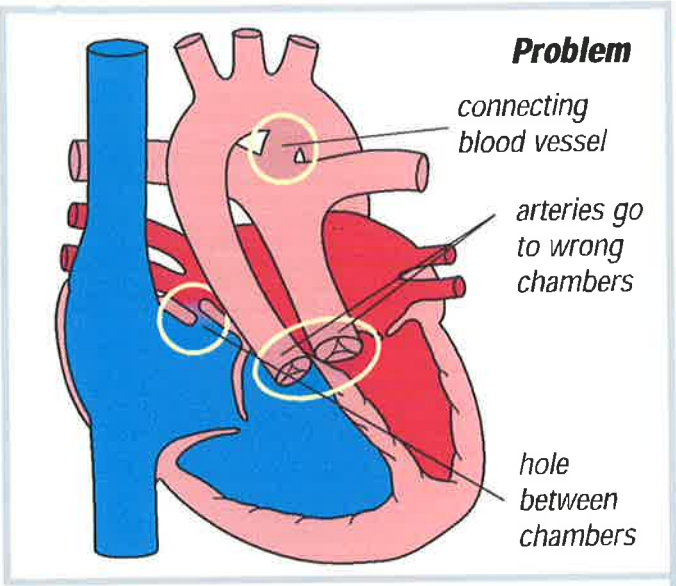
Transposition of the Great Arteries (TGA)

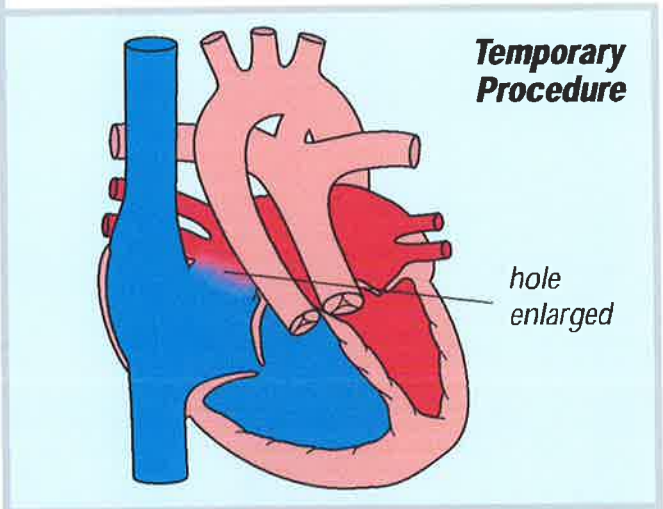
With Intact Ventricular Septum



The two main blood vessels coming out of the heart, the pulmonary artery and the aorta, are in the opposite position of where they should be (transposed). There is a hole between the top two chambers of the heart (artial septal defect). There is also a connecting blood vessel between the aorta and the pulmonary artery (patent ductus arteriosus).

When the aorta and pulmonary artery are in the opposite position, the body receives unoxygenated (blue) blood instead of the oxygenated (red) blood it needs. The lungs receive red blood rather than the normal blue. When there is a hole between the top two chambers of the heart, there is some mixing of red and blue blood. There must be some mixing of blood for the child to survive.

Although essential at birth, the patent ductus arteriosus normally closes itself shortly after birth. There must be adequate mixing of the red and blue blood to reduce cyanosis (low oxygen levels). In newborn infants a procedure is done in the cardiac catheterization lab to remove the atrial septum (balloon atrial septostomy). This allows sufficient mixing of the red and blue blood. This atrial septum defect is closed when the surgical procedure (atrial switch) is done. If the patent ductus arteriosus is adequate, this palliative procedure may not be necessary.



To correct the problem, the aorta and the pulmonary artery are moved to their proper position (arterial switch). The hole between the top two chambers of the heart is closed using a patch. The connection from the aorta to the pulmonary artery is tied off and/or cut. The coronary arteries **must** also be moved during this operation. The coronary arteries are the very small blood vessels that supply the heart muscle itself with oxygen-rich blood.

The surgery is done through a median sternotomy (chest) incision.