

# Pediatric Veno-Venous Extra Corporeal Membrane Oxygenation (VV ECMO)

Your child is on VV ECMO. ECMO stands for: Extra Corporeal Membrane Oxygenation.

## What do these terms mean?

**Extra Corporeal:** outside the body

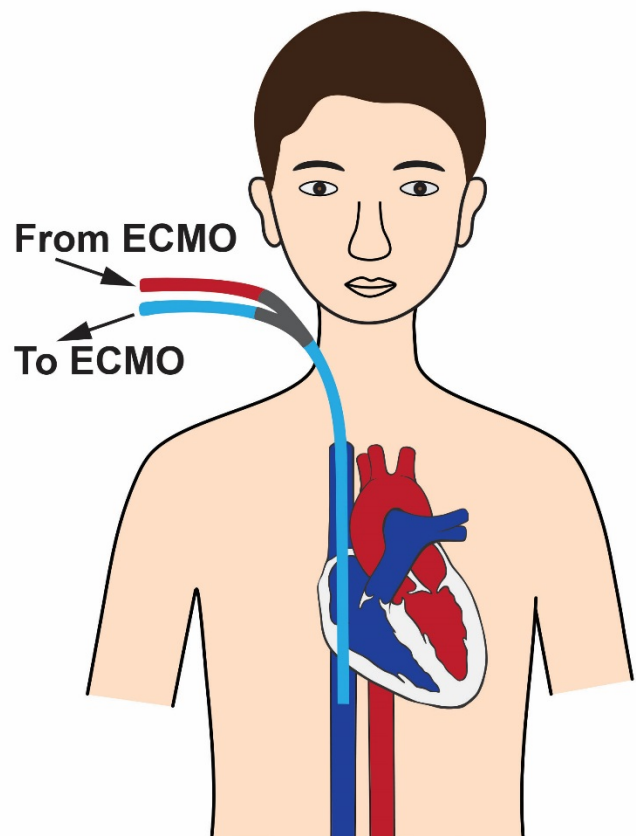
**Membrane:** artificial lung

**Oxygenation:** adding oxygen to the blood

## What Is VV ECMO?

VV ECMO is a support system for lungs that cannot breathe on their own.

- Your child will have one ECMO tube (cannula) that has two sides. This cannula is a large tube that the doctor will place like an IV into a vein in the neck and enters the heart.
- Blood flows from this vein, through one side of the cannula into the ECMO machine.
- The machine adds oxygen to the blood and removes carbon dioxide. The machine then returns the blood through the other side of the cannula into the same vein.



Adapted from: Heart Circulation Diagram  
([https://upload.wikimedia.org/wikipedia/commons/7/73/Heart\\_circulation\\_diagram.svg](https://upload.wikimedia.org/wikipedia/commons/7/73/Heart_circulation_diagram.svg)) by Patrick J. Lynch, medical illustrator, C. Carl Jaffe, MD, cardiologist [CC BY 2.5 (<https://creativecommons.org/licenses/by/2.5>)], via Wikimedia Commons

- The doctor may order that the respiratory therapist turn down the ventilator (breathing machine) to allow the lungs to rest. ECMO does not heal the lungs, but allows time for the lungs to get better.

### **What should I expect with ECMO?**

An ECMO specialist will be a member of your child's care team. The specialist will be at your child's bedside to monitor and manage the ECMO machine. They are available anytime you need them to answer questions or concerns with ECMO.

Below are some things to expect while your child is on ECMO:

- Your child may be on medicine to make them sleep or allow them to wake up, depending on their treatment plan.
- Your child will have a daily chest x-ray.
- We will take blood for lab work from an IV, so there are no pokes.
- We will give your child medications for pain control, sedation (sleep), and blood thinning for the ECMO machine.
- Your child may bleed at the ECMO cannula site, any IV site, or wound. This is normal.
- Your child may appear swollen at times. Eventually this should go away.
- We may need to give blood transfusions, these are not uncommon.
- Your child's time on ECMO will vary. Every patient is different. Despite our best efforts, some children will not recover.



## **What are the risks of ECMO?**

The doctor will discuss risks with you. Some of the more common risks are bleeding, infection, and potential equipment failure. We monitor for these very closely.

## **What can I do to help my child?**

This is the really hard part. There may be no changes in your child's condition for days or possibly weeks. We know that this is a very stressful time for you. The following steps may help you cope with having a child on ECMO:

- Get rest, take breaks away from the Intensive Care Unit and hospital, and eat regularly. You will need to make decisions about your child's medical care, which you can do best if you are rested and alert.
- Ask questions. We will answer the best we can or find you the best person to speak with.
- You can bring drawings from siblings or recordings or videos of them for your child.
- Interact with your child. You can read to them, play music, allow them to listen to or watch TV, or just talk to them.
- Ask their nurse about other things you can do or bring for them.

## **How will I know when my child no longer needs ECMO?**

The medical team will decide when your child can be taken off ECMO. When we feel that your child is showing signs of improvement, we will discuss a "trial off" ECMO. This means that we will stop ECMO support for a short time to see if your child's lungs can work without ECMO support. They will still have the support of the breathing machine. If they no longer need ECMO, we will remove the cannula. Do not be discouraged if your child does not do well with their trial off. Most patients need more than one trial.

## What is the mailing address for the ECMO Program?

F5850 UH South  
1500 E. Medical Center  
Drive Ann Arbor, MI  
48109-5282

[www.med.umich.edu/ecmo](http://www.med.umich.edu/ecmo)



Disclaimer: This document contains information and/or instructional materials developed by Michigan Medicine for the typical patient with your condition. It may include links to online content that was not created by Michigan Medicine and for which Michigan Medicine does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.

Patient Education by [Michigan Medicine](#) is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](#). Last Revised 08/2018