

Let's Talk About...

Life support (ECMO)

What is ECMO?

Extracorporeal membrane oxygenation (ECMO) is a lifesaving treatment that uses a machine to take over a child's heart and lung functions. Extracorporeal means "outside the body." A membrane oxygenator is a device that acts as a lung.

When your child has ECMO:

- The membrane oxygenator adds oxygen to and removes carbon dioxide from your child's blood.
- A heart and lung machine will support your child and allow them to rest while recovering from an illness.



Why does my child need ECMO?

ECMO is used when standard heart and lung treatments are not working well enough to support your child. It may be used if your child:

- Is waiting for a lung transplant
- Has a severe heart or lung disorder
- Needs to recover from heart surgery or heart or lung failure

What are the types of ECMO?

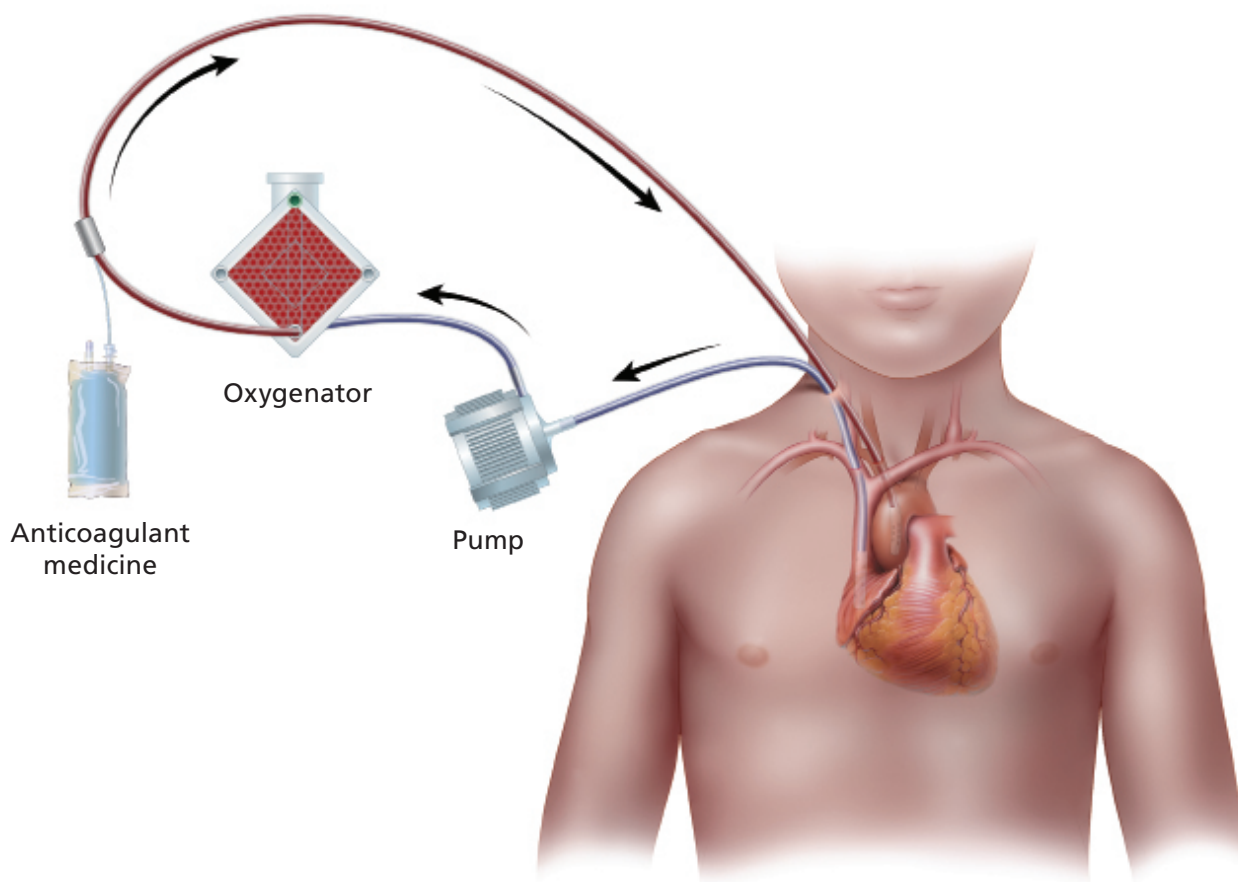
There are two types of ECMO support:

- **Veno-arterial (VA) ECMO** provides support for both the lungs and heart. When your child receives VA ECMO, the surgery team will put two cannulas in your child's neck or groin (depending on your child's size).
- **Veno-venous (VV) ECMO** provides support for children in respiratory crisis. VV ECMO allows your child's lungs to rest and heal. When your child receives VV ECMO, the surgery team will put a two-lumen cannula in your child's neck. They may add another cannula based on your child's size.

What should I expect while my child is on ECMO?

Your child will be cared for by an expert multidisciplinary team. An ECMO specialist and intensive care nurse will always be at the bedside of your child to provide care. The healthcare team will check your child's blood, take x-rays and perform other tests.

Your child will need medicine for pain and sedation, and they may be more sleepy than usual. Most children supported with ECMO have a feeding tube for nutrition. They may also need physical therapy.



What are the risks of ECMO?

ECMO can be life-saving, but there are potential risks and complications.

- Heparin, a medicine that keeps blood from clotting, can cause bleeding at the surgical or cannula site and within the body. Healthcare providers will use head ultrasounds to make sure your child is not bleeding around the brain.
- Clots can form in the ECMO circuit, so an ECMO specialist looks at the circuit every hour. If the specialist sees a clot, they monitor it and may adjust your child's medicine. The specialist may change the circuit if there are many clots. Your child takes heparin to prevent clots from forming.
- Air bubbles can form in the ECMO circuit. Your child may need to stop using ECMO support for a short time so air does not enter your child's body. A specialist will look for air bubbles in the ECMO circuit every hour.
- The ECMO circuit may have a mechanical problem. If this happens, the ECMO specialist may change the circuit.

- Your child may develop an infection in a cannula. A specialist will do tests daily to find any infections and treat them if needed.
- The cannulas can move or become kinked, which causes circuit flow problems. Blood vessels can also be injured through ECMO and may not work anymore. When other blood vessels take over, your child is at a higher risk for brain injury.

Can I visit my child during ECMO?

You and other family members can visit your child while they are supported with ECMO. However, be aware that the ECMO equipment will take a lot of space in your child's room. Ask your child's healthcare providers how you can help care for your child.

How will I know my child is getting better?

The ECMO pump does most of the work for your child's lungs (and sometimes the heart). When your child's heart and lungs are ready to do more work, healthcare providers will decrease ECMO support.

