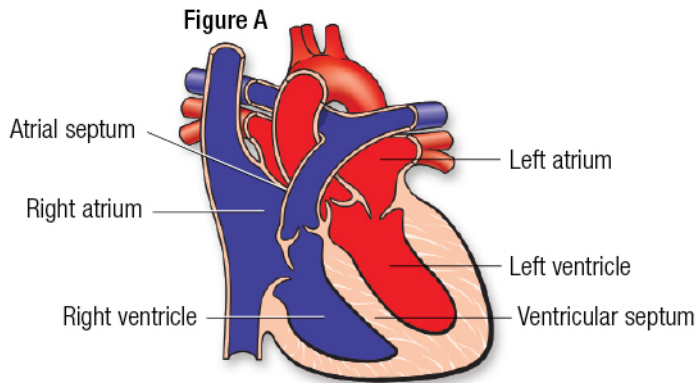


The Normal Heart and How It Works

The normal heart is a strong, hard-working pump made of muscle tissue. It's about the size of a person's fist.



The heart has four chambers. The upper two chambers are the atria, and the lower two are the ventricles (Figure A). The chambers are separated by a wall of tissue called the septum. Blood is pumped through the chambers, aided by four heart valves. The valves open and close to let the blood flow in only one direction.

Congenital defects may involve a valve, a chamber, the septum, an artery or blood flow issues.

The four heart valves are:

1. the tricuspid valve, located between the right atrium and the right ventricle;
2. the pulmonary (pulmonic) valve, between the right ventricle and the pulmonary artery;
3. the mitral valve, between the left atrium and left ventricle; and
4. the aortic valve, between the left ventricle and the aorta.

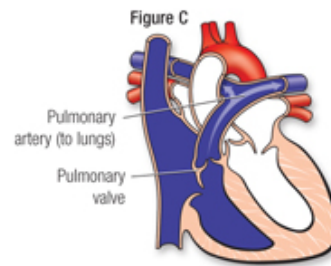
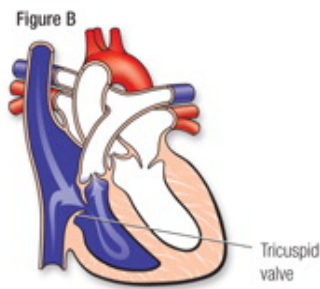
Each valve has a set of "flaps" (also called leaflets or cusps). The mitral valve normally has two flaps; the others have three.

Healthy heart blood flow patterns

The normal blood flow is a cycle that flows like this; body-heart-lungs-heart-body. Next we will look at each step.

From the body to the heart. Figure B below shows dark bluish blood, low in oxygen, flowing back to the heart after circulating through the body. It returns to the heart through veins and enters the right atrium. This chamber empties blood through the tricuspid valve (B) into the right ventricle.

The Normal Heart and How It Works

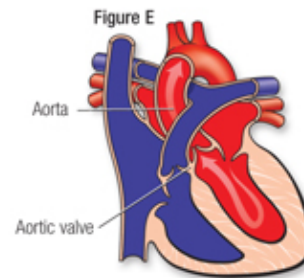
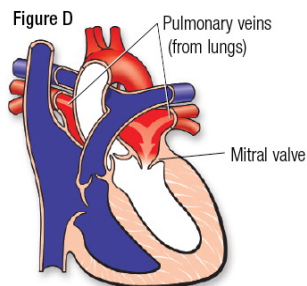


From the heart to the lungs

The right ventricle pumps the blood under low pressure through the pulmonary valve into the pulmonary artery. From there the blood goes to the lungs where it gets fresh oxygen (C).

From the lungs to the heart

After the blood is refreshed with oxygen, it's bright red. Then it returns to the left heart through the pulmonary veins to the left atrium. From there it passes through the mitral valve (D) and enters the left ventricle.



From the heart to the body

The left ventricle pumps the red oxygen-rich blood out through the aortic valve into the aorta (E). The aorta takes blood to the body's general circulation. The blood pressure in the left ventricle is the same as the pressure measured in the arm.