



Pulmonary Hypertension

To understand pulmonary hypertension (PH), it helps to understand how blood flows into and out of your lungs. The right side of your heart pumps the blood into your lungs. In your lungs, the blood picks up oxygen and is pumped out of your lungs to the rest of your body by the left side of your heart. The heart pumping on left side is designed to pump against a *high pressure* since it is pumping the blood to all parts of our body. The right side of your heart is not designed to work as hard as the left side because the blood pressure in your lungs is usually *very low* (about a fifth of the blood pressure in the rest of the body).

What is pulmonary hypertension (PH)?

Pulmonary hypertension is when the blood pressure in your lungs is higher than normal. Pulmonary hypertension is difficult to measure and requires a catheter (small tube) be placed in the right side of the heart to measure the blood pressure in your lungs. When you have PH it is more difficult for the blood to travel through your lungs and to pick up oxygen. This can cause you to have difficulty breathing with the simplest activities (like getting dressed or walking a short distance).

What is the difference between PH and regular hypertension (high blood pressure)?

High blood pressure commonly refers to the blood pressure in the rest of the body, not the lungs, and is called *systemic hypertension*. This pressure is easily measured using a blood pressure cuff on your arm. Having systemic hypertension can damage your blood vessels and cause problems like strokes and heart attacks. This type of high blood pressure is very common and there are many good medications available to treat it. .

Is there more than one form of PH?

Yes, PH can be *secondary* PH or *primary* PH. Secondary PH is the most common type of PH and is the result of having another medical condition such as heart disease or lung disease. Primary PH also called *pulmonary arterial hypertension* (PAH), is less common. PAH can be caused by unknown reasons (*idiopathic PAH*), inherited (*familial PAH*) or can be caused by other conditions or toxins such as diet drugs or blood clots that damage the blood vessels in the lungs. PAH is a serious disease that at this time has no cure, but new treatments are being developed or available.

Can I prevent pulmonary hypertension from happening?

There is no clear way to prevent pulmonary hypertension (PH). Good general health practices such as not smoking and maintaining a healthy weight can help by decreasing the development of other medical problems known to cause secondary PH. Idiopathic PAH cannot be prevented since the cause is not known. Familial PAH cannot be prevented either, since we do not choose our parents. Since certain drugs (such as diet drugs and methamphetamine) may cause PAH, it is important to avoid these drugs.

What are the symptoms of pulmonary arterial hypertension?

There may be no signs or symptoms of PAH in its early stages. You might first notice you are short of breath with exercise and then short of breath at rest. You may also find yourself more tired (fatigued), feeling “light headed” or pass out. Swelling of your feet and ankles is common. Chest pain may occur and can be mistaken for a heart attack.

These symptoms are not specific to PAH. If you have these symptoms, contact your healthcare provider. If your health care provider thinks you may have PAH, they will order an ultrasound of the heart (echocardiogram) and a cardiac catheterization test (inserting a needle into the blood vessels leading to the heart and lungs).

How is pulmonary hypertension treated?

Treatment depends if the PH is secondary or primary. With secondary PH, the cause (heart or lung disease) of the PH is treated. Since the cause of PAH is less clear, it is more difficult to treat. ForThere are, however, several treatments including oral, inhaled and injectable medications that can improve the blood flow through the lungs. Most patients with PH or PAH also need to take medications to remove excess fluid (diuretics). Oxygen will be recommended if your oxygen level is low.

If I have PAH, when should I contact my healthcare provider?

If you have been diagnosed with PAH, you should contact your health care provider if you notice any change in your symptoms including increasing shortness of breath or swelling, feeling light headed, or if you have passed out.

Authors:

Karen A. Fagan, MD,
Mark Gillespie, PhD,
on behalf of the
Assembly on Pulmonary
Circulation of the American
Thoracic Society

www.thoracic.org

ATS Patient Health Series
©2011 American Thoracic Society