

# When your child needs to be put on a life support machine (ECMO)

East Midlands Congenital Heart Centre

Last reviewed: February 2026

Information for Parents & Carers

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## Introduction

This leaflet is about ECMO and is for you to keep. It does not replace any discussions you have with the doctors and nurses looking after your child. Please ask questions at any time and the staff from your current hospital or the East Midlands Congenital Heart Centre (EMCHC) at Leicester Royal Infirmary will be happy to answer or repeat any of the information.

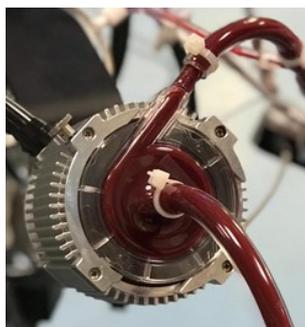
## What is ECMO?

ECMO stands for Extra-Corporeal Membrane Oxygenation. It uses an artificial lung (the membrane) to put oxygen into the blood outside the body (extracorporeal). It takes over the work of the heart and lungs. It gives these vital organs time to rest and lets the underlying illness or injury recover. The ECMO machine is very similar to the heart-lung machines used to keep patients alive during open heart surgery.

### Levitronix CentriMag ECMO circuit



Pump head



### Oxygenator



Health information and support is available at [www.nhs.uk](http://www.nhs.uk)  
or call 111 for non-emergency medical advice

Visit [www.uhleicester.nhs.uk](http://www.uhleicester.nhs.uk) for maps and information about visiting Leicester's Hospitals.  
To give feedback about this information sheet, contact [uhl-tr.informationforpatientsmailbox@nhs.net](mailto:uhl-tr.informationforpatientsmailbox@nhs.net)

## Why ECMO?

ECMO for infants and children has been used at Leicester's hospitals since 1989 ([https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(96\)04100-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(96)04100-1/fulltext)). We are one of the world's busiest ECMO centres. We are the only centre in the UK that offers ECMO for adults, infants and children. ECMO is used as a treatment for infants and children who are critically ill due to life threatening lung disease with a reversible cause. It is only used when other intensive care treatments are not working.

There are many conditions that may benefit from the use of ECMO. The 4 most common reasons are:

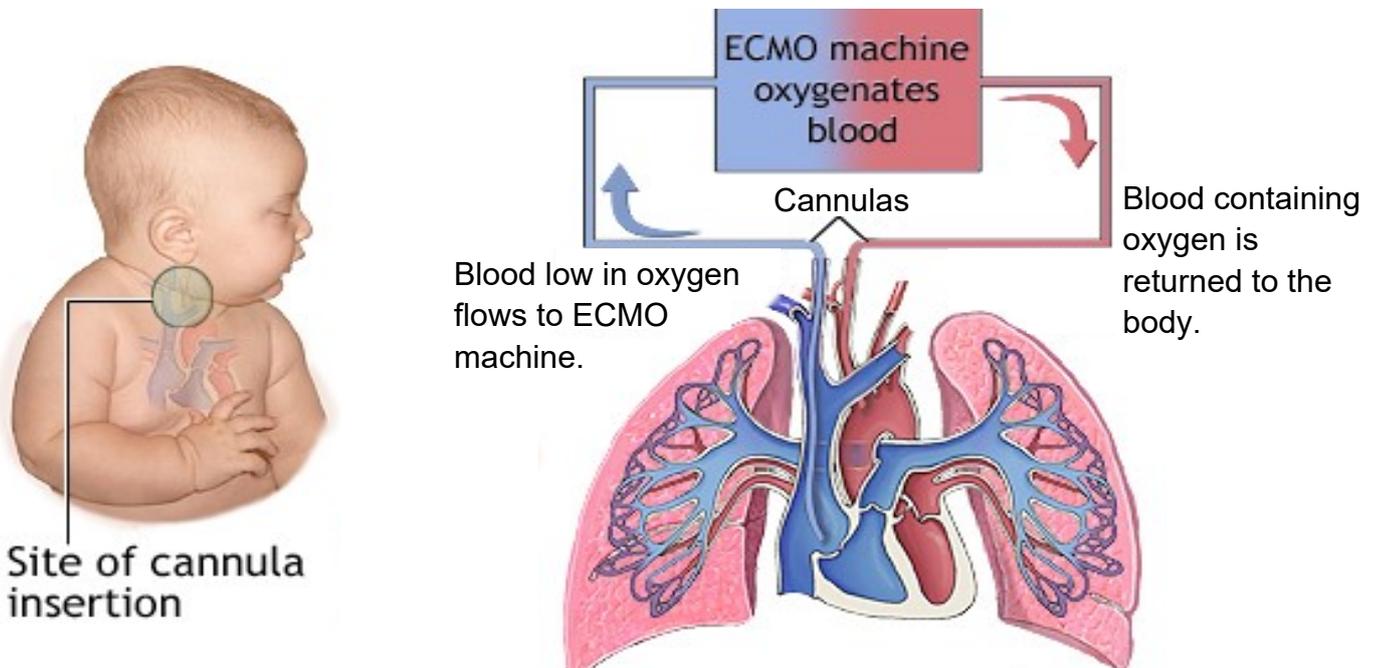
- **Meconium aspiration syndrome:** where babies have taken meconium into their lungs around the time of their birth. Meconium is a dark green tar like substance that is the baby's first poo.
- **Sepsis:** when newborn babies / children have a severe infection in their blood.
- **Persistent pulmonary hypertension of the newborn (PPHN):** where the lung vessels in newborn babies are not open wide enough. Oxygen and the flow of blood into the lungs is severely reduced, meaning the body does not have enough oxygen.
- **Congenital diaphragmatic hernia:** a birth defect which happens when the diaphragm muscle does not close before the baby is born. The diaphragm muscle is the muscle that separates the chest from the abdomen. This causes the contents of the abdomen such as stomach, bowel and liver to move into the chest through this hole and the lungs do not grow properly.

