



**The Lung and Thoracic Diseases Center includes a first-class team of pulmonary specialists. These physicians are specially trained in the diagnosis and management of pulmonary disorders including asthma, emphysema, chronic bronchitis, lung cancer, sarcoidosis, occupational lung disease, interstitial lung disease, and pulmonary fibrosis.**

## Pulmonology

To manage this variety of pulmonary disorders, the Lung and Thoracic Diseases Center offers complete diagnostic testing including:

- pulmonary function testing – a measurement of lung function
- methacholine challenge – a test to determine if a patient has asthma
- measurements of blood-oxygen levels – used to help diagnose and assess a patient's condition

The attention given to our diagnoses extends throughout our patient care. Patients have access to traditional patient care and through a relationship with the University of Pittsburgh may participate in key research trials.

### Asthma

Asthma, a common pulmonary condition, affects 5 percent of American adults and contributes to more than 600,000 hospitalizations annually. No two patients are the same. There are many causes of asthma and therefore, individual management is necessary to effectively treat each individual patient.

Our management approach consists of one-on-one teaching of disease concepts, medication usage, metered dose inhaler techniques, nebulizer usage, and peak-flow monitoring, to name a few. Once a patient's needs are identified, a comprehensive asthma action plan is developed to empower the patient in managing his or her asthma.

For patients who suffer from allergy-induced asthma, cutting-edge therapies are available to successfully control the attacks and symptoms by blocking immunoglobulin E (IgE), an underlying cause of allergic asthma.

### Emphysema and Chronic Bronchitis

Chronic Obstructive Pulmonary Disease (COPD) is a condition that reduces airflow to the lungs as the result of either blockage or excess mucus secretion. Emphysema and chronic bronchitis are two main types of COPD. The American Lung Association estimates that 16 million people are diagnosed with one type of COPD and at least 14 million people are living with an undiagnosed COPD. COPD, if left untreated, generally worsens over time. However, even with treatment, the condition may only be partially reversible.

The progression of COPD is best explained in stages. To determine the stage, a patient's lung function may be measured through a spirometry reading. This reading, in addition to a review of symptoms and other functions, will determine the patient's COPD stage. Treatment for COPD is based primarily on the patient's stage and may include breathing treatments, inhalers, oral medications, and oxygen, if needed.

The Lung and Thoracic Diseases Center recognizes that COPD can affect more than just a patient's breathing. Therefore, the center offers numerous ancillary services that deal with the physical and emotional effects of a patient's distressed respiratory system. Such services include access to our respiratory and sleep technicians, dietitians, and case managers.

### Lung Cancer

A multi-disciplinary approach is used in diagnosing a patient with lung cancer. Our pulmonologists are included in this approach as they are often the initial physician to suspect a malignancy. At this point, the patient is referred to one of the center's thoracic surgeons for further exploration and testing of the potential malignancy.

### **Interstitial Lung Disease**

Interstitial lung disease, which is actually a broad category of several types of lung disease, results in scarring or fibrosis of the lungs. For many of these diseases, it is unknown how or why they developed. However, the origin of some diseases can be pinpointed to an occupational or environmental exposure, such as contact with asbestos, silica, animal proteins, and gases.

The Lung and Thoracic Diseases Center offers a multidisciplinary approach to the diagnosis and treatment of patients with interstitial lung disease. A comprehensive evaluation may include additional testing and having previous biopsies reviewed by pulmonary pathologists. Once the biopsies are reviewed or additional testing is completed, a treatment plan is offered to the patient. This plan may include antifibrotic therapies and immunosuppressive therapy, such as the CAPACITY research trials, in addition to other experimental approaches offered through UPMC. The CAPACITY trials are double-blinded, placebo-controlled studies of the effectiveness and safety of pirdfenidone in patients diagnosed with idiopathic pulmonary fibrosis. When appropriate, lung transplantation is also discussed with the patient as a possible treatment.

### **Sleep Apnea**

Sleep disorders are among the most common pulmonary concerns. Affecting one out of every six Americans, sleep disorders vary in nature and degree. They include insomnia (dyssomnias), excessive sleepiness (hypersomnia), and abnormal behaviors during sleeping hours (parasomnias).

Sleep apnea, a common condition, occurs when a patient temporarily stops breathing while sleeping. If the condition is untreated, or the patient experiences a change in the non-breathing pattern (longer or more frequent episodes), the body's oxygen level can decrease to a point where sleep is actually being disrupted.

Two main types of sleep apnea may be clinically diagnosed. The first is obstructive sleep apnea, which occurs when breathing is disrupted temporarily by obstruction of the main airway. The second type is central apnea, which occurs when the breathing control center, located in the brain, is disrupted by an outside factor. People who endure sleep apnea often are not aware of their condition; they do not realize how often they are awakened during sleep. Since many serious health conditions may arise from an undiagnosed case of sleep apnea, it is imperative that patients take advantage of our association with the sleep lab at UPMC St. Margaret for a proper lab test, diagnosis, and treatment.

### **Pulmonary Arterial Hypertension (PAH)**

Pulmonary arterial hypertension (PAH) is continuous high blood pressure in the pulmonary artery, which is located in the lungs. This condition forces the right side of the heart to work harder to pump blood through the lungs. The excessive force and pressure can lead to right-sided heart failure, which is the most common cause of death in patients with pulmonary hypertension.

The two types of PAH are primary pulmonary hypertension and secondary pulmonary hypertension. Primary pulmonary hypertension may be inherited or may occur for unknown reasons. Secondary pulmonary hypertension is caused by conditions such as chronic heart disease, chronic lung disease, blood clots, or scleroderma.

PAH is a serious medical condition for which treatments are available, but there is no cure. Pulmonologists at the Lung and Thoracic Diseases Center work closely with all physicians, from the patient's referring primary care physician to our cardiologists. Our relationship with UPMC allows patients also to be referred to the Pulmonary Hypertension program at the UPMC Cardiovascular Institute.

### **Intensive Care Medicine**

The intensive care unit at UPMC St. Margaret is staffed by intensive care medicine specialists every hour of every day. Our intensive care unit surpasses the levels recommended by Leapfrog, an independent company used to establish, monitor, and measure health care standards. This type of care allows patients with multiple medical problems, or people who require complex thoracic surgical procedures, to be closely managed in our intensive care unit.

Our medical team is complemented with the expertise of a critical care pharmacist, physical and occupational therapists, respiratory therapists, speech therapists, and critical care nurses. To address a growing need for intensive care medicine, a new, state-of-the-art ICU is currently in the planning stage at UPMC St. Margaret.

### **Procedures**

At the Lung and Thoracic Diseases Center, we continue to advance the techniques and procedures that we use while striving to improve patient care. Some of the procedures and diagnostic testing available at UPMC St. Margaret are:

- bronchoscopy – used for the diagnosis and treatment of lung diseases
- thoracentesis – used to sample and drain fluid collecting around the lungs
- pulmonary function testing – used to measure how well the lungs function
- cardiopulmonary exercise testing – used to measure lung and heart function while exercising
- full sleep lab – used to examine, diagnose, and treat sleep-related disorders