



Rigshospitalet

**COPENHAGEN
VASCULAR
RESEARCH
UNIT**

Annual Report

**20
25**

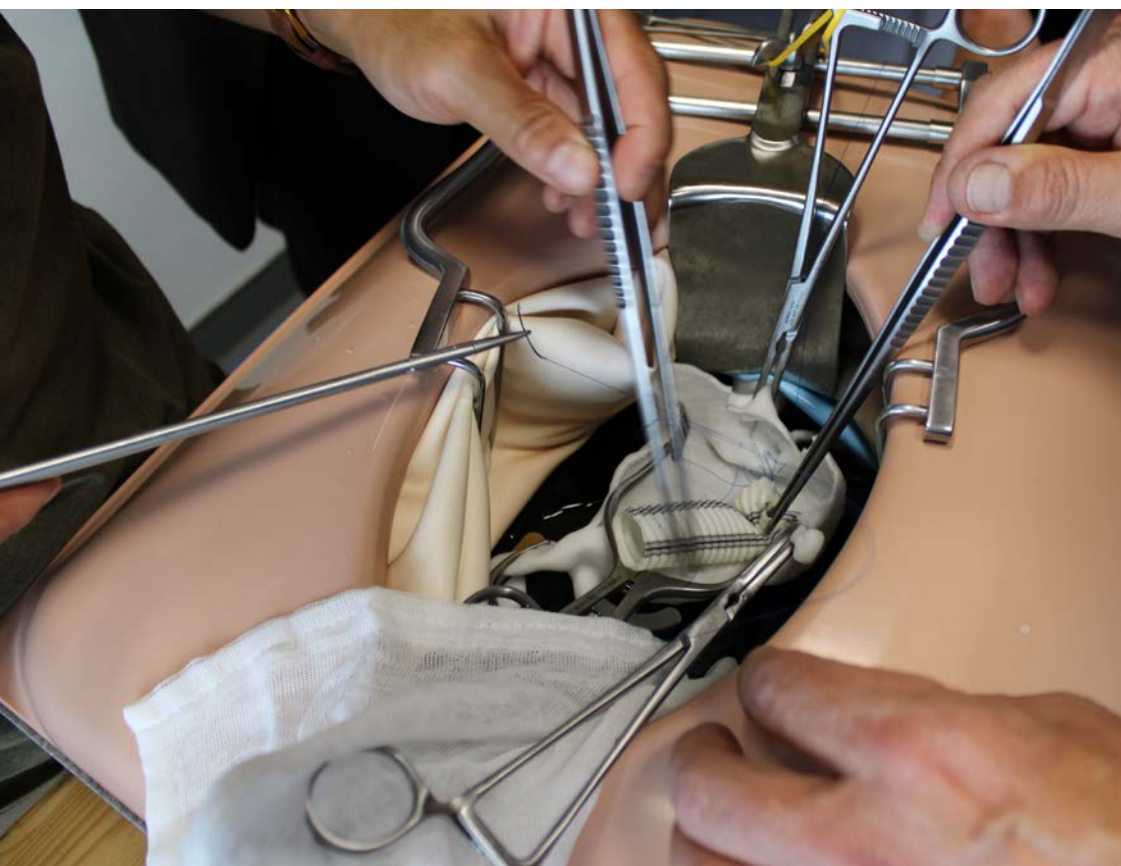


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Frontpage:

Winter view over Copenhagen from the 16th floor at
Rigshospitalet, home of the Copenhagen Vascular
Research Unit.



Introduction to the Annual Report 2025

Welcome to the Annual Report 2025 from the Copenhagen Vascular Research Unit! We are part of the Department of Vascular Surgery at the Heart Centre, Copenhagen University Hospital, Rigshospitalet.

The Department is one of Europe's largest vascular surgical clinics and offers open and endovascular surgical procedures. The Copenhagen Vascular Research Unit, led by Prof Jonas Peter Eiberg, Prof Timothy Andrew Resch, and Chief Nurse Lise Westerlin, is a cornerstone of the Department.



