al. *Int J Cancer.* 2006;119:2221-2224; <sup>5</sup>Stephenson CM et al. *Cancer Chemother Pharmacol.* 2013;72:139-146.

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