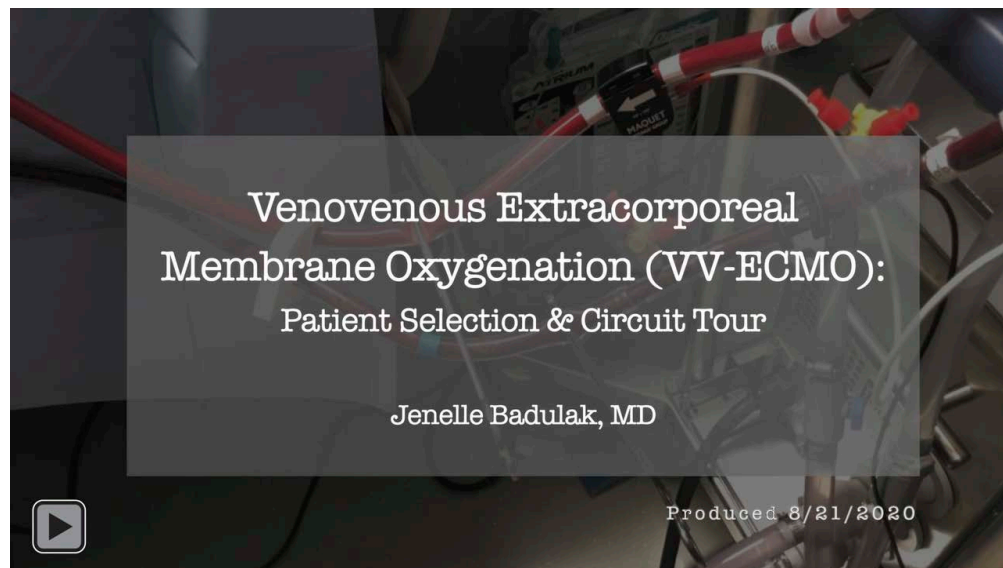# Venovenous Extracorporeal Membrane Oxygenation 🎥

Patient Selection and Circuit Tour

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This video serves as a resource for novice extracorporeal membrane oxygenation (ECMO) providers to understand the fundamentals of how ECMO works, venovenous (VV) ECMO patient selection, and the components of the VV ECMO circuit. ECMO is used for severe, acute, and reversible cardiopulmonary failure refractory to conventional support. A centrifugal pump drains blood from the patient, pushes it through a gas exchange device for oxygenation and CO_2 removal using sweep gas, and then returns blood back to the patient. The circuit includes locations for pressure measurement, blood gas sampling, flow

Video 1. Instructional video for venovenous extracorporeal membrane oxygenation (ECMO) including an introduction to ECMO, patient selection, and components of the circuit. Image(s) used with permission from CollectedMed, LLC.

monitoring, and bubble detection. Venoarterial ECMO provides cardiac and pulmonary support by draining venous blood and returning blood to the arterial system. VV ECMO provides pulmonary support by draining venous blood and returning blood to the venous system. The most common diseases that may require VV ECMO include acute respiratory distress syndrome, severe asthma exacerbations, or air leak syndromes. Indications for ECMO include a severely low oxygen pressure/ tension to fraction of inspired oxygen ratio (P:F), severe hypercarbia with acidemia, or unsafe ventilatory pressures. Some contraindications include irreversible pulmonary disease in patients who are not lung transplant candidates, irreversible extrapulmonary organ failure, chronic life-limiting diseases, and prolonged mechanical ventilation.

Author disclosures are available with the text of this article at www.atsjournals.org.

RECOMMENDED READING

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