In the research unit, we conduct clinical trials and engage in clinical, educational, and translational research across the vascular spectrum - from complex aortic disease to carotid and peripheral arterial disease, vascular access, and vascular ultrasound. Our work is strengthened by close collaborations with the Copenhagen Aortic Centre, the Nordic Aortic Research Consortium (NordAARC), and other international aortic networks. Furthermore, we have translational partnerships with the University of Copenhagen, including the Davies Lab on molecular cardiovascular research and participation in the BRIDGE Translational Excellence Programme. We have an extensive track record and work closely with partners in the med tech and pharma industry to support clinical trials and registries to improve patient centred innovation and development. In parallel, we contribute to the development of European Society for Vascular Surgery (ESVS) guidelines, multicentre collaborations, and evidence-based education and simulation through ESVS Academy and Copenhagen Academy for Medical Education and Simulation (CAMES).

This annual report features an article on patient experience in the Scandinavian trial of Uncomplicated Aortic Dissection Therapy (SUNDAY), and an article about the PODO-MAP Project (Improving outcome in patients with a diabetic foot ulcer (DFU) using multimodal assessment of foot perfusion and clinical registry) lead by postdoc Pim van den Hoven, including his experience of moving to Copenhagen to do research. We hope these articles highlight some of the exciting work in our unit and encourage new partnerships and research projects in the years ahead.

Thank you to everyone who contributes to our work - patients, colleagues, collaborators, and partners. Your engagement makes our research and improvements in vascular care possible.

Warm regards,

Tim, Lise, and Jonas

Copenhagen Vascular Research Unit in Numbers



The Department of Vascular Surgery in Numbers



1

**Project
Coordinator**

1

**Academic
Officer**

4

Study Nurses

1

**Vascular
Sonographer**

5

Researchers

2

**Translational
Researchers**

3

Postdocs

13

PhD fellows

3

**Medical
Scholars**

1200

**Peripheral
revasculari-
sation**

380

AV fistulas

370

Aortic Cases

245

**Mesenteric
revasculari-
sations**

110

**Carotid
procedures**

240

**Varicose
Veins**

370

**Patients in the
outpatient
clinic each
week**

Meet the Team



COPENHAGEN VASCULAR RESEARCH UNIT

Meet the team behind Copenhagen Vascular Research Unit. Some of us work in the clinic, some in research, some in education, and some keep everything running day to day. Together, we plan studies, collect data, supervise, and support to deliver high-quality vascular research .



