How is ECMO stopped?

When we think the patient has recovered enough heart and lung function to support their body, we do a 'trial' test. We turn down the support by the machine and allow the patient's heart and lungs to do more of the work. We might do several trials over several days before deciding to stop the ECMO therapy.

The ECMO machine and tubes are removed in either the Intensive Care Unit (ICU) or the Operating Room. Depending on where the tubes are placed, arteries or veins might need surgery to repair any damage.

What if the patient needs a transplant?

If doctors decide the patient might be a candidate for a heart or lung transplant, they will talk with the transplant team at another hospital that does transplants. They will discuss many medical issues related to the patient's condition to determine if the patient is a good candidate for a transplant. Unfortunately, a transplant is not always the best option and not all patients are good candidates.

Contact Us

We understand that this is a very stressful time for you and your family. We are here to help you however we can.

The ICU team is here to help you through this difficult time. Please let us know if you have any questions or concerns.

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This information does not replace the advice given to you by your healthcare provider.

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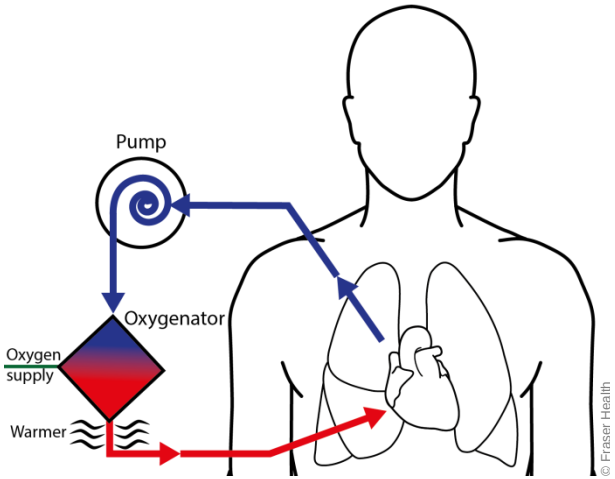
For more copies: patienteduc.fraserhealth.ca

Family Guide to ECMO Therapy

Extracorporeal Membrane Oxygenation



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What is ECMO therapy?

ECMO (say 'eck-mo') stands for **E**xtra**C**orporeal **M**embrane **O**xygenation. 'Extracorporeal' means outside the body. The machine puts oxygen into the blood, and then circulates it back through the body. This therapy is used when the heart and/or lungs are not working well enough to support the body on their own.

We use this therapy to treat patients with:

- lung (respiratory) failure caused by trauma (car accident, gunshot wound, etc.), pneumonia, or other infection
- heart failure after a heart attack or surgery, or before a person gets a device implanted into their heart or a heart transplant

This is a temporary treatment that allows the body organs, especially the heart and lungs, to rest and heal. It does not cure the problem that caused the failure.

Are there other options?

If we feel the patient needs this therapy, it means they are so sick that other measures or treatment options have been tried but have not worked.

How does it work?

The ECMO machine is very similar to the heart-lung bypass machine used during open heart surgery.

The machine has two parts: a pump that works like the heart, and an oxygenator that works like an artificial lung.

Tubes are placed in large arteries and veins in the neck, the groin, or both. Blood is pumped from the body into the machine. The machine removes carbon dioxide from the blood and adds oxygen. The blood is warmed to normal body temperature and then pumped back into the body through another tube. To keep the blood from clotting, we give a blood thinner.

A person specially trained to use the ECMO machine (a clinical perfusionist) regularly monitors it.

What are the risks or complications?

As with any medical procedure, there is a chance of a complication.

At this point, the benefits of the ECMO machine outweigh the risks.

Possible complications include: bleeding, infection, blood clots, damage to veins or arteries where the tubes are placed, damage to limbs from poor blood flow, brain damage, and stroke.

How long is this therapy needed?

Many patients are on the ECMO machine for several days to several weeks at a time, depending on why it is needed. The care team reviews the patient's progress each day. If the patient improves, the care team makes a plan to stop ECMO and remove the tubes.

ECMO works well most of the time, but sometimes a patient does not respond to the treatment. If ECMO is not effective and there are no further treatment options available, a family conference will be needed to discuss end-of-life care.

What happens to the patient during this therapy?

We give medications to help the patient rest and sleep. You might hear us use the term 'sedation' or 'chemical paralysis'. We use this to put the patient in a restful state to help the body heal. We might reduce the medication so the patient can wake up enough for us to check brain function.

Since the patient cannot eat, we give nutrients either by intravenous or, if safe to do so, through a tube placed through the nose or mouth into the stomach.

The patient is closely monitored at all times. Tests such as blood tests are often to see how the patient is responding.

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