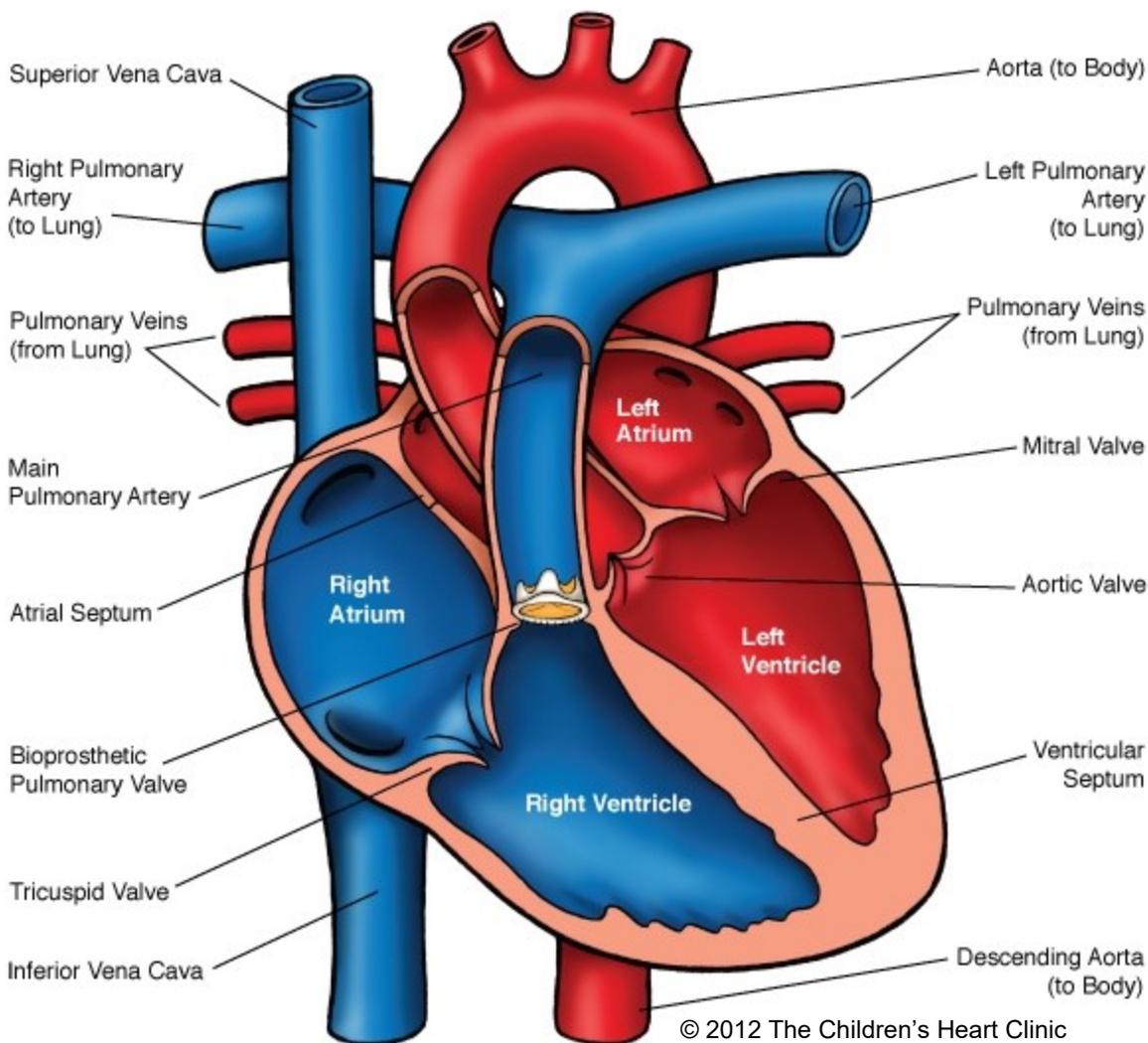


Pulmonary Valve Replacement (PVR)



Notes:

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Pulmonary Valve Replacement (PVR)

Pulmonary valve replacements are done to fix a leaky, incompetent pulmonary valve. There are many reasons why a patient would need their pulmonary valve replaced. Often-times, this can be done years after prior repair of Tetralogy of Fallot or after catheter based interventions for pulmonary stenosis (narrowing). Occasionally, patients without prior surgical intervention will have their pulmonary valve replaced, if required. Pulmonary valve replacements can also be done to correct a pulmonary valve opening that is too narrowed (stenotic). Pulmonary valve replacement may be done surgically or in the cardiac catheterization lab.

Surgical replacement: Pulmonary valves are usually replaced with a bioprosthesis, or tissue valve made of biologic material. Often, the type of valve used is a porcine bioprosthesis, which is a valve from a pig that is mounted in a stented support. 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 right ventricular outflow tract (RVOT) is opened, and the pulmonary valve is removed. An appropriate sized bioprosthetic porcine (pig) valve is selected and sewn into place. Occasionally, a patch of bovine (cow) pericardium (sac surrounding the heart) is used to augment the pulmonary artery and RVOT where the valve was placed.

Catheter-based replacement: For patients who meet appropriate criteria, valve replacement may be done in the cardiac catheterization lab via the femoral vessels. In native right ventricle outflow tract, a Harmony™ (Medtronic) or Alterra (Edwards) may be placed. For patients who have had previous surgically placed valves or a right ventricle to pulmonary artery conduit, a Melody™ (Medtronic) or Edwards-Sapien S3 valve may be placed.

Typical Post-Operative Course:

- **Surgery Length:** 4 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, a Foley catheter to drain urine, and occasionally, temporary pacing wires.
- **Typical Post-Operative Recovery:** The breathing tube is usually removed shortly surgery. The arterial line is usually removed within a few days, 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.
- **Typical Length of Stay:** A patient usually stays in the hospital for 4 days following a surgical PVR.

Typical Post-Catheterization Course:

- Patients will stay overnight in the Cardiovascular Care Center. They will have a chest x-ray, with an echocardiogram and EKG the following morning. If stable, length of stay is typically 24 hours.

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

- Diuretics (Lasix) to control fluid
- Anticoagulation (Aspirin) to prevent clotting
- Bacterial endocarditis prophylaxis may be required.