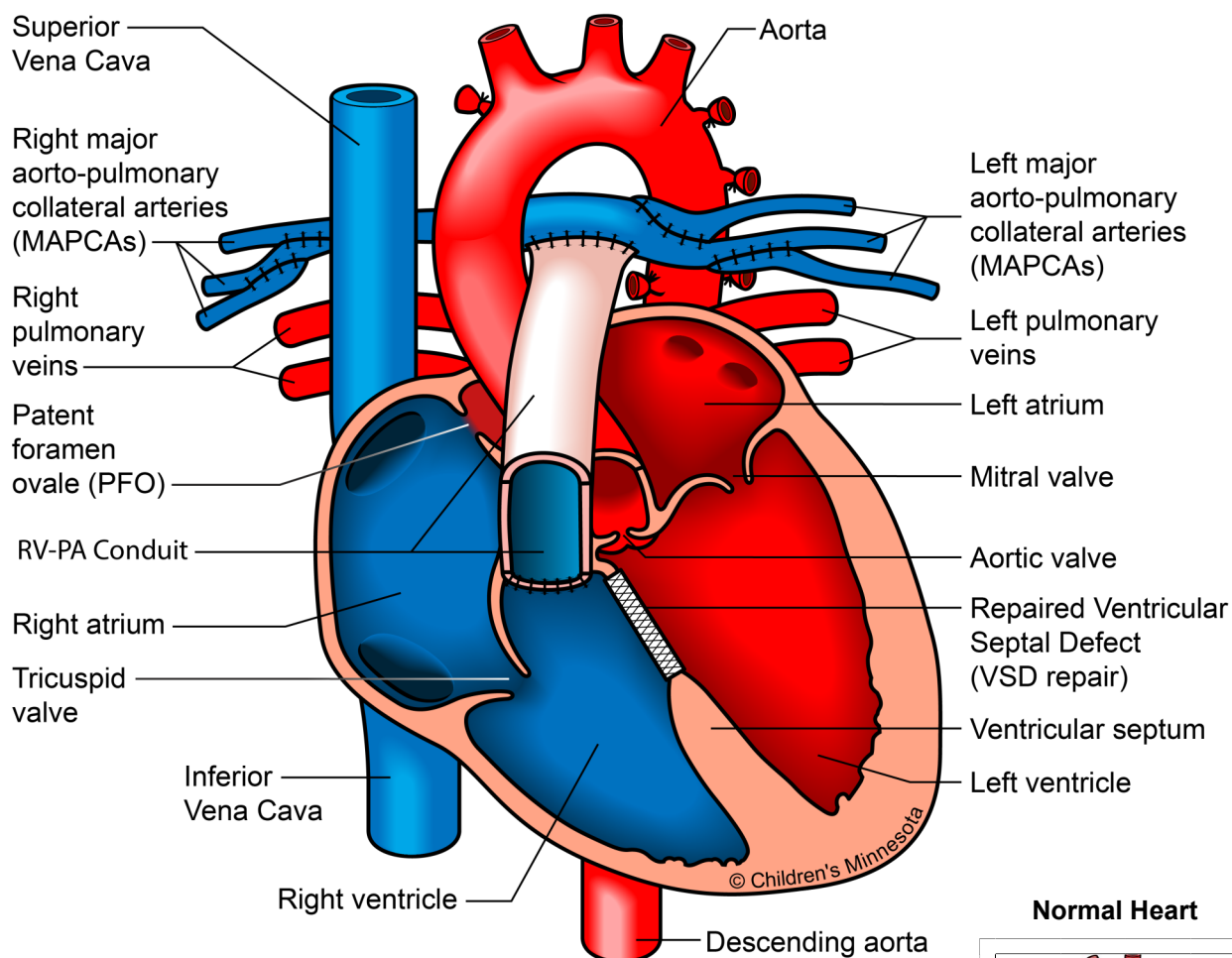
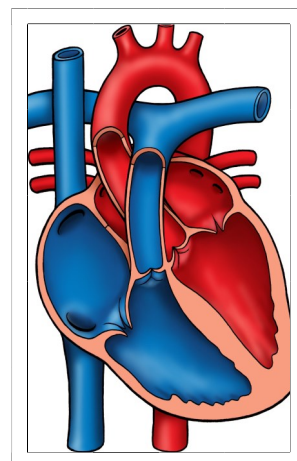


## Unifocalization



**Normal Heart**



Notes:

The Children's Heart Clinic, 2530 Chicago Avenue S, Ste 500, Minneapolis, MN 55404  
 612-813-8800 \* Toll Free: 1-800-938-0301 \* Fax: 612-813-8825  
 Children's Hospital of Minnesota, 2525 Chicago Avenue S, Minneapolis, MN 55404

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## Unifocalization Procedure

A unifocalization procedure is a surgery that can be used to correct congenital heart defects such as Pulmonary Atresia/Ventricular Septal Defect with Major Aortopulmonary Collaterals (PA/VSD/MAPCAs). In congenital heart defects, such as PA/VSD/MAPCAs, there are anomalous vessels arising off of the descending aorta that supply blood flow to the lungs. In this type of heart defect, there may or may not be true pulmonary arteries delivering blood to the lungs. When present, they are often diminutive in size. The unifocalization procedure is done to bring together (unifocalize) the anomalous vessels (MAPCAs) to the true pulmonary arteries to create new, larger, pulmonary arteries. When true pulmonary arteries are not present, the MAPCAs are brought together to make new pulmonary arteries.

During surgery, a median sternotomy (incision through the middle of the chest) is done through the patient's prior incision, if present. The patient is placed on cardiopulmonary bypass (heart-lung machine). The MAPCAs are ligated (tied off) and disconnected from their origins on the aorta. If there are existing diminutive pulmonary arteries, the MAPCAs are then sewn to these. If no pulmonary arteries are present, then the MAPCAs are sewn together to form new pulmonary arteries. Occasionally, the surgeon will also sew a patch (piece of prosthetic material) to the pulmonary arteries to help make them bigger in size. If a part of the surgical plan, a Dacron patch will be used to close the ventricular septal defect (VSD). Occasionally, based on patient's anatomy, a hole (fenestration) will be left in the center of the VSD patch, to allow blood to mix between the two ventricles (bottom chambers of the heart). Lastly, a right ventricle to pulmonary artery (RV-PA) conduit is placed. There are many types of materials used for RV-PA conduits. Depending on the surgical plan and patient's anatomy, conduits made of Goretex® (Gore), homograft (cadaver valved tissue), Contegra® conduits (Medtronic) (valved bovine (cow) jugular vein), or Hancock® conduits (Medtronic) (Dacron tube graft containing a porcine (pig) valve) can be used. Incisions are made on the pulmonary artery and right ventricle. An appropriate sized RV-PA conduit is selected. One end of the conduit is sewn onto the incision on the pulmonary artery and the other end is sewn onto the incision on the right ventricle.

### Typical Post-Operative Course:

- Surgery Length: 6+ hours
  - Typical Lines: Most patients 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, and a foley catheter to drain urine.
  - Typical Post-Operative Recovery: The breathing tube is generally removed within a few days after surgery. The arterial line is usually removed within a few days after the breathing tube is removed and once 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 following surgery, once the output of fluid is minimal. Depending on the type of conduit placed and surgical plan, the patient may be placed on aspirin for a period of time after surgery.
- Typical Length of Stay: A patient usually stays in the hospital for 20 days following a Unifocalization procedure.

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

- Diuretics (Lasix) to control fluid
- Anticoagulation (Aspirin) to prevent clotting
- Afterload reducing agent to decrease the workload on the heart (Enalapril, Captopril)