

# 4th Adult ECMO Training Course Regensburg 2022

26 September – 30 September 2022

[www.ecmo-regensburg.de](http://www.ecmo-regensburg.de)

SPITZE IN DER MEDIZIN.  
MENSCHLICH IN DER BEGEGNUNG.



ECMO-Center University Hospital Regensburg

## 4th ECMO training course Regensburg

26.09. – 30.09. 2022

Lecture Theatre A2 (Entrance West)

Dear Colleagues,

Extracorporeal life support (ECLS) continues to rapidly expand worldwide and has become an accepted therapeutic option for critically ill patients. Modern ECMO can save lives in severe circulatory and respiratory failure in all age groups. Many consider this new technology as the most important innovation in recent intensive care medicine. The SARS-CoV-2 Pandemic has even accelerated this development, but also raised new questions.

ECMO technique is complex, and patients, who need ECMO, are critically ill. To successfully use ECMO in clinical practice, training and experience are indispensable. Both the knowledge of physiology and efficiency of ECMO, but also of potential complications is needed. Therefore, since 2018 we offer national and international training courses on ECMO in Regensburg. These courses have been endorsed by ELSO and received support by the German medical societies DIVI, DGfK and DGTHG.

The course will include both lectures in the morning and simulation, hands-on and discussions in the afternoon. It shall be an introduction into ECMO therapy in Critical Care today, embedded within state-of-the-art conventional treatment, which will cover both respiratory and circulatory support for adult patients. The main target audience are physicians and perfusionists involved with ECMO; for nurses a separate course is offered. A printed and electronic script in combination with the ELSO Red Book will supplement the course and allow ongoing training.

Please note that the pandemic is not ended and may take an unforeseeable route. We can only accept fully vaccinated participants and may have to be forced to continue distancing and wearing face masks. Please check current travel guidelines regularly. In case legal restrictions should not allow to deliver the course, the fees will be refunded.

Regensburg had hosted the 4th international congress of the EuroELSO in 2015. Historically, it was an important mediaeval trading center and served as a bridge from south to north and west to east, and you will be able to enjoy the beauty of our Old City in the evenings.

We are looking forward to cordially welcome you in Regensburg,

Thomas Müller  
Dirk Lunz

Matthias Lubnow  
Christoph Benk

Alois Philipp  
Georg Trummer

ECMO Centers Regensburg and Freiburg



**Monday, 26.09.**

8:00 – 8:30		<b>Entrance West</b>	
		<b>Registration</b>	
8:30 – 8:45	<i>Lubnow M</i> <i>Müller T</i>	<b>Lecture Theatre A2</b>	
		Welcome and introduction	
8:45 – 9:05	<i>Müller T</i>	Basics 1: history of ECMO and ELSO	
9:10 – 9:35	<i>Philipp A</i>	Basics 2: technique of ECMO - oxygenator, pump, cannula	
9:40 – 10:05	<i>Philipp A</i>	Basics 3: introduction ECMO Center Regensburg	
10:05 – 10:20		Questions and discussion	
10:20 – 10:50	<b>Coffee Break</b>		
10:50 – 11:15	<i>Lubnow M</i>	Conventional therapy of ARDS	
11:20 – 11:45	<i>Müller T</i>	VV-ECMO in severe ARDS: indications, contra-indications, initiation	
11:50 – 12:15	<i>Müller T</i>	Mechanical ventilation on VV-ECMO	
12:20 – 12:40	<i>Malfertheiner M</i>	Anticoagulation for ECMO: standards and alternatives	
12:40 – 12:50		Questions and discussion	
12:50 – 13:00	<i>Malfertheiner M</i> <i>Seiler H</i>	Introduction Simulation A	
13:00 – 14:00	<b>Lunch Break</b>		
14:00 – 16:00	<b>Kursraum 1</b>	<b>Kursraum 2</b>	<b>Kursraum 3</b>
	<b>Group 1 Getinge</b> Priming, Hands-on, Trouble Shooting	<b>Group 2 Fresenius</b> Priming, Hands-on, Trouble Shooting	<b>Group 3 Simulation A</b> Case scenarios and Trouble- Shooting <i>Malfertheiner M</i> <i>Seiler H, Heinze J</i>
16:00 – 16:30	<b>Coffee Break</b>		
16:30 – 18:30	<b>Kursraum 1</b>	<b>Kursraum 2</b>	<b>Kursraum 3</b>
	<b>Group 2 Getinge</b> Priming, Hands-on, Trouble Shooting	<b>Group 3 Fresenius</b> Priming, Hands-on, Trouble Shooting	<b>Group 1 Simulation A</b> Case scenarios and Trouble- Shooting <i>Malfertheiner M</i> <i>Seiler H, Heinze J</i>
20:00	<b>Welcome Dinner in Town</b>		

