

Extracorporeal Life Support

ECLS stands for Extracorporeal Life Support. This is a unique and extraordinary form of support in critically ill patients that is not routinely available.

What is ECLS?

Another term you will sometimes hear in place of ECLS is “ECMO” or Extracorporeal Membrane Oxygenation. In ECMO, a machine is used to take over the work of the heart and/or lungs. It is used in special cases where standard medical care will not work.

Who Needs ECLS?

Patients with severe heart and/or lung failure who are not likely to survive without the use of this machine.

How Does ECLS Work?

- Blood is sent from the patient’s blood stream by large tubes to a machine
- The machine stands at the bedside
- The machine pumps the blood back to the body
- It may add oxygen and remove carbon dioxide
- In this way the machine acts as an artificial heart and/or lung

What Are the Goals and the Success?

- The machine supports the body by performing the work of the heart and/or lungs
- This gives the heart and lungs a chance to recover
- The machine does not heal the heart and lungs, the illness itself, must be reversible for a chance of success

For all patients treated with ECLS, approximately 50% will survive. However, the risk of dying without ECLS is significantly greater than the risk of dying with it.

What Are the Risks?

There are risks and complications associated with ECLS. The following is not a complete list of risks, but include:

- Bleeding
- Need for blood product transfusions
- Blood clot formation
- Air bubbles
- Machine failure
- Infections
- Limb loss
- Multi-organ failure
- Brain injury

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Who Will Be Managing the Patient?

Patients on ECLS need nonstop, around the clock monitoring and care in the intensive care unit (ICU). A specialized team with the appropriate knowledge and resources will help manage the patient's complex conditions. The team is made up of:

- Surgeons
- Doctors
- ECLS specialists
- ICU nurses
- Perfusionists
- Pharmacists
- Nutritionists
- Physical therapists

This team will do their very best to keep you updated about your loved one's progress.

When to Stop ECLS?

ECLS should be stopped when the heart and/or lungs recover. This can take days to weeks. In select patients ECLS may be a bridge to other therapies such as LVADs (Left Ventricular Assist Devices) or heart/lung transplantation. Some patients will not improve with ECLS or may suffer progression of disease and complications of ECLS. In such circumstances all therapies will have been exhausted and ECLS will be withdrawn.

Can You Tell Me More About the Process?

In many cases ECLS is established emergently without the chance for in-depth discussion. If that is the case, our team will speak with you at the first available opportunity. Members of the ECLS team will round and meet frequently to review care and make decisions on treatments. At all times, you will be kept involved and informed to the best of our ability, about your loved one's progress. You will be a part of discussions related to outcomes as well. Palliative care and chaplain services are available for family support.

If a patient is making progress on ECLS, we will continue with the support. There is a chance that despite our best efforts, your loved one will not improve. If the ECLS team determines that despite all treatments, your loved one is not getting better, or is getting worse, they will decide to discontinue ECLS.

Where can I get more information?

The ECLS team at Nebraska Medicine is always available to answer your questions. We will do our best to address your concerns and we encourage you to approach us at any time.