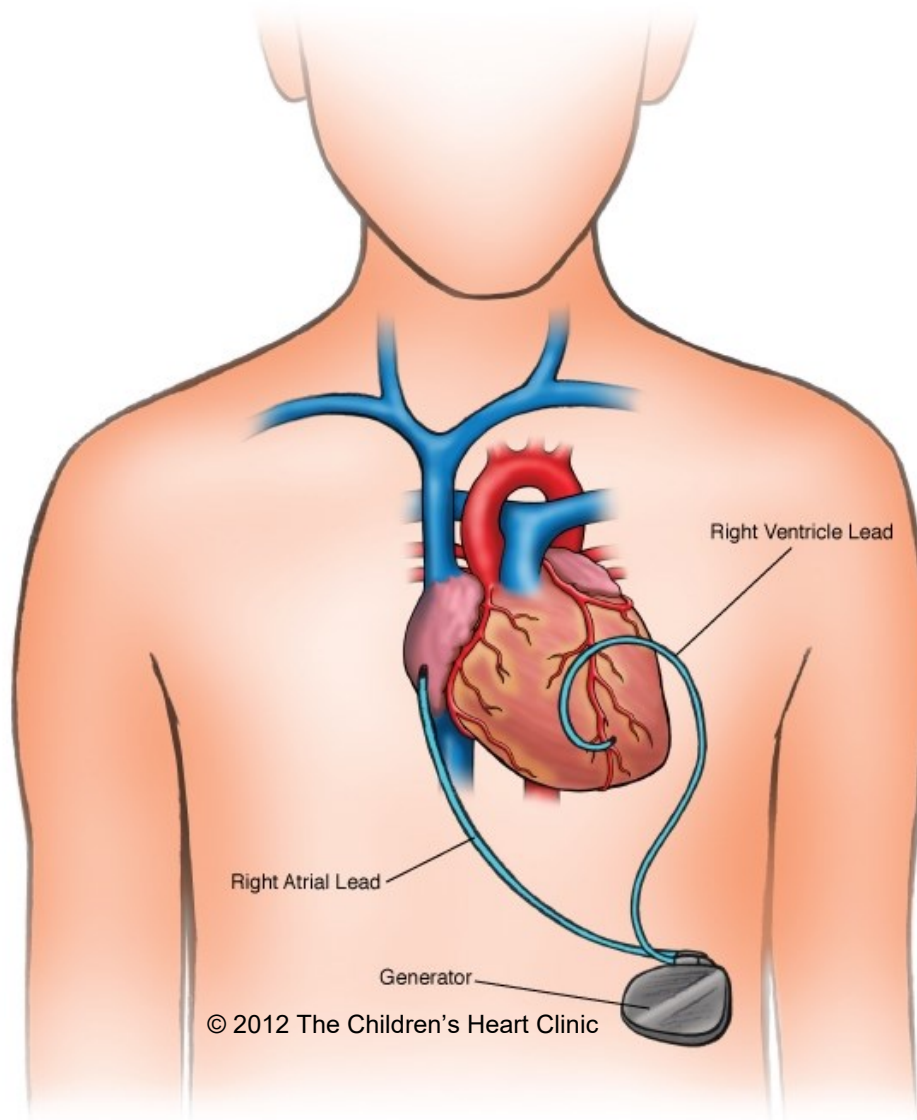


## Pacemaker Placement: Epicardial



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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## Epicardial Pacemaker Placement

An epicardial pacemaker is a device placed superficially on the heart that can be used to control a patient's heart rate at a faster or more appropriate rate. Pacemakers are placed in patients who are deemed to have inappropriately slow heart rates (bradycardia) or when the electrical signals from the top chamber of the heart (atria) are not communicating with the lower chambers of the heart (ventricles), known as heart block. A patient can either be born with heart block or acquire it during surgery. Pacemakers are placed on the epicardium (on the outside of the heart) when the patient is too small to have a device placed inside of their heart (transvenous system) or in patients with single ventricle anatomies, such as after a modified Fontan procedure. A pacemaker consists of atrial and/or ventricular pacing leads and a generator (or battery).

Depending on the surgical plan, either a median sternotomy (incision through the middle of the chest) or partial sternotomy (incision through the lower part of the chest) is done through the patient's prior incision, if present. As indicated, pacing leads are sutured onto either the atrium (top chamber of the heart), ventricle (bottom chamber of the heart), or both. Pacing leads can either be unipolar or bipolar. After the leads are secured and tested, to assure that they pace and sense the heart rate appropriately, they are tunneled under the skin to the upper abdomen. There, a separate incision is made to create a "pocket" that will hold the pacemaker generator (battery). The ends of the pacing leads are attached and secured to the generator, which is then tucked into the abdominal "pocket". Both incisions are then closed.

### Typical Post-Operative Course:

- Surgery Length: 3 hours
- Typical Lines: Occasionally, 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: Many patients will have their breathing tube either removed in the operating room or shortly after surgery. The arterial line, if present, is usually removed the next 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 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 an epicardial pacemaker placement.

**Typical Home Medications:** Children may require one or more medications at home following placement of an epicardial pacemaker such as:

- Diuretics (Lasix) to control fluid