Lung cancer is the second most common cancer in men and women with approximately 225,000 new cases diagnosed in the U.S. in 2015. However, lung cancer is the most common cause of cancer death for both men and women. Despite the stigma associated with lung cancer and cigarette smoking, 20 percent of patients who develop the disease have never smoked.

Understanding the risks associated with lung cancer and being aware of the symptoms in order to aid in detection are important. In this helpful guide, we explain lung cancer and how it is detected and treated.

### Symptoms of Lung Cancer

Unfortunately, lung cancer does not usually exhibit symptoms in its earliest stages. Typically symptoms do not appear until the disease is in an advanced stage. If symptoms do appear, patients often attribute them to other problems such as an infection or the effect from long-term smoking.

Symptoms you should watch for include:

- Changes in a chronic cough (also known as “smoker's cough”)
- A new cough that won't go away
- Coughing up any amount of blood
- Shortness of breath
- Wheezing
- Chest pain
- A persistent hoarse voice
- Unexplained weight loss
- Headache
- Bone pain

If you have and are worried about one or more of these symptoms, schedule an appointment with your doctor as soon as possible.

### Types of Lung Cancer

Lung cancer is treated depending on the cell type and develops when cells within the lung suffer damage that cannot be repaired, which then leads to uncontrolled growth and formation of a tumor. This usually starts as a lesion or "spot" in the lung. Lung tumors can then cause harm by growing, invading other areas of the lung or spreading to other areas in the body. Not every abnormal "spot” or nodule in the lung is cancer and a careful work up from your doctor is important in making the correct and early diagnosis.

There are two main types of lung cancer:

**Non-Small Cell Lung Cancer**: Approximately 85 percent of lung cancers are non-small cell lung cancers, making it the most common type. Subtypes include squamous cell carcinoma, adenocarcinoma and large cell carcinoma. More recent advances in the treatment of non-small cell lung cancer, particularly adenocarcinoma, focuses on targeting specific changes or mutations in the tumor DNA. The presence of these mutations can help guide treatment and prognosis.

**Small Cell Lung Cancer**: This type of lung cancer accounts for nearly 15 percent of lung cancers. It grows more rapidly and spreads to other parts of the body sooner than non-small cell lung cancer. Small cell cancer tends to respond very well to chemotherapy.
Causes and Risk Factors

Exposure to a number of causes and risk factors may make it more likely for you to develop lung cancer. These include:

**Smoking**: The biggest risk factor for lung cancer is smoking – nearly 80 to 85 percent of all lung cancers in the United States are smoking-related. The number of cigarettes you smoke each day and the number of years you have smoked factor into your risk. Quitting smoking at any age may lower your risk.

**Secondhand Smoke**: According to the U.S. Surgeon General, nonsmokers who are regularly exposed to secondhand smoke at work and/or home increase their risk of developing lung cancer by 20 to 30 percent.

**Asbestos**: Exposure in the workplace to asbestos may increase your risk of lung cancer. When combined with smoking, exposure to asbestos results in an even higher risk of developing lung cancer.

**Radon**: This odorless gas may be found in any home. Testing kits are available at home improvement stores and can help you determine if you are living with a safe level of radon (if any).

**Family History**: If you have a parent, sibling or child with lung cancer, you are at an increased risk.

**Military Service**: Those who have served in the military or are currently serving are at risk for developing lung cancer because of exposure to a variety of industrial substances.

Diagnosis and Staging

Diagnosis and staging of lung cancer are critical to receiving the most appropriate treatment in a timely manner. Working with an experienced team of lung cancer experts is important to achieve the best possible outcome.

Patients are typically diagnosed in the following scenarios:

**Incidental Finding**: Sometimes patients may have an X-ray in preparation for a cardiac or orthopedic procedure, and that X-ray reveals an abnormal nodule in the lung. Generally these patients do not have any symptoms related to the lung cancer and are usually early stage.

**Symptoms**: Patients may present for evaluation of a symptom such as a cough or weight loss and testing reveals an abnormality. Symptoms develop as the disease stage advances.

**Screening**: Patients with higher risk factors for lung cancer may be eligible for lung cancer screening using low dose CT scans, which can help detect lung cancer at an early stage.

When lung cancer is suspected, a biopsy may be performed. There are several methods for biopsy including radiology needle biopsies, bronchoscopy exams and surgery. The goal is to obtain tissue for a pathologist to examine and diagnose the type of cancer. Our team can quickly determine the most effective method for diagnosis and treatment, often avoiding unnecessary tests and delays in treatment.

Staging, or determining the extent of the cancer, is based on whether it is confined to the lungs or whether it has spread to other organs or the lymph nodes. Staging usually includes one or more imaging tests such as a CT scan and/or PET scan.