**Tuesday, 27.09.**

8:30 – 8:55	<i>Philipp A</i>	<b>Lecture Theatre A2</b>	
9:00 – 9:25	<i>Müller T</i>	Hypoxemia on ECMO: what can be done? /Threshold for transfusion	
9:30 – 9:55	<i>Malfertheiner M</i>	ECCO <sub>2</sub> R in clinical practice 2022	
10:00 – 10:25	<i>Lubnow M</i>	Weaning VV-ECMO, weaning failure and further options	
10:30 – 11:00	<b>Coffee Break</b>		
11:00 – 13:00	<b>Kursraum 1</b>	<b>Kursraum 2</b>	<b>Kursraum 3</b>
	<b>Group 3 Getinge</b> Priming, Hands-on, Trouble Shooting	<b>Group 1 Fresenius</b> Priming, Hands-on, Trouble Shooting	<b>Group 2 Simulation A</b> Case scenarios and Trouble- Shooting <i>Malfertheiner M</i> <i>Seiler H, Heinze J</i>
13:00 – 14:00	<b>Lunch Break</b>		
14:00 – 16:00	<b>Kursraum 1</b>	<b>Kursraum 2</b>	<b>ICU 90</b>
	<b>Group 3</b> Cannulation: tips and tricks <i>Lubnow M</i>	<b>Group 2</b> Case discussions and pitfalls <i>Philipp A/ Lunz D</i>	<b>Group 1</b> Proning on ECMO: practical aspects <i>Kees M and Team 90</i> <i>Schettler F</i>
	<b>ICU 93/ ICU 97</b>	<b>Kursraum 2</b>	<b>ICU 90</b>
	<b>Group 1</b> Ward round <i>Wiest C, Lubnow M, Müller T,</i> <i>Lunz D</i>	<b>Group 3</b> Case discussions and pitfalls <i>Philipp A/ Lunz D</i>	<b>Group 2</b> Proning on ECMO: practical aspects <i>Kees M and Team 90</i> <i>Schettler F</i>
16:00 – 16:30	<b>Coffee Break</b>		
16:30 – 16:55		<b>Lecture Theatre A2</b>	
	<i>Müller T</i>	COVID-19 and VV-ECMO	
17:00 – 17:25	<i>Lubnow M</i>	COVID-19 and VA-ECMO	
17:30 – 18:00	<i>Wiest C</i>	Case discussions: tracheotomy, proning, mobilization...	<b>ICU 90</b>
			<b>Group 3</b> Proning on ECMO: practical aspects <i>Kees M and Team 90</i> <i>Schettler F</i>
Evening		no obligations	

