

Lung cancer

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Lung cancer is the most common cause of cancer death, responsible for an estimated 160,000 deaths in the United States annually. There are two major types: non-small cell lung cancer and small cell lung cancer, so-named because of how the cells look under a microscope. Non-small cell lung cancer is more common, and it generally grows and spreads more slowly. There are three main types of non-small cell lung cancer, named for the type of cells in which the cancer develops: squamous cell carcinoma, adenocarcinoma, and large cell lung cancer. Small cell lung cancer grows more quickly and is more likely to spread to other organs in the body.



Signs and Symptoms

Lung cancer is accompanied by the following signs and symptoms:

- A persistent cough that gets worse over time
- Constant chest pain
- Coughing up blood
- Shortness of breath, wheezing, or hoarseness
- Repeated pneumonia or bronchitis
- Swelling of the neck and face
- Loss of appetite or weight loss
- Fatigue



What Causes It?

Multiple exposure to carcinogens (cancer-causing agents) results in damage to DNA in the cells of the body.



Who's Most At Risk?

Tobacco smoke is the biggest carcinogen, responsible for 85% of all lung cancers in the United States. Risk increases with the amount of tobacco used, and the amount of time it has been used. Non-smokers

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exposed to tobacco smoke are also at risk for developing lung cancer. Other risk factors include the following:

- Family history
- Environmental and occupational exposure to certain substances, including arsenic, asbestos, ether, chromium, nickel, and radon
- Exposure to excessive radiation (wartime or industrial exposure, or radiotherapy to the chest)
- Lung diseases
- Poor diet (however, diets high in fruits and vegetables can decrease your risk)



What to Expect at Your Provider's Office

If you are experiencing symptoms associated with lung cancer, you should see your health care provider. Your health care provider will evaluate your medical history, smoking history, exposure to environmental and occupational substances, and family history of cancer, and will perform a physical exam.

You may be sent for a chest x-ray and other tests. These include a sputum cytology, the microscopic examination of cells obtained from a deep-cough sample of mucus in the lungs. A biopsy -- the removal of a small sample of tissue for examination under a microscope by a pathologist -- can confirm whether you have cancer.

If you have cancer, your health care provider will want to learn the stage (or extent) of the disease to find out whether the cancer has spread, particularly to the brain or bones, using tests such as computed tomography (CT) scan, magnetic resonance imaging (MRI), radionuclide scan, and bone scan.



Treatment Options



Prevention

The best means of prevention is to never start smoking or using chewing tobacco, or to stop using tobacco products. A healthy diet is an important part of prevention.



Treatment Plan

A treatment plan depends on the cell type, stage of disease, possibility for removing the tumor, and the patient's ability to survive surgery.



Drug Therapies

Various therapies can treat lung cancer.

- Chemotherapy can control cancer growth and relieve symptoms.
- Photodynamic therapy involves the use of a chemical that is injected into the bloodstream and absorbed by cells all over the body, and which remains in cancer cells for a longer time. A laser light activates the chemical, which then kills the cancer cells. Photodynamic therapy may be used to control bleeding, relieve breathing problems, or to treat very small tumors.



Surgical and Other Procedures

Surgery is the only treatment that offers hope of a cure of non-small cell lung cancer. Removal of a small part of the lung is a segmental or wedge resection, removal of an entire lobe of the lung is a lobectomy, and removal of an entire lung is a pneumonectomy. Radiation therapy is used before surgery to shrink a tumor, or after surgery to destroy remaining cancer cells. Radiation therapy may also be used instead of surgery or to relieve symptoms such as shortness of breath.



Complementary and Alternative Therapies

A comprehensive treatment plan for lung cancer may include a range of complementary and alternative therapies. Ask your team of health care providers about the best ways to incorporate these therapies into your overall treatment plan. Always tell your health care provider of herbs and supplements you are taking.

Nutrition and Supplements

Following these nutritional tips may help reduce symptoms:

- Try to eliminate suspected food allergens, such as dairy (milk, cheese, and ice cream), wheat (gluten), soy, corn, preservatives and chemical food additives. Your health care provider may want to test you for food allergies.
- Eat foods high in B-vitamins and iron, such as whole grains (if no allergy), dark leafy greens (such as spinach and kale), and sea vegetables.
- Eat antioxidant foods, including fruits (such as blueberries, cherries, and tomatoes) and vegetables (such as squash and bell pepper).
- Avoid refined foods such as white breads, pastas, and sugar.
- Eat fewer red meats and more lean meats, cold-water fish, tofu (soy, if no allergy) or beans for protein. You should use quality protein sources, such as organic meat and eggs, whey, and

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vegetable protein shakes as part of a balanced program aimed at gaining muscle mass and preventing wasting that can sometimes be a side effects of cancer therapies.