We believe ECMO can improve your child's chance of survival a lot. The average length of stay on ECMO is around 8 days, but this can be longer or shorter.

Once your child has been accepted by the ECMO team they will need to be transported to the Cardiac Paediatric Intensive Care Unit (cPICU) which is in EMCHC at Leicester Royal Infirmary. They will be moved by our own ECMO transport team. The ECMO transport team specialises in moving very ill patients from other hospitals to ECMO centres. This may mean travelling by ambulance, helicopter or fixed wing aircraft. The type of transport depends on how stable your child is and how far they need to travel. **You should not try to follow the ambulance as this can be very dangerous.**

## What will happen next?

For your child to have ECMO they will need a small operation on the intensive care unit. The ECMO doctor will need to insert 1 or 2 tubes called cannulas into your child's neck and maybe their groin. These let the blood be diverted into the ECMO machine where oxygen is added to the blood and carbon dioxide is removed. It is then pumped back into the body through the tubes. Whilst having ECMO support, children often stay on the ventilator (breathing machine) at gentle settings to protect the lungs.



Source: MedlinePlus, National Library of Medicine <https://medlineplus.gov/ency/imagepages/19844.htm>

## What will happen when the transport team arrives?

- The team looking after your child will handover all the important information about them to the ECMO doctor and nurse.
- The ECMO team will then carefully assess your child to decide the best and safest way to transport them to Leicester Royal Infirmary. This could be either on a normal ventilator or by mobile ECMO.
- The doctor will want to talk to you about ECMO. They will explain both the risks and benefits. They will ask permission from the child's legal guardian for the ECMO treatment.

## What is the main risk linked with ECMO?

The main risk during ECMO treatment is bleeding. This is because we must give a blood thinning drug called heparin. This stops the blood clotting in the ECMO machine. Although it is rare, the most serious risk is bleeding in the brain which can be life threatening. We monitor your child carefully with head scans so that we can find any problems early and reduce this risk.



## Can I stay with my child?

We can organise accommodation near to cPICU while your child is at Leicester Royal Infirmary. This room will be free of charge. If you need help with arrangements getting to Leicester Royal Infirmary, please ask the staff at your current hospital. They can talk to the Duty ECMO Co-ordinator.

Parents or guardians of children in cPICU at Leicester Royal Infirmary can visit at any time. However, the unit will be closed to all visitors each morning between 8am to 8.30am for the business round. It will also be closed when there are any procedures being carried out or when children or babies are first admitted onto the unit. We aim to keep you fully informed at all times of any changes to your child's condition even when you are not visiting.

## Your diary

With your consent, nursing staff will give you and your child a diary. This is so that you can record what happens whilst they are a patient with us. Nursing staff and other members of the team will write in this diary each day. They will add photographs with your permission. You can also write in the diary whenever you wish.

## Other services

- The children's cardiac specialist nurses and play specialists provide emotional and psychological support for children and parents. They also provide development support for children.
- Midwifery services are available.
- A playroom is available on Cardiac Ward 1 at Leicester Royal Infirmary for brothers and sisters.

## Contact details

Contact details for the East Midlands Congenital Heart Centre (EMCHC):

Duty ECMO Co-ordinator (through switchboard): **0300 303 1573**

Cardiac Paediatric Intensive Care Unit (cPICU): **0116 258 3288 / 0116 258 3354**

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔  
على هذه المعلومات بلغةٍ أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل

જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

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Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

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