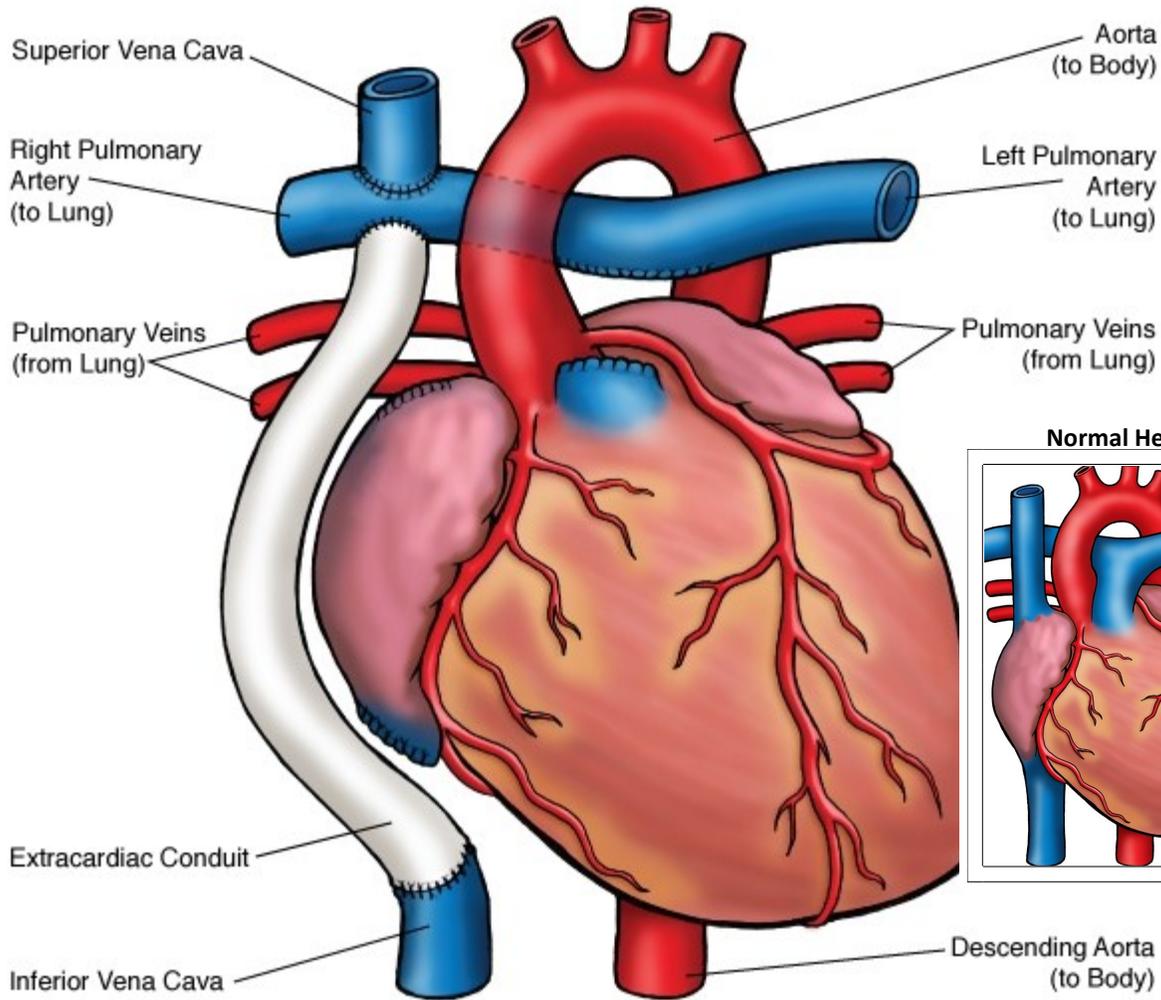




Modified Fontan Procedure (Extracardiac Conduit)



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 Hospitals and Clinics of MN, 2525 Chicago Avenue S, Minneapolis, MN 55404
West Metro: 612-813-6000 * East Metro: 651-220-6000

Modified Fontan Procedure: Extracardiac Conduit

The Fontan procedure is usually the third procedure done in a series of surgeries to complete palliation of single ventricle patients. This procedure separates the “blue,” deoxygenated blood from the “red,” oxygenated blood circuit. Once the Fontan is done, deoxygenated blood drains passively to the pulmonary arteries, then to the lungs. Blood receives oxygen from the lungs and returns to the heart, where it is actively pumped out to the body. This procedure is usually done between 2-4 years of age.

During surgery, the chest is opened through the previous incision, using a median sternotomy. The operation may or may not involve the use of cardiopulmonary bypass (heart-lung machine), depending on the surgical plan. A Gore-Tex® (Gore) tube graft is cut to the appropriate length. An incision is made on the pulmonary artery near the area of the existing [bidirectional Glenn shunt](#) (cavopulmonary anastomosis) and the tube graft is sutured to the artery. Once that is complete, the inferior vena cava is divided from the atrium. The lower end of the Gore-Tex® (Gore) tube graft is then sutured to the inferior vena cava. Occasionally, a fenestration (small hole) is created between the tube graft and the atrium.

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 often, temporary pacemaker wires.
- **Typical Post-Operative Recovery:** The breathing tube is usually removed shortly after surgery. The arterial line is usually removed a few days after surgery, once many of the IV medications are no longer needed. The central line is left in place as long as labs and IV medicines are needed. Chest tubes stay in place until the output of fluid decreases. It is common for children to have chest tube drainage that persists for a period of time after a Fontan procedure. Occasionally, chest tubes will be placed on either side of the chest to control the fluid. Children will also be given diuretics (such as Lasix) to help control fluid. Shortly after surgery, the child is placed on heparin. Heparin is a medicine that is used to prevent clotting in the Fontan circulation. Once the patient is eating and drinking, they are transitioned to Coumadin, which is an oral medication used to prevent clotting in the blood. A value known as the International Normalized Ratio, or INR, is followed to make sure that the dose of Coumadin is correct. Excessively high INR levels can cause spontaneous bleeding, and low INR levels can lead to clot formation. Once the INR level is therapeutic, the heparin is stopped. Coumadin will be continued at home for at least 6 months after surgery. Your cardiologist will then discuss options for long-term anticoagulation with you.
- **Typical Length of Stay:** A child usually is in the hospital for 10-14 days, occasionally longer, following a Fontan procedure. The length of hospitalization is usually dictated by the amount of time it takes for chest tube drainage to subside.

Typical Home Medications: Children will require one or more medications at home following a Fontan procedure such as:

- Anticoagulation (Coumadin or Lovenox) to control clotting
- Diuretics (Lasix, Zaroxolyn, Diuril) to control fluid
- Afterload reducing agent (Enalapril or Captopril)