**Wednesday, 28.09.**

8:30 – 8:55	<i>Fischer M</i>	<b>Lecture Theatre A2</b>	
9:00 – 9:25	<i>Camboni D</i>	Advanced cardiac life support 2022	
9:30 – 9:55	<i>Lubnow M</i>	Mechanical cardiac assist devices: overview	
10:00 – 10:25	<i>Donker D</i>	(Patho-) physiology of VA-ECMO	
10:30 – 11:00	<b>Coffee Break</b>		
11:00 – 11:25	<i>Sosalla S</i>	ECMO in the cath lab	
11:30 – 11:55	<i>Donker D</i>	Unloading of the left ventricle: when and how?	
12:00 – 12:25	<i>Staudacher D</i>	Impella: indications and limits	
12:25 – 12:45		Questions and discussion	
12:45 – 13:00	<i>Broomé M</i>	Introduction Simulation B	
13:00 – 14:00	<b>Lunch Break</b>		
14:00 – 16:00	<b>Kursraum 1</b>	<b>Lecture Theatre A2</b>	<b>Kursraum 2</b>
	<b>Group 2</b> Cannulation: tips and tricks <i>Lubnow M</i>	<b>Group 1</b> Case simulations on the computer <i>Broomé M</i>	<b>Group 3</b> Case discussions: tracheotomy, proning, mobilization... <i>Wiest C</i>
16:00 – 16:30	<b>Kursraum 2</b>	<b>Lecture Theatre A2</b>	<b>Kursraum 2</b>
	<b>Group 1</b> Case discussions and pitfalls <i>Philipp A/ Lunz D</i>	<b>Group 2</b> Case simulations on the computer <i>Broomé M</i>	<b>Group 3</b> Fundamentals – repetition and discussion <i>Müller T</i>
16:30 – 18:30	<b>Kursraum 1</b>	<b>Lecture Theatre A2</b>	<b>Kursraum 3</b>
	<b>Group 1 Abiomed</b> Impella: technique, hands-on, trouble shooting	<b>Group 3</b> Case simulations on the computer <i>Broomé M</i>	<b>Group 2</b> E-CPR: Theory and practice <i>Lunz D, Philipp A, Trummer G, Benk C, Brixius S</i>
		<b>ICU 93/ ICU 97</b>	
		<b>Group 3</b> Ward round <i>Wiest C, Lubnow M, Müller T, Lunz D</i>	
from 19:00	<b>Questions, discussions, cases, Bavarian beer...and food: Hubertushöhe</b> <i>Lubnow M, Müller T</i>		

**Thursday, 29.09.**

		<b>Lecture Theatre A2</b>	
8:30 – 8:55	<i>Lubnow M</i>	Patient management on VA-ECMO: monitoring, ventilation, dialysis	
9:00 – 9:25	<i>Balik M</i>	ECHO and ECMO	
9:30 – 10:00	<i>Lunz D</i>	E-CPR in IHCA and OHCA	
10:05 – 10:30	<i>Foltan M</i>	Maintenance of oxygenator and pump, indications for exchange	
10:35 – 11:05	<b>Coffee Break</b>		
11:05 – 11:30	<i>Trummer G</i>	Post resuscitation treatment	
11:35 – 12:05	<i>Müller T</i>	ECMO in septic shock and massive pulmonary embolism	
12:10 – 12:35	<i>Balik M</i>	Weaning from VA-ECMO, weaning-failure and further options	
12:40 – 13:00		Questions and discussion	
13:00 – 14:00	<b>Lunch Break</b>		
14:00 – 16:00	<b>Kursraum 1</b>	<b>Kursraum 2</b>	<b>Kursraum 3</b>
	<b>Group 2 Abiomed</b> Impella: technique, hands-on, trouble shooting	<b>Group 1</b> Cannulation: tips and tricks <i>Lubnow M</i>	<b>Group 3</b> E-CPR: Theory and practice <i>Lunz D, Philipp A, Trummer G, Benk C, Brixius S</i>
	<b>Kursraum 2</b>		
		<b>Group 1</b> Fundamentals – repetition and discussion <i>Müller T</i>	
16:00 – 16:30	<b>Coffee Break</b>		
16:30 – 18:00	<b>Kursraum 1</b>	<b>Kursraum 2</b>	<b>Kursraum 3</b>
	<b>Group 3 Abiomed</b> Impella: technique, hands-on, trouble shooting	<b>Group 2</b> Fundamentals – repetition and discussion <i>Müller T</i>	<b>Group 1</b> E-CPR: Theory and practice <i>Lunz D, Philipp A, Trummer G, Benk C, Brixius S</i>
	<b>ICU 93/ICU 97</b>		
		<b>Group 2</b> Ward round <i>Wiest C, Lubnow M, Müller T, Lunz D</i>	
Evening	<b>Optional: guided tour Regensburg World Heritage</b>		