This process is important for determining the severity of lung cancer and developing the best available treatment plan. Once the process is complete, your physician will discuss the results with you and recommend a personalized treatment plan.
Treatment

Just as each person is unique, so is each case of lung cancer. A variety of treatment options may be available depending on the type of cancer, its staging and your overall health. At the UF Health Cancer Center – Orlando Health, our multidisciplinary team of expert surgical, medical and radiation oncologists evaluate each case to determine the best possible outcome for our patients. Treatments may include:

Surgery

Surgery is one of the most common treatments for lung cancer, and the most effective treatment for early stage lung cancer. As the disease stage advances it may be necessary to add additional treatments such as chemotherapy and/or radiation therapy.

During surgery, your surgeon will remove the tumor and some surrounding healthy tissue. He or she also may remove some lymph nodes so they may be examined for cancer.

Lung cancer surgery is now performed using less invasive techniques such as video assisted surgery (VATS) or robotic da Vinci® lobectomy, an advanced procedure where small video cameras and instruments are placed between the ribs to remove the lung cancer, eliminating the need to open the chest and spread the ribs. The amount of lung removed depends on the tumor location, the patient's breathing capacity and tumor stage.

Options are:

- **Wedge Resection**: the removal of the section of lung containing the tumor
- **Segmental Resection**: the removal of a larger portion of lung
- **Lobectomy**: the removal of an entire lobe of one lung - this is the most common procedure performed and the most successful in controlling the disease
- **Pneumonectomy**: the removal of an entire lung, which is usually avoided

Chemotherapy

Chemotherapy uses powerful drugs to destroy cancer cells. Most patients are apprehensive about chemotherapy, but each patient experience is different and depends on the type of medication recommended. Most patients maintain good quality of life during treatment and side effect control has improved significantly. Chemotherapy may be given alone or in combination with other treatments such as surgery or radiation therapy. Common side effects of chemotherapy include nausea, vomiting, hair loss, fatigue and an increased risk of infection.

Targeted Therapy

Another type of systemic cancer treatment consists of targeted therapy. After molecular analysis of the tumor, certain genetic mutations in the cancer cell can be detected. These mutations are “targets” or weak spots in the cancer cell that can be blocked with oral chemotherapy agents. Eligible patients experience less side effects.

Radiation Therapy

Radiation therapy is a key part of treating lung cancer. This therapy involves using high-powered energy beams to target and destroy residual cancer cells. It also may be used to alleviate symptoms resulting from advanced-stage cancer. Often, radiation is given in combination with chemotherapy, which improves outcomes.

The most common form of radiation therapy is known as external beam radiation, which directs energy beams at the part of the body affected by cancer. Radiation therapy causes side effects such as fatigue and a temporary rash at the treatment site. Advances in radiation therapy have enabled more precise delivery of the radiation, decreasing side effects and damage to non-cancerous tissue. Proton beam radiation is a newer modality that uses protons as the energy source. This decreases damage to sensitive tissues and results in more effective cancer treatment and less side effects.
Cancer Support Services

At the UF Health Cancer Center – Orlando Health, our goal is to treat each person as an individual and deliver high quality cancer care while maintaining your quality of life. Our team approach incorporates all the resources necessary to ensure a safe cancer journey and maintenance of overall health and well-being. Some of the services available include:

Nutritional Counseling

Maintaining a healthy and balanced diet is an important part of any cancer treatment plan. Our registered, licensed dieticians work with our medical team to provide you with nutrition education and support before, during and after treatment.

Our services include customized meal plans, education on healthy eating and ongoing follow up visits for a healthy lifestyle after treatment. Our nutrition services are available at no cost to our patients.

Integrative Medicine Program

Our Integrative Medicine Program is designed to promote your well-being and nurture hope throughout your treatment. Our team of doctors and nurses collaborate with our Integrative Medicine team to provide complementary support services through our Cancer Support Community, Artists-in-Residence program, Spiritual Care department and Patient and Family Counseling department.

Survivorship Clinic

This follow up program provides care to patients who have survived cancer, are in long-term therapy to prevent cancer from returning or are at high-risk of developing cancer in the future.

Our Approach to Treatment

At the UF Health Cancer Center – Orlando Health, we understand how difficult the journey through cancer may be. Our goal is to support you with a team of knowledgeable and caring physicians who are focused on helping you overcome this disease.

Our team of experts aims to develop the most effective treatment plan for each patient. Through this multidisciplinary approach, we leverage the best of many minds to eliminate cancer and minimize recurrence, while focusing on survival and quality of life. Our commitment is to provide our patients with hope through outstanding, personalized care.

If you are experiencing any of the symptoms of lung cancer and are concerned about your health, contact us today. Our caring and knowledgeable specialists are here to help.

Make an appointment with a UF Health Cancer Center – Orlando Health physician by calling 321.843.7780.