Chief Nurse Lise Westerlin



Prof Timothy Resch



Prof Jonas Peter Eiberg

STAFF



Camilla Handler Rasmussen
Project Coordinator

Josephine Nørremark Kjærulff
Academic Officer



Natascha Kjersner
Project Nurse

Bettina Kildemoes
Project Nurse



Mette Velløv Petersen
Project Nurse

Jing Wen Goh
Vascular Sonographer



Mette Avnsø Larsen
Research Secretary

Nanna Dyrvig Langberg
Project Nurse



TRANSLATIONAL RESEARCHERS



Lasse Gøbel Lorentzen

Sara Marthedal Jørgensen

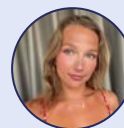


STUDENT RESEARCH ASSISTANTS



Filippa Maria de Place

Ditte Bremholm Knudsen



Anne-Marie Mosbæk Ellegaard



Sabina Johansen



Magdalena Cebula



FACULTY – ASSOCIATE PROFESSORS



Nikolaj Eldrup

Brian Lindegaard Pedersen



Kim Bredahl

Louise de la Motte



Michael Strøm

Stevo Duvnjak



Lorenz Meuli

Pim van den Hoven



POSTDOCS



Alexander Zielinski

Magdalena Broda



Rebecca Skov Conradsen

MEDICAL SCHOLARS



Issa Ghannoum

Isabella Kuszon Jørgensen



Karin Dalström

RESEARCH FELLOWS



Agnes Riparbelli Joensen

Alexandra Brandtzæg



Cecilie Markvard Møller

Emilie Eilersen



Julie Pedersen

Karen Yang-Jensen



Karin Yeung

Majken Jessen



Sara Mørup

Sofie Mundt



Tara Mastracci

Stasa Lugovski



Ulver Rouw

INTERNATIONAL FELLOWS



Tarik Leylek

Dalibor kubelik



Meet the Research Staff



Our staff from left to right: Jing Wen Goh, Camilla Handler Rasmussen, Mette Avnsø Larsen, Mette Velløv Petersen, Bettina Kildemoes, and Josephine Nørremark Kjærulff

In our research unit, this dedicated team ensures that everything runs smoothly, including protocols, contracts, finances, internal and external approvals, management, and more. Four project nurses, one project coordinator, one vascular sonographer, one research secretary, and one academic officer keep everything on track.

Every day, the team helps bridge the gap between research and clinical work. They keep clinical staff up to date, provide training on our ongoing studies, and continuously update information in the outpatient clinic so doctors and nurses can follow the current studies, our newest publications, and selected stories from the research unit. Our goal is to integrate research naturally into clinical work so we can continue to develop the best possible patient care.

Camilla Handler Rasmussen holds a master's degree in Health Science with a background in vascular nursing and works as Project Coordinator in the research unit. Camilla has been central in developing the unit's administrative and operational framework, with special responsibilities within project management, regulatory processes, study start-up activities, contract negotiations, and financial oversight.

Josephine Nørremark Kjærulff is a Medical Anthropologist and Academic Officer in the research unit and focuses on communication, administration, coordination, and the development of the units' internal framework. Among other things, Josephine is central to the annual report, funding, communication to the clinic, and coordinating fellows. Most recently, she has initiated a qualitative research project to better understand patients' experiences of participating in randomised clinical trials.

Bettina Kildemoes is a Project Nurse in the research unit. With many years in clinical practice and recent experience in research coordination, she brings expertise in patient care, protocol implementation, and study management. Bettina supports communication between teams and plays a key role in integrating research into the outpatient clinic ward, and operating rooms.

Mette Velløv Petersen is a Project Nurse in the research unit. With 25 years of experience, she has worked in cardiology for many years and joined the Copenhagen Vascular Research Unit in January 2025. She works in a detail-oriented, meticulous, and systematic manner to ensure accurate, optimal data for the studies. She achieves this in close collaboration with the principal investigators and numerous external partners.

Natascha Schou Kjersner is a Project Nurse in the research unit and an experienced intensive care nurse, playing a central role in developing the unit's financial management and administrative structures with strong analytical skills and a structured approach. Her intensive care experience strengthens the handling of clinical data, and she has participated in several clinical trials, supporting their planning and coordination to ensure consistent high-quality outcomes.

Nanna Dyrvig Langberg is a Project Nurse in the research unit and holds a master's degree in Health Science. She has previous experience from being a research assistant and has been an oncology and cardiovascular nurse.

Jing Wen Goh is a certified Vascular Sonographer with a background in Biomedical Sciences. Jing is trained and educated in Singapore and has several years of experience in clinical vascular sonography. She performs ultrasound examinations in both clinical and research settings, trains junior nurses, supports PhD fellows with ultrasound, and assists in data entry.

Mette Avnsø Larsen is a medical secretary and works in a shared position between the clinic and the research unit. In the research unit, Mette schedules patients for several clinical studies and cohorts. Through her coordination of patient pathways, registration, and coding, she is contributing to data quality and coherence.