**Friday, 30.09.**

8:30 – 8:55	<i>Fisser C</i>	Complications 1: leg ischemia, thrombosis, HIT	Lecture Theatre A2
9:00 – 9:25	<i>Malfertheiner M</i>	Complications 2: bleeding and neurological problems	
9:30 – 9:50	<i>Fisser C</i>	Quality assessment of an ECMO center	
9:55 – 10:20	<i>Geise A</i>	Ethical challenges in ECMO therapy	
10:25 – 10:35		Questions and discussion	
10:35 – 11:00	<b>Coffee Break</b>		
11:00 – 11:25	<i>Müller T</i>	Neuro prognostication and diagnosis of brain death on ECMO	
11:30 – 11:55	<i>Lubnow M</i>	Hybrid ECMO: when, which, what problems?	
12:00 – 12:25	<i>Lunz D, Philipp A</i>	Transport on ECMO	
12:30 – 13:00	<i>Müller T</i>	What went wrong? case scenario and discussion	
13:00 – 14:00	<b>Lunch Break and group photo</b>		
14:00 – 14:30	Knowledge Assessment <i>Lubnow M, Lunz D, Philipp A, Müller Th.</i>		Lecture Theatre A2
14:30 – 15:00	Course Evaluation, final discussion <i>Lubnow M, Lunz D, Philipp A, Müller Th.</i>		Lecture Theatre A2
15:00	<b>Coffee Break and Fare Well</b>		

**Faculty:**

Prof. Dr. Martin Balík, Dept. of Anaesthesia and Intensive Care, 1st Medical Faculty, Charles University, Prague

Prof. Christoph Benk, Leitung Kardiotechnik, Universitäts-Herzzentrum Freiburg - Bad Krozingen

Dr. Sam Brixius, Universitätsklinikum Freiburg

Prof. Dr. Michael Broomé, ECMO ICU, Karolinska University Hospital, Stockholm, Sweden

Prof. Dr. Daniele Camboni, Klinik für Herzchirurgie, Universitätsklinikum Regensburg

Prof. Dr. D.W. (Dirk) Donker, Professor of Cardiovascular and Respiratory Physiology Cardiovascular & Respiratory Physiology (CRPH), TechMed Centre, Faculty of Science & Technology, University of Twente, Netherlands.

Prof. Dr. Marcus Fischer, Klinik für Innere Medizin II, Universitätsklinikum Regensburg

PD Dr. Christoph Fisser, Klinik für Innere Medizin II, Universitätsklinikum Regensburg

Maik Foltan, Leitung Kardiotechnik, Klinik für Herzchirurgie, Universitätsklinikum Regensburg

Dr. Arnim Thorsten Geise, Bereichsleitung Intensivmedizin, Klinikum Nürnberg Nord

Johannes Heinze, Kardiotechnik, Klinik für Herzchirurgie, Universitätsklinikum Regensburg

Elisabeth Hoigl, Respiratory Therapist, Universitätsklinikum Regensburg

Frank-Peter Fisser, Klinik für Anästhesiologie, Universitätsklinikum Regensburg

PD Dr. Martin Kees, Klinik für Anästhesiologie, Universitätsklinikum Regensburg

PD Dr. Matthias Lubnow, Klinik für Innere Medizin II, Universitätsklinikum Regensburg

PD Dr. Dirk Lunz, Klinik für Anästhesiologie, Universitätsklinikum Regensburg

PD Dr. Maximilian Malfentheiner, Klinik für Innere Medizin II, Universitätsklinikum Regensburg

Prof. Dr. Thomas Müller, Klinik für Innere Medizin II, Universitätsklinikum Regensburg

Alois Philipp, Universitätsklinikum Regensburg

Frank Schettler, Kardiotechnik, Klinik für Herzchirurgie, Universitätsklinikum Regensburg

Peter Schüller, Klinik für Anästhesiologie, Universitätsklinikum Regensburg

Hans Seiler, Kardiotechnik, Nürnberg

Prof. Dr. Samuel Sosalla, Klinik für Innere Medizin II, Universitätsklinikum Regensburg

PD Dr. Dawid Staudacher, Medizinische Klinik III, Albert-Ludwigs-Universität Freiburg

Prof. Dr. Georg Trummer, Universitäts-Herzzentrum Freiburg-Bad Krozingen

Dr. Clemens Wiest, Klinik für Innere Medizin II, Universitätsklinikum Regensburg