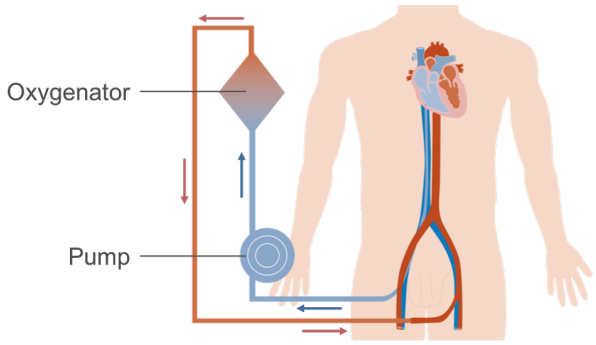
Chest compressions

CONSIDERING MECHANICAL CIRCULATORY SUPPORT

Mechanical circulatory support devices may help support patients as a bridge to recovery or additional interventions, like cardiac catheterization or transplant. There are a variety of devices available, including left- and / or right-ventricular assist devices and extracorporeal membranous oxygenation (ECMO). Veno-arterial support bypassing the lungs must be oxygenated (extracorporeal oxygenation).



Extracorporeal membrane oxygenation devices

These devices have several important considerations, and are resource-intensive, so they should be used selectively and in concordance with institutional guidelines. Some common considerations are listed below.

ECMO

Indications

1. Cardiogenic shock
- Severe heart failure (e.g., myocardial infarction, myocarditis, peripartum cardiomyopathy, hypothermia)
- Refractory ventricular tachicardia / ventricular fibrillation
- Toxicologic ingestion

2. Cardiopulmonary failure
- Massive pulmonary embolus

3. Respiratory failure—reversible condition (e.g., influenza, etc.) or as bridge to transplant in patient on list
- Hypoxic respiratory failure
- Hypercarbic respiratory failure
- Massive air leak

Relative contraindications

1. Advanced age
2. Trauma
3. Septic shock
4. Advanced dementia / brain damage / severe prior stroke
5. End-stage renal disease on dialysis
6. Bleeding diathesis
7. Recent or expanding CNS hemorrhage
8. Terminal malignancy
9. Decompensated cirrhosis
10. Vasculature technically inaccessible
11. Mechanical ventilatin > seven days
12. Aortic insufficiency