Patient Perspective :

Jette's Experience in the SUNDAY Trial

When 79-year-old Jette was on a leisurely walk, she experienced sudden back pain and loss of breath. Scans revealed a hematoma in the aortic arch, which led to an urgent surgical procedure at Rigshospitalet. After initial recovery, she once again felt back pain, and another tear was found in the aorta. While at the hospital, Jette was approached by a project nurse who informed her that she was eligible for one of the research unit's studies, the SUNDAY Trial. The SUNDAY Trial is a Scandinavian randomised study exploring treatment strategies for uncomplicated Stanford type-B aortic dissection.

MOTIVATION AND INFORMATION

Jette received oral and written information about the trial, as well as a drawing explaining the rupture and why the trial could be relevant to her. Jette explains: "I think I got a good explanation, first from the project nurse and afterwards in a conversation with the professor. It was very calm and relaxed, and I felt no pressure." Jette highlights that this made her trust the team, which reinforced her choice to join the study. Furthermore, she explains that she was curious about the study and wanted to contribute with new knowledge.

FACING UNCERTAINTY

To participate in the SUNDAY Trial meant that Jette's treatment was randomly assigned to either standard medical therapy or endovascular surgery (thoracic endovascular aortic repair) plus standard medical therapy. Jette explains that the randomisation initially felt overwhelming: "That is not something you just do. Suddenly, you must decide: should I take the jump and participate in the study, or should I stay on the diving board, right?"

"THEY CARE ABOUT THE PATIENT, NOT JUST THE PROCEDURE"

Jette ended up receiving the standard medical therapy alone, and is now living a normal life, taking only minor considerations into account in her everyday life. The study requires Jette to measure her blood pressure and attend follow-up visits. Jette explains that participating in the study has given her a sense of security: "I know I am not alone. I have people that I have met and trust - people that I can reach out to if anything serious happens, and that gives me confidence. You can feel that they care about the patient and not just the procedure. That makes a big difference."

ADVICE FOR FUTURE RESEARCH

Jette believes that good communication and involving relatives are essential: "Give patients time and clear information and involve their relatives. When people understand what is happening, they feel safe and empowered to choose." Most essentially, Jette finds it important that the healthcare professionals remember the person behind the disease, the study, and the procedure. For Jette, participation was not only about her own treatment but also about contributing to progress: "It's important to find new ways and the people working on this study are truly dedicated."

“

Give patients time and clear information and involve their relatives. When people understand what's happening, they feel safe and empowered to choose.



WHAT IS THE SUNDAY TRIAL?

Title: Scandinavian trial of Uncomplicated Aortic Dissection Therapy (SUNDAY Trial)

Objective: To compare overall survival at five years between patients treated with SMT (standard medical therapy) or SMT + subacute TEVAR (thoracic endovascular aortic repair).

Hypothesis: That the five-year survival results for patients treated with either SMT or SMT + TEVAR are equivalent.

Study Design: Randomised, open-labeled, observer-blinded, two-armed controlled study.

Participating countries: Denmark, Finland, Iceland, Netherlands, New Zealand, Serbia, Norway, and Sweden

Trial Number: NCT05215587 (clinicaltrials.gov)

Project Nurse Mette Velløv Petersen interviewing Jette during a SUNDAY Trial investigator meeting.

“

It's important to find new ways and the people working on this study are truly dedicated.

Meet the Researchers

Leadership

- **Background:** Professor of Vascular Surgery at Rigshospitalet and the University of Copenhagen. PhD in vascular ultrasound (University of Copenhagen, 2004) and formal training in research management (Copenhagen Business School).
- **Focus:** Vascular ultrasound, translational vascular medicine, mesenteric ischaemia, physician wellbeing, peripheral arterial disease (PAD) and simulation-based education. Leads the Department's vascular ultrasound service performing more than 10,000 vascular ultrasound examinations annually.
- **Roles & Contributions:** Founder and former Chair of the European Society for Vascular Surgery (ESVS) Academy, past President of the Danish Society for Vascular Surgery, National Programme Director for vascular surgery and expert advisor to the Danish Health Authority, affiliated with Copenhagen Academy for Medical Education and Simulation (CAMES) and University of Copenhagen graduate programmes.