- Use healthy cooking oils, such as olive oil or vegetable oil.
- Reduce or eliminate trans-fatty acids, found in such commercially baked goods as cookies, crackers, cakes, French fries, onion rings, donuts, processed foods, and margarine.
- Avoid caffeine and other stimulants, alcohol, and tobacco.
- Exercise lightly, if possible, 5 days a week.

You may address nutritional deficiencies with the following supplements:

- A multivitamin daily, containing the antioxidant vitamins A, C, E, the B-complex vitamins and trace minerals such as magnesium, calcium, zinc and selenium.
- Probiotic supplement (containing *Lactobacillus acidophilus*), 5 - 10 billion CFUs (colony forming units) a day, for maintenance of gastrointestinal and immune health. You should refrigerate your probiotic supplements for best results.
- Omega-3 fatty acids, such as fish oil, 1 - 2 capsules or 1 tbsp. of oil one to two times daily, to help decrease inflammation and help with immunity. Cold-water fish, such as salmon or halibut, are good sources.
- Vitamin C, 500 - 1000 mg one to two times daily, as an antioxidant and for immune support.
- Alpha-lipoic acid, 25 - 50 mg twice daily, for antioxidant support.
- Resveratrol (from red wine), 50 - 200 mg daily, to help decrease inflammation and for antioxidant effects.
- L-theanine, 200 mg one to three times daily, for nervous system and immune support.
- Melatonin, 2 - 6 mg at bedtime, for immune support and sleep. Higher doses may be beneficial in lung cancer, so check with your health care provider.

Herbs

Herbs are generally a safe way to strengthen and tone the body's systems. As with any therapy, you should work with your health care provider to get your problem diagnosed before starting any treatment. You may use herbs as dried extracts (capsules, powders, teas), glycerites (glycerine extracts), or tinctures (alcohol extracts). Unless otherwise indicated, you should make teas with 1 tsp. herb per cup of hot water. Steep covered 5 - 10 minutes for leaf or flowers, and 10 - 20 minutes for roots. Drink 2 - 4 cups per day. You may use tinctures alone or in combination as noted.

- Green tea (*Camellia sinensis*) standardized extract, 250 - 500 mg daily, for antioxidant, anticancer, and immune effects. Use caffeine-free products. You may also prepare teas from the leaf of this herb.
- Reishi mushroom (*Ganoderma lucidum*) standardized extract, 150 - 300 mg two to three times daily, for anticancer and immune effects. You may also take a tincture of this mushroom extract, 30 - 60 drops two to three times a day.
- Olive leaf (*Olea europaea*) standardized extract, 250 - 500 mg one to three times daily, for anticancer and immune effects.

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- Milk thistle (*Silybum marianum*) seed standardized extract, 80 - 160 mg two to three times daily, for detoxification support.
- Fermented wheat germ extract, 1 packet dissolved in favorite beverage once daily, for anticancer and immune effects.

Homeopathy

An experienced homeopath can prescribe a regimen for supporting general health during lung cancer that is designed especially for you. Acute remedies may be useful for relief of symptoms associated with complications.

Homeopathy may help reduce symptoms and strengthen overall constitution, reduce the effects of stress during cancer, and may help decrease the side effects of chemotherapy.

- *Radium bromatum* is specific for radiation poisoning, especially followed by arthritic complaints. Acute dose is three to five pellets of 12X to 30C every 1 - 4 hours until symptoms are relieved.

Physical Medicine

Castor oil pack over lungs may decrease side effects of chemotherapy and aid the lungs in detoxification. Saturate a cloth with castor oil and apply directly to the skin, placing a heat source (heating pad or water bottle) on top. Leave in place for 30 minutes or more. For best results, use castor oil packs for three to four consecutive days per week. Packs may be used daily.

Acupuncture

While acupuncture is not used as a treatment for cancer itself, evidence suggests it can be a valuable therapy for cancer-related symptoms (particularly nausea and vomiting that often accompany chemotherapy treatment). Studies have indicated that acupuncture may help reduce pain and shortness of breath. Acupressure (pressing on rather than needling acupuncture points) has also proved useful in controlling breathlessness. Patients can learn this technique to treat themselves.

Some acupuncturists prefer to work with a patient only after the completion of conventional medical cancer therapy. Others will provide acupuncture or herbal therapy during active chemotherapy or radiation. Acupuncturists treat cancer patients based on an individualized assessment of the excesses and deficiencies of qi located in various meridians. In many cases of cancer-related symptoms, a qi deficiency is usually detected in the spleen or kidney meridians.



Prognosis/Possible Complications

The outlook varies by cell type and stage of the disease. In general, the prognosis is better for squamous cell cancers than for adenocarcinomas. Early detection is key to better chances of survival.



Following Up

Periodic follow-up is useful in helping to detect recurrence of the lung cancer or other smoking-related cancers. Frequent follow-up and rehabilitation for loss of lung function from cancer, surgery, or other treatment may be necessary.



Supporting Research

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