



ESTS SCHOOL

**ESTS
SCHOOL OF
THORACIC
SURGERY**

BASIC ADULT ECMO COURSE AND SIMULATION TRAINING FOR THORACIC SURGEONS

12-13 December 2024

University Hospital Zurich · Switzerland



Join us for an immersive ESTS Basic Adult ECMO Course and Simulation Training tailored for thoracic surgeons on December 12th and 13th, 2024, in Zurich.

Delve into the intricacies of ECMO technology and its historical evolution, grasp essential circuit components, and master cannulation techniques for both VV and VA ECMO configurations. Engage in hands-on sessions, covering a spectrum of skills from percutaneous implantation to troubleshooting, alongside insightful discussions on patient management strategies.

This unique opportunity promises to enhance your proficiency in ECMO implementation and optimize patient care.

Reserve your spot soon for an enriching educational experience!

COURSE DIRECTORS



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DAY 1: THURSDAY 12 DECEMBER 2024

10:30-10:45 Welcome

SESSION I: INTRODUCTION

10:45-11:05 ECMO overview & History of ECMO and ELSO (different modes of ECMO support, milestones in the development of ECMO)

SESSION II: CIRCUIT COMPONENTS

11:05-11:25 Circuit Overview, Cannulas & Tubing, Pump, Membrane Lung and Blender, Pressure Monitoring, Other circuit components

SESSION III: CANNULATION & CONFIGURATION

11:25-11:45 Cannulation, VV ECMO configurations, VA ECMO configurations, Cannulation complications

11:45-12:45 *Lunch break*

SESSION IV: PHYSIOLOGY

12:45-13:05 Oxygen delivery & uptake, gas transfer in the membrane lung, hemodynamic monitoring on VV & VA ECMO, drainage insufficiency, return obstruction

SESSION VIIIa: COMPLICATIONS (SURGICAL-RELATED)

13:05-13:35 Complications Overview, Neurological Complications, Bleeding, thrombosis, hemolysis, limb ischemia, cardiac arrest during ECMO, HIT

SESSION VIIIb: COMPLICATIONS (CIRCUIT-RELATED)

13:35-14:05 Blood cell trauma, membrane lung dysfunction, air embolism, pump failure, circuit disruption, accidental decannulation, coming off ECMO emergently

14:05-14:35 *Coffee break*

14:35-15:35 **HANDS-ONS SESSION**

Group 1 Training on mannequin (percutaneous implantation): overview material, cannulation techniques, ideally ultrasound-guided

Group 2 Priming and troubleshooting with the perfusion simulator: priming the circuit, simulation of gas supply failure, Harlequin syndrome, membrane oxygenator clotting

15:35-15:50 *Coffee Break*

15:50-16:50 **HANDS-ONS SESSION**

Group 1 Priming and troubleshooting with the perfusion simulator: priming the circuit, simulation of gas supply failure, Harlequin syndrome, membrane oxygenator clotting

Group 2 Training on mannequin (percutaneous implantation): overview material, cannulation techniques, ideally ultrasound-guided

16:50-17:00 *Break*

SESSION V: V-V ECMO

17:00-17:30 Respiratory failure

17:30-18:00 Patient selection for and initiation of V-VECMO

18:00-18:30 V-V ECMO maintenance, recirculation, mechanical ventilation, weaning of V-V ECMO

18:30-18:45 Discussion & recap



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DAY 2: FRIDAY 13 DECEMBER 2024

08:30-09:15 Welcome back & questions

SESSION VI: V-A ECMO

09:15 -09:40 **Cardiac failure & intraoperative use for ECMO**

09:45-10:10 **V-A ECMO for lung transplant & lung cancer**

10:15-10:45 **V-A ECMO maintenance and weaning**

10:45-11:15 *Coffee break*

HANDS-ONS SESSION

11:15- 12:15
Group 1 eCPR: theoretical and practical aspects: mechanical and medical resuscitation on ECMO, management of left ventricular distension

11:15- 11:45
Group 2 Proning on ECMO: practical aspects: practical exercise of proning an ECMO patient, simulation of gas supply failure or venous air entrainment

12:15- 12:45

Group 1 Proning on ECMO: practical aspects: practical exercise of proning an ECMO patient, simulation of gas supply failure or venous air entrainment

11:45- 12:45

Group 2 eCPR: theoretical and practical aspects: mechanical and medical resuscitation on ECMO, management of left ventricular distension

12:45-13:00 *Coffee break*

SESSION VII: PATIENT MANAGEMENT

13:00-13:40 **Sedation, Physiotherapy, Anticoagulation, Procedures, Renal Replacement Therapy, Hospital Transport**

13:40-14:00 Discussion & recap



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