**JONAS PETER
EIBERG, MD, PHD**

Professor

- **Background:** Professor of Vascular Surgery at Rigshospitalet and the University of Copenhagen. PhD on endovascular aortic repair (Lund University, 1999) and Aortic Fellowship (Cleveland Clinic, 2004-2005).
- **Focus:** Complex aortic disease, advanced endovascular repair, mesenteric ischemia including investigator-led and multicentre trials.
- **Roles & Contributions:** Leads the Complex Aortic Surgery programme at Rigshospitalet's Copenhagen Aortic Centre, former Chairman of the Vascular Centre in Malmö/Lund, principal investigator in multiple trials and has performed/proctored 1,000+ complex aortic procedures, member of the European Society for Vascular Surgery (ESVS) Guidelines Steering Committee.



TIMOTHY RESCH
MD, PHD

Professor

- **Background:** Leads the research unit and previously managed the Department's outpatient clinic (15,000+ patients/year). Holds a Master of Public Governance (Copenhagen Business School, 2022) focused on change management.
- **Focus:** Integrating research into everyday clinical practice, nursing-led prevention, and endovascular competence development. Strong focus on ultrasound innovation and simulation-based education for endovascular teams.
- **Roles & Contributions:** Pioneered the "Endovascular Assistants (EVA)" concept and competency cards, central to the Certificate of Competence in Vascular Ultrasound with European Society for Vascular Surgery (ESVS) and former board member of Denmark's Professional Association for Cardiovascular and Thoracic Surgical Nurses.



LISE WESTERLIN
RS, MPG

Chief Nurse

Faculty

- **Background:** Head of Department, consultant vascular surgeon (2011) and senior researcher, PhD on carotid disease (University of Copenhagen, 2007). Holds a Master of Management Development (Copenhagen Business School, 2024).
- **Focus:** Carotid disease, early detection of atherosclerosis, and registry-based studies on treatment trends and outcomes.
- **Roles & Contributions:** Drives data-enabled research and quality improvement using Karbase and VASCUNET, co-supervises multiple PhD projects, and is a key person in the REACT trial.



NIKOLAJ ELDRUP
MD, PHD

Head of Department,
Associate Professor

- **Background:** Consultant in vascular surgery and experienced researcher, PhD in endovascular aortic repair (EVAR) surveillance with ultrasound (University of Copenhagen, 2014).
- **Focus:** Tailored EVAR surveillance, abdominal aortic aneurysm (AAA) risk prediction, and educational research in vascular ultrasound and open aortic repair.
- **Roles & Contributions:** Leads European Society for Vascular Surgery (ESVS) Basic and Advanced Vascular Ultrasound courses and the Certificate of Competence in Vascular Ultrasound (CCVUS) exam. Contributes to post-graduate course and assessment development.



KIM KARGAARD
BREDAHL, MD, PHD

Associate Professor

- **Background:** Consultant in vascular surgery and Head of Education at the Department of Vascular Surgery, PhD in post-implantation syndrome after endovascular aortic repair (EVAR) (University of Copenhagen, 2013).
- **Focus:** Peri-operative optimisation, aortic aneurysms, mural thrombus, and simulation-based training.
- **Roles & Contributions:** Past President (outgoing Chair) of the Danish Society for Vascular Surgery (DKKS). Serves on the DKKS Education Committee as Inspector (East), and as DKKS representative in joint surgical councils/forums.



LOUISE ROSENØRN
DE LA MOTTE, MD,
PHD

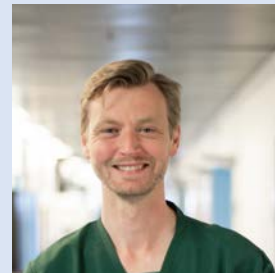
Associate Professor

- **Background:** Consultant vascular surgeon with a translational profile bridging clinical practice and physiology/metabolism research, holds a PhD from the University of Copenhagen (2015).
- **Focus:** Muscle perfusion, exercise physiology and metabolism in peripheral arterial disease (PAD) and type 2 diabetes, haemodialysis access innovation.
- **Roles & Contributions:** Pioneered ultrasound-guided percutaneous transluminal angioplasty (PTA) for arteriovenous (AV) fistulas and PAD in Denmark, supports clinical development in intravascular ultrasound (IVUS) and percutaneous AV fistula creation.



