

LAMELLAR KERATOPLASTY & ARTIFICIAL ENDOTHELIAL DEVICE FOR ENDOTHELIAL DYSFUCTION

27-29 November 2025
Lugano (Switzerland)

ESASO Scientific director: Prof Mario Romano
Course Scientific coordinator: Prof Vito Romano

27 November 2025 **TISSUE SELECTION & PREPARATION**

08:45 – 09:00	Registration and welcoming	All
09:00 – 09:15	ESASO welcome	All
09:15 – 09:30	Screening of donors and quality control Explain the critical processes involved in screening corneal donors, focusing on tissue quality and safety protocols. Emphasize the role of quality control in ensuring optimal outcomes for transplant surgeries. Familiarize with the key criteria for donor tissue eligibility and understand how quality control directly impacts surgical success.	Alessandro Ruzza
09:30 – 09:50	DSAEK graft preparation Detail the step-by-step preparation of Descemet Stripping Automated Endothelial Keratoplasty (DSAEK) grafts, highlighting precision techniques for graft thickness and size. Be ready to observe and understand the technical nuances of DSAEK graft preparation and the importance of tissue handling for successful transplantation.	Alessandro Ruzza
09:50 – 10:10	DMEK graft preparation Discuss the delicate techniques required to prepare a Descemet Membrane Endothelial Keratoplasty (DMEK) graft, emphasizing the importance of minimizing tissue damage. Focus on the differences between DSAEK and DMEK graft preparation, particularly in terms of handling and positioning the thin graft.	Vito Romano

10:10 – 10:45	Bowman Layer transplantation Present the surgical steps involved in Bowman Layer Transplantation (BLT), highlighting its indications, benefits, and specific technical challenges. Pay attention to the indications for Bowman Layer Transplantation and how it can be used to treat advanced keratoconus.	Lamis Baydoun
10:45 – 11:15	Coffee Break	
11:15 – 11:45	Mushroom PK Guide the audience through the preparation steps of mushroom-shaped Penetrating Keratoplasty (PK), focusing on its advantages in preserving healthy corneal tissue. Prepare to discuss the indications for mushroom PK and understand how this technique differs from standard PK in terms of tissue preservation.	Antonello Moramarco
11:45 – 12:10	SALK: surgical preparation Explain the techniques involved in Superficial Anterior Lamellar Keratoplasty (SALK), focusing on its use for anterior stromal pathologies. Focus on how SALK differs from other keratoplasty techniques and the conditions for which it is indicated.	Cristina Bovone
12:10 – 12:30	CAIRS: surgical preparation Describe the surgical steps of Corneal Additive Interventive Reshaping Surgery (CAIRS), and how it is used to stabilize or reshape keratoconic corneas. Be ready to learn about the specific uses of CAIRS for keratoconus management and how it differs from other reshaping surgeries.	Soosan Jacob - Virtual
12:30 – 13:00	PDEK:	Soosan Jacob - Virtual
13:00 – 13:15	Eye bank versus Surgeon Prepared Compare the benefits and challenges of eye bank-prepared grafts versus surgeon-prepared grafts, focusing on logistics, quality, and outcomes. Prepare to discuss the pros and cons of using eye bank-prepared tissue compared to preparing grafts in the surgical setting.	Kunal Gadhvi
13:15 – 13:30	Q&A on the above topic	ALL
13:30 – 14:30	Lunch Break	
14:30 – 17:45	Wet Lab Session Ex vivo non-human DMEK models (onion / porcine) FemtoLaser cornea procedures (Zeimer)	ALL

Practice with EndoK / ring /
Supervise the wet lab session, focusing on hands-on practice with DMEK models, FemtoLaser corneal procedures, and other essential corneal surgery skills. Use this opportunity to refine your technical skills with various models, paying attention to the handling of delicate corneal tissues during different surgical approaches.

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INDICATION, SURGICAL TECHNIQUE, POST OPERATIVE CARE

UT-DSAEK

09:00 – 09:15

Present the indications for Descemet Stripping Automated Endothelial Keratoplasty (DSAEK), including endothelial dysfunctions like Fuchs' dystrophy. Explain the surgical technique, focusing on graft preparation, insertion, and positioning. Conclude by discussing essential post-operative care to ensure graft survival and manage complications. Be ready to review the surgical steps for DSAEK and the critical aspects of post-operative care, including patient monitoring and the detection of potential complications such as graft detachment.

Kunal Gadhvi

DMEK

09:15 – 10:00

Focus on the indications for Descemet Membrane Endothelial Keratoplasty (DMEK), emphasizing its suitability for patients with endothelial diseases. Explain the surgical technique, paying particular attention to the delicate handling of the ultra-thin graft. Highlight the differences in post-op care between DMEK and other endothelial keratoplasty techniques. Prepare to discuss the differences between DMEK and DSAEK in terms of surgical complexity, patient outcomes, and post-op care strategies, particularly the risks of graft detachment and rejection.

