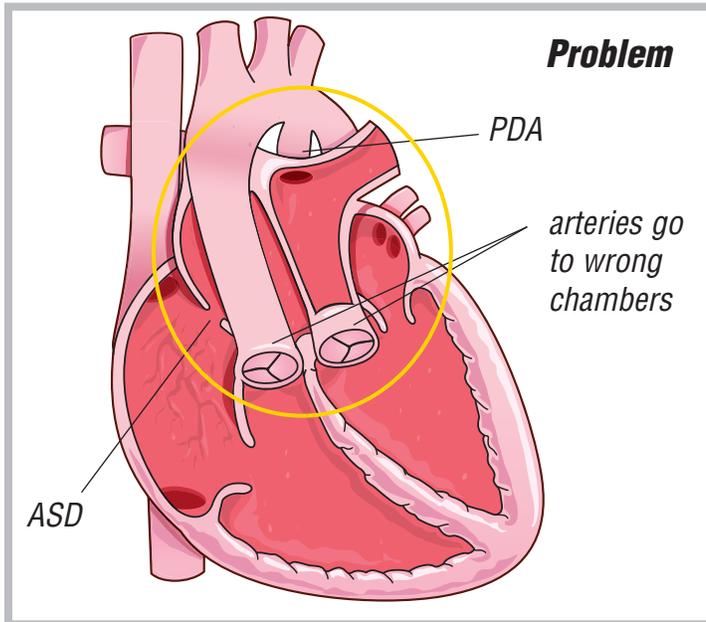


Transposition of the Great Arteries (TGA)

With Intact Ventricular Septum



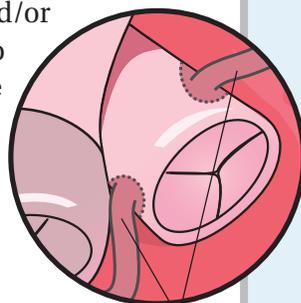
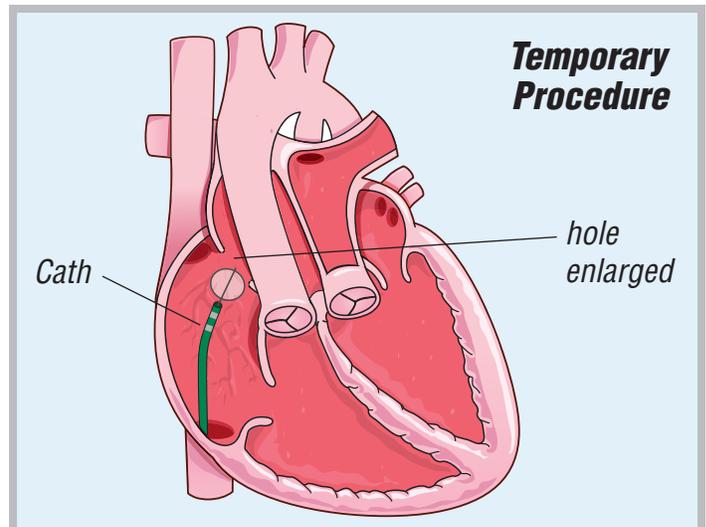
The two main blood vessels coming out of the heart, the pulmonary artery and the aorta, are in the opposite position of where they should be (transposed). There is a hole between the top two chambers of the heart (atrial septal defect or ASD). There is also a connecting blood vessel between the aorta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

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 which must occur for the child to survive until the heart is repaired.

Although essential at birth, the PDA 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 (arterial switch) is done. If the PDA is adequate, this palliative (temporary) procedure may not be necessary.

To correct the problem, the aorta and the pulmonary artery are moved to their proper position (arterial switch). The ASD is closed using a patch. The PDA 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.



coronary arteries switched

