

Transposition of the Great Arteries

Normally, the pulmonary artery carries venous (bluish) blood from the right ventricle to the lungs to get oxygen. Then the aorta carries oxygen-rich blood from the left ventricle to the body. In transposition of the great arteries, the vessels are reversed. The aorta is connected to the right ventricle so that venous (bluish) blood is carried to the body.

The pulmonary artery is attached to the left ventricle so that oxygen-rich (red) blood is carried back to the lungs. Infants born with transposition survive only if they have one or more connections that let oxygen-rich (red) blood reach the body. These connections may be in the form of a hole between the two atria (atrial septal defect), or the two ventricles (ventricular septal defect), or a vessel connecting the pulmonary artery with the aorta (Patent ductus arteriosus). Most babies with transposition of the great arteries are extremely blue soon after birth because these connections are not adequate.

To improve the body's oxygen supply, a special procedure called balloon atrial septostomy is used during heart catheterization. It enlarges the atrial opening and helps the baby by reducing the cyanosis.

Two general types of surgery may be used to help correct the transposition. One common surgical procedure creates a tunnel inside the atria. It redirects oxygen-rich (red) blood to the right ventricle and aorta, and redirects

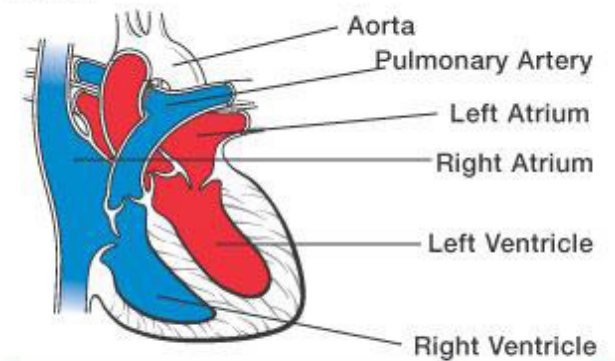
venous (bluish) blood to the left ventricle and pulmonary artery. This operation is called a venous switch or intra-atrial baffle procedure. It has other names too, including the Mustard procedure or the Senning procedure. It's usually done in infancy. Many factors, including the degree of cyanosis, determine how early in life a child may need surgery.

In another surgical procedure, the major arteries are switched. The aorta is connected to the left ventricle, which pumps oxygen-rich (red) blood to the body. The pulmonary artery is connected to the right ventricle, which pumps venous (bluish) blood to the lungs. This arterial switch procedure may be done in the first few weeks after birth or, depending in various factors, slightly later. If there's a large ventricular septal defect or other defects related to the transposition, the repair gets more complicated. Then other surgical procedures may be needed.

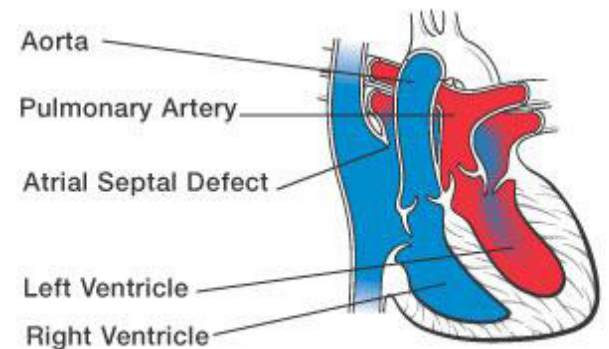
After surgery, the long-term outlook varies quite a bit. It depends largely on how severe the defects were before surgery. Lifelong follow-up is needed to be sure that any remaining defects or problems are treated properly. Children with transposition of the great arteries risk an infection of the heart's walls or valves (endocarditis) before and after surgery. To prevent endocarditis your child should be given antibiotics such as amoxicillin before dental work and certain surgeries. Good dental hygiene lowers the risk of endocarditis. For more information about dental hygiene and preventing endocarditis, ask your pediatric cardiologist.

Transposition of the Great Arteries

Normal



TGA



Transition of
the Great Arteries