Vito Romano

Artificial endothelial Endothelial transplant

10:00 – 10:45

Explore the emerging field of artificial endothelial implants as a solution for corneal endothelial failure. Discuss the indications for using these synthetic alternatives, the surgical approach for implantation,

Bjorn Bachmann

and their advantages over traditional donor grafts. Focus on their potential to address the global shortage of donor corneas and any limitations based on current clinical results. Consider the evolving role of artificial endothelial transplants and be ready to discuss how they could revolutionize corneal surgery by reducing dependence on donor tissue. Pay attention to the surgical technique and potential post-operative issues.

10:45 – 11:00 Coffee Break

Mushroom PK

Explain the surgical technique for mushroom-shaped Penetrating Keratoplasty (PK), focusing on how it differs from traditional PK in preserving more healthy tissue. Discuss the indications for using this approach and post-operative care to ensure proper wound healing and minimize complications like astigmatism or graft rejection.

11:00 – 12:00

Be prepared to compare mushroom PK with other types of keratoplasty, particularly in terms of tissue preservation, patient outcomes, and post-op management.

Antonello Moramarco

SALK

Present the indications for SALK, typically used for anterior stromal pathologies. Discuss the surgical technique, highlighting the separation of the anterior lamella without entering the deep stroma. Cover post-operative care and how to manage complications like epithelial ingrowth.

Focus on understanding the unique role of SALK in managing anterior corneal diseases and how it compares to other lamellar keratoplasty techniques in terms of outcomes and complication management.

Cristina Bovone

Bowman Layer Transplantation

Provide an overview of the surgical technique for Bowman Layer Transplantation (BLT), primarily indicated for stabilizing advanced keratoconus.

12:00 – 13:00

Discuss the preparation of the Bowman layer, surgical insertion, and patient outcomes. Emphasize the post-op care needed to maintain corneal stability and prevent recurrence of ectasia.

Lamis Baydoun

Be prepared to discuss how BLT differs from other

SPECIAL PROGRAMME

	treatments for keratoconus and the importance of post-operative monitoring to ensure long-term stability of the cornea.	
	DALK Discuss the indications for DALK, focusing on conditions affecting the anterior stroma but sparing the endothelium, such as keratoconus or corneal scars. Explain the surgical technique, including the importance of preserving the Descemet membrane. Conclude with post-operative care to optimize graft healing and visual outcomes. Review the indications for DALK and be ready to compare its advantages over Penetrating Keratoplasty (PK) for certain patients, especially in terms of endothelial preservation.	Antonello Moramarco
13:00 – 14:00	Lunch Break	
14:00 – 17:30	Wet Lab Session Ex vivo human DMEK model (human cornea) Guide trainees through human DMEK models, offering practical feedback on surgical technique and complication management. Take this opportunity to enhance your hands-on skills, focusing on techniques learned in the lectures and applying them to human corneal models.	ALL

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COMPLICATIONS: management & solutions

09:00 – 09:15	DSAEK & DMEK Provide an overview of complications and solutions in DSAEK and DMEK surgeries, focusing on common issues like graft dislocation or rejection. Be prepared to discuss how to manage complications such as graft failure and patient outcomes following DSAEK and DMEK surgeries.	Vito Romano
09:15 – 10:00	Artificial endothelial Endothelial transplant Focus on complications associated with artificial endothelial transplants, such as implant integration issues and rejection. Discuss strategies to manage these challenges and improve long-term outcomes. Prepare to discuss the potential complications of this emerging technology and think about how you would	Bjorn Bachmann

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	manage post-operative care.	
	SALK Address the management of complications that can arise from Superficial Anterior Lamellar Keratoplasty (SALK), such as interface haze and epithelial ingrowth. Focus on identifying and solving the common complications associated with SALK and how to prevent these from occurring postoperatively.	Cristina Bovone
10:00 – 10:45		
10:45 – 11:00	Coffee Break	
	Bowman Layer Transplantation Discuss complications in Bowman Layer Transplantation (BLT), particularly addressing potential failure of the graft or limited visual improvement. Pay attention to how to handle complications unique to BLT and think about alternative management strategies when graft failure occurs.	Lamis Baydoun
11:00 – 12:00		
	Mushroom PK Explain the complications that can occur with mushroom-shaped PK, including graft rejection, and how to mitigate these risks. Prepare to discuss techniques to reduce the risk of complications in mushroom PK and how to address rejection or failure when it occurs.	Cristina Bovone
12:00 – 13:00		
	DALK Discuss the complications in DALK, such as Descemet membrane perforation, stromal rejection, and interface opacity. Emphasize how these issues can be prevented during surgery and managed post-operatively. Be prepared to discuss the unique complications of DALK compared to full-thickness keratoplasty and how to manage them to preserve the endothelial layer and optimize visual outcomes.	Antonello Moramarco
13:00 – 14:00	Lunch Break	

ETC – ESASO Training Center in Lugano, via Agli Orti 20, Viganello - Lugano

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