



Patient education hand-outs: Tetralogy of Fallot, Transposition of the Great Arteries after Mustard/Senning Repair, Pulmonary hypertension, Coarctation

This section is in development. We are developing patient education hand-outs on different types of heart defects. More to come...

Pulmonary Hypertension

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Q and A: Pulmonary Hypertension

What is pulmonary hypertension?
If you have pulmonary hypertension (PH), it means that the blood pressure in your lungs is higher than normal. The heart has two sides that pump blood in two directions: into the lungs and into the body. When you breathe, you take in blood/oxygen-rich air from your lungs. When you breathe out, you release carbon dioxide (CO₂) from your lungs. The pressure of blood in your body (blood pressure) is always measured at one point: when the heart beats (systole) and when the heart relaxes (diastole). Normal blood pressure in the body should be less than 120/80 mmHg. In the lungs, the pressure should be less than 30 mmHg. If it is, or higher (200 mmHg), the pressure in the lungs is higher than 30 mmHg, you have PH.

How do you measure lung pressure?
The most direct way to measure lung pressure is by catheterization. A small tube is placed in your heart and a small pressure measurement is taken. A less invasive way to measure lung pressure is through an ultrasound of the heart (echocardiogram) or a catheter. Through catheter, your doctor can measure the speed of your blood flow through the heart. It also allows your doctor to determine whether you have any narrowing or blockage in your blood vessels. This allows them to determine your lung pressure.

What causes pulmonary hypertension?
Doctors help us find out what causes the PH. There are many ways to increase pressure. You can turn the water on and increase the amount of water. You can also turn on the heater and make the water flow through a smaller opening. PH can be caused by problems with the heart or the lungs. It can also be caused by narrowing or blocking of the heart and blood vessels, which increases resistance.

Can congenital heart disease (CHD) cause pulmonary hypertension?
There are many problems in the heart that can cause PH. If you have a connection (shunt) in your heart that creates extra blood flow to the lungs, this can cause PH. The most common defects that cause PH are holes in the heart: atrial septal defect (ASD), ventricular septal defect (VSD), and patent ductus arteriosus (PDA). Other defects that can cause PH include bicuspid aortic valve, aortic coarctation, and any defect in the right ventricle (RV) and any defect in the left ventricle (LV).

If the blood pressure in the left side of your heart (left side) is high, it can also cause PH. The pressure can rise due to a narrowing of the heart's wall. Blood flows into your ventricle like air flows into a balloon. You might think, "I'm not a balloon, I'm a heart!" But if your heart wall gets thicker, it's like a balloon that's been inflated. The air also can't get out of the balloon, so the pressure in the lungs and the heart rises.

What are the other causes of pulmonary hypertension?
Around the heart, there are many problems that can cause or worsen PH. These include problems in the lungs and problems elsewhere in the body.

Problems in the lungs: There are many lung diseases that can cause PH. CHD that can cause PH is not just the heart and lung development are connected. CHD patients can have lung problems in their lung structures. Their lungs may not have developed enough oxygen-producing cells. Certain heart defects can cause the lungs blood vessels to become blocked or compressed. Your lung tissue may also be damaged by smoking, from heart surgery. If your CHD blood vessel is blocked or compressed, your lungs may not be able to expand normally.

Tetralogy of Fallot



Transposition of the Great Arteries after Mustard/Senning Repair

