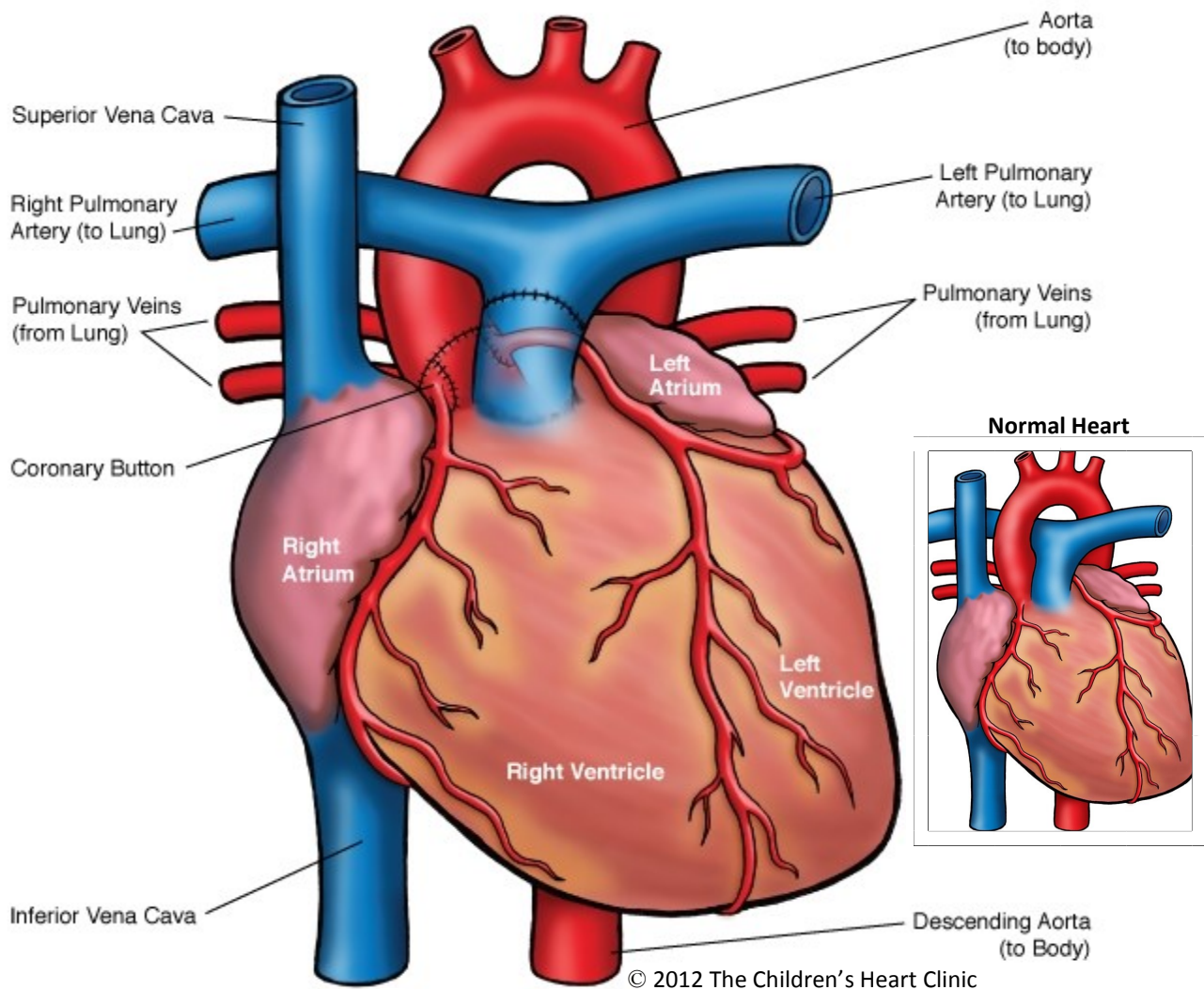


## Arterial Switch Operation



### NOTES:

Children's Heart Clinic, P.A., 2530 Chicago Avenue S, Ste 500, Minneapolis, MN 55404  
West Metro: 612-813-8800 \* East Metro: 651-220-8800 \* Toll Free: 1-800-938-0301 \* Fax: 612-813-8825  
Children's Minnesota, 2525 Chicago Avenue S, Minneapolis, MN 55404  
West Metro: 612-813-6000 \* East Metro: 651-220-6000

---

## Arterial Switch Operation (ASO)

An arterial switch operation is done to correct transposition of the great arteries (TGA) with or without ventricular septal defect (VSD) (see [TGA](#)). This procedure is typically done within the first week of life.

A median sternotomy (incision through the middle of the chest) is done. The infant is placed on cardiopulmonary bypass (heart-lung machine). The patent ductus arteriosus (PDA) is ligated and divided. Both the aorta and pulmonary artery are divided. A Lecompte maneuver is performed, bringing the pulmonary artery in front of, or anterior to, the aorta. The aorta is then sutured onto the old pulmonary artery root (now “neoaortic” root). The right and left coronary arteries are removed with a “button” of tissue from the old aortic root. The coronary buttons are then sewn on to the newly constructed “neoaortic” root. A piece of the patient’s own pericardium (sac surrounding the heart) is used to reconstruct the old aortic root (now “neopulmonary” root) where the coronary buttons were removed. The pulmonary arteries are then reconnected to the “neopulmonary” root, completing the arterial switch portion of the operation. The [atrial septal defect \(ASD\)](#) and [ventricular septal defect \(VSD\)](#), if present, are closed (see [ASD repair](#) & [VSD repair](#)). Occasionally, the chest is left open and the incision is covered with a piece of Gore-tex® (Gore) or similar material. The chest is then closed in the usual manner a day or two later.

### Typical Post-Operative Course:

- **Surgery Length:** 4-5 hours
- **Typical Lines:** Most children will return to the Cardiovascular Care Center after surgery with a breathing tube, an arterial line to monitor blood pressure, a central venous line (for giving IV medicines and drawing labs), a peripheral IV, chest tubes to drain fluid, a foley catheter to drain urine, and temporary pacemaker wires.
- **Typical Post-Operative Recovery:** It is common for newborns to get somewhat “puffy” after complex neonatal surgeries. The breathing tube is usually removed in the first few days following surgery, once the patient is near their pre-operative weight and fluid status. The arterial line is usually removed once the breathing tube is out and most IV medicines are stopped. The central venous line is removed once most IV medicines are stopped and labs no longer need to be drawn. Chest tubes are usually removed 24-48 hours after surgery, once the chest is closed and output of fluid is minimal.
- **Typical Length of Stay:** A child usually stays in the hospital for 10-14 days following an ASO. Length of stay is usually dictated by the time it takes for the infant to learn to eat. It is not uncommon for babies to take a week or longer to learn to eat following surgery.

**Typical Home Medications:** Children will require one or more medications at home following an ASO such as:

- Diuretics (Lasix) to control fluid
- Anticoagulation (Aspirin) to prevent clotting
- Afterload reduction (Enalapril, Captopril)