**BRIAN LINDEGAARD
PEDERSEN MD, PHD**
Associate Professor

- **Background:** Consultant vascular surgeon with a special focus on post-graduate education. Holds a PhD in simulation-based endovascular education (University of Copenhagen, 2017).
- **Focus:** Assessment tools and training for operator competence in abdominal aortic aneurysm repair.
- **Roles & Contributions:** Key faculty in ENHANCE on simulation-based endovascular training. Coordinator of the OR-Blackbox initiative at the Department.



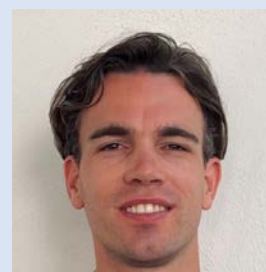
**MICHAEL STRØM
MD, LL.B, PHD**
Associate Professor

- **Background:** Consultant vascular surgeon and interventional radiologist, radiology training in Belgrade and vascular surgery residency in Copenhagen (2024).
- **Focus:** Open and endovascular aortic and peripheral disease with a particular focus on endovascular aortic repair (EVAR) and embolization strategies.
- **Roles & Contributions:** Internationally active educator and section editor in CardioVascular and Interventional Radiology (CVIR) for aortic/peripheral interventions.



**STEVO DUVNJAK
MD, PHD**
Associate Professor

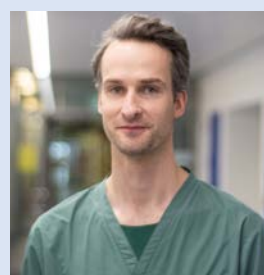
- **Background:** Consultant vascular surgeon, PhD in near-infrared fluorescence imaging with indocyanine green (University of Leiden, 2022).
- **Focus:** Principal investigator of PODO-MAP: combining duplex ultrasound, contrast-enhanced ultrasound (CEUS) and fluorescence imaging for diabetic foot ulcer perfusion assessment.
- **Roles & Contributions:** Founder of the DIAFLOW registry, Associate Professor affiliation at Rigshospitalet and Roskilde Hospital. Supervisor of PhD fellows in Denmark and the Netherlands.



PIM VAN DEN HOVEN
MD, PHD

Associate Professor,
Postdoc

- **Background:** Vascular surgeon and Oxford MSc in medical statistics based in Zurich, consultant at University Hospital Zurich and Associate Professor at University of Copenhagen following his complex aortic fellowship in the Department.
- **Focus:** Epidemiology of aortic disease and registry-based studies.
- **Roles & Contributions:** Statistical advisor to European Journal of Vascular and Endovascular Surgery (EJVES), co-represents Swissvasc in VASCUNET and supports registry methodology and supervision. Supervised multiple master's thesis and one PhD project.



LORENZ MEULI, MD,
MSC, FEBVS

Visiting Associate
Professor

- **Background:** Former Head of Department at Rigshospitalet (2004–2021) and Professor Emeritus (University of Copenhagen).
- **Focus:** Vascular imaging, especially ultrasound, for diagnosis and treatment monitoring, early detection of atherosclerosis and medical optimisation.
- **Roles & Contributions:** PhD supervision, former president and secretary general in European Society for Vascular Surgery (ESVS). Honorary member of ESVS and Dansk Karkirurgisk Selskab (DKKS).



HENRIK SILLESEN
MD, DMSc

Professor Emeritus

- **Background:** Vascular and general surgeon with a longstanding focus on venous disease, former President of the European Venous Forum (2009).
- **Focus:** Venous thrombosis and chronic venous disease, including deep vein thrombosis (DVT) epidemiology, prevention, and early thrombus removal.
- **Roles & Contributions:** Contributes to European Society for Vascular Surgery (ESVS) guideline work, serves on editorial boards and teaches at international venous workshops.



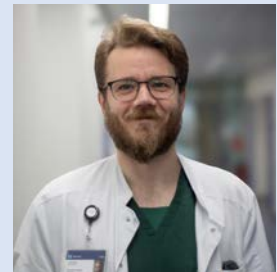
**NIELS BÆKGAARD
MD**

Associate professor
emeritus



Postdocs and Translational Researchers

- **Background:** Late-phase vascular surgery trainee, postdoc with dedicated research time, PhD (University of Copenhagen, 2023)
- **Focus:** Clinical vascular ultrasound and abdominal aortic aneurysm (AAA) progression within the Copenhagen Aortic Cohort (COACH), integrating advanced ultrasound with circulating biomarkers.
- **Roles & Contributions:** Teaches European Society for Vascular Surgery (ESVS) ultrasound courses, leads mandatory research courses for Danish vascular trainees and co-convenes national interdisciplinary training.



ALEXANDER HAKON
ZIELINSKI, MD, PHD

Postdoc

- **Background:** Senior scientist with PhD in cardiovascular research (University of Copenhagen, 2018) and has a molecular biomedicine background.
- **Focus:** Mass spectrometry-based proteomics and clinically implementable methods for endovascular sample collection and translational modelling.
- **Roles & Contributions:** Joint University of Copenhagen and Vascular Research Unit affiliation, co-supervises PhD fellows and supports translational pipelines linking patient samples with preclinical systems.



LASSE GØBEL
LORENTZEN, MSc,
PHD, POSTDOC

Senior Scientist

- **Background:** Third-year vascular surgery trainee. Holds a PhD on imaging of abdominal aortic aneurysm (AAA) growth and risk of endovascular aortic repair (EVAR) failure (University of Copenhagen, 2023).
- **Research Focus:** Specializes in advanced ultrasound and computed tomography angiography (CTA) imaging of the abdominal aorta. She is also involved in studies on limb ischemia and carotid stenosis.
- **Roles & Contributions:** Authored 14 peer-reviewed publications, one book chapter for nursing students, and delivered numerous international presentations.



MAGDALENA
BRODA, MD, PHD

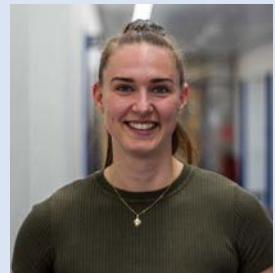
Postdoc

- **Background:** Vascular surgery trainee and postdoctoral researcher with a focus on surgical education. PhD within simulation-based education in endovascular aortic repair (EVAR) (University of Copenhagen, 2024).
- **Focus:** Simulation-based education and patient-specific rehearsal for EVAR to improve safety and performance.
- **Roles & Contributions:** Supervisor of master's thesis students. Central to the implementation of educational research into clinical practice in the Department. European Society for Vascular Surgery (ESVS) Academy member.



REBECCA A. C. SKOV,
MD, PHD
Postdoc

- **Background:** Postdoc in molecular biomedicine, PhD (University of Copenhagen, 2023), BRIDGE fellow (Translational Excellence Programme).
- **Focus:** Proteomics and cell/tissue models studying extracellular matrix remodelling in atherosclerosis and aortic aneurysms, ex vivo plaque models.
- **Roles & Contributions:** Joint University of Copenhagen and Vascular Research Unit affiliation. Board member of the Danish Society for Matrix Biology.



SARA MARTHEDAL
JØRGENSEN, MSc,
PHD
Postdoc

PhD fellows

- **Background:** MD and PhD fellow (University of Copenhagen). Agnes' research centres on complex aortic endovascular surgery, simulation-based education, and structured assessment of technical competence.
- **Focus:** Developing an evidence-based F/BEVAR simulation course based on ENHANCE principles. The aim is to support proficiency-based training and objective assessment in complex endovascular aortic repair.
- **Roles & contributions:** Agnes' work includes development of the FEVARATE assessment tool, studies of learning and assessment, and research on how simulation-based competence translates into clinical performance.



**AGNES RIPARBELLI
JOENSEN, MD**

PhD Fellow

- **Background:** MD and final-year PhD fellow (University of Copenhagen), working with diagnostic imaging in reno-visceral arterial disease.
- **Focus:** Two ongoing randomised trials: COMESS (bare metal vs covered stents) and DAN-PTRA-II (percutaneous transluminal renal angioplasty vs sham).
- **Roles & Contributions:** Contributes to trial execution and imaging work-flows and is preparing international research stay while writing thesis papers.



**ALEXANDRA
BRANDTZÆG, MD**

PhD Fellow

- **Background:** Experienced educator at Copenhagen Academy for Medical Education and Simulation (CAMES), PhD fellow (University of Copenhagen), Master of Process Leadership and Organisational Change (PROF), Certified Psychotherapist (MPF).
- **Focus:** Mental wellbeing in acute care, leading a randomised controlled trial (RCT) on adaptive e-learning to reduce anxiety in junior doctors, qualitative and cohort work planned.
- **Roles & Contributions:** Published on non-technical skills, debriefing and team dynamics, contributes to evidence-based educational development, several publications in pipeline.



**ANNA SOFIE
MUNDT, NURSE,
PROF, MPF**

PhD Fellow

- **Background:** Consultant vascular surgeon and PhD fellow (University of Copenhagen), leading the open aortic team at Aarhus University Hospital.
- **Focus:** Physician burnout in vascular surgery in collaboration with the National Research Centre for the Working Environment (NRCWE).
- **Roles & Contributions:** Active in VASCUNET and ENHANCE OPEN faculty, appointed to the European Society for Vascular Surgery equality, diversity, inclusion (ESVS EDI) Task Force as VASCUNET representative, and contributes to training curriculum work.



**CECILIE MARKVARD
MØLLER**

MD, PhD Fellow

- **Background:** Late-phase vascular surgery trainee undertaking a PhD at the Department (University of Copenhagen).
- **Focus:** Leads PREVAR, a randomised trial of pre-emptive abdominal aortic aneurysm (AAA) sac embolization during endovascular aortic repair (EVAR) assessing sac behaviour, type II endoleaks and reinterventions.
- **Roles & Contributions:** Manages trial operations and supports evidence generation for improved EVAR outcomes.



**EMILIE NØDDESKOV
EILERSEN, MD**

PhD Fellow

- **Background:** PhD fellow within the Copenhagen Aortic Cohort (COACH) abdominal aortic aneurysm (AAA) cohort, with a special interest in intraluminal thrombus (ILT).
- **Focus:** Blood type and ILT volume, and links between ILT and aneurysm biomechanics, ILT biopsies for proteomics during AAA repair.
- **Roles & Contributions:** Contributes to the multicentre MAAAGI trial and supports cohort follow-up, biobanking, and translational analyses.



**JULIE KROGH
PEDERSEN, MD**

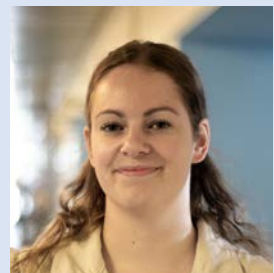
PhD Fellow

- **Background:** Vascular surgery trainee and PhD fellow (University of Copenhagen).
- **Focus:** Vulnerable carotid plaque markers using advanced 3D contrast-enhanced ultrasound and proteomics.
- **Roles & Contributions:** Author of six original papers, two are ready for inclusion in the thesis, and the third is in manuscript. Preparing PhD thesis alongside specialist training for defence late 2026.



KARIN YEUNG, MD
PhD Fellow

- **Background:** MