ECMO

REFERENCE

WHAT IT IS

- Extracorporeal membrane oxygenation: blood is drained from the body, oxygenated, and cleared of CO2 by an artificial membrane lung, then returned
- VA ECMO returns blood to an artery and supports heart and lungs; VV returns it to a vein and supports lungs only
- It does not fix the underlying problem — it buys time for the heart or lungs to recover, or for a definitive procedure

WHEN IT'S USED

- Refractory cardiogenic shock or cardiac arrest at ECMO-capable centers (ECPR in selected arrests)
- Severe respiratory failure failing conventional ventilation
- The EMS role is early recognition, excellent standard resuscitation, and early notification / transport toward an ECMO-capable facility

KEY COMPONENTS

- Large-bore drainage and return cannulas, a pump, the membrane oxygenator, and a heat exchanger
- Patients are anticoagulated — bleeding, including at cannula sites, is a constant risk
- Circuit failure, air, or clot can deteriorate the patient in seconds

TRANSPORT CONSIDERATIONS

- ECMO transports are run by specialized retrieval teams — know your role and work around the circuit, never through it
- Never disconnect, clamp, or move cannulas; guard them during every patient move
- Watch perfusion, circuit pressures/alarms, and cannula sites; report changes to the ECMO team immediately

Take Home Message:

ECMO is a hospital life-support circuit, not a field treatment — your job is great resuscitation, early notification, and protecting the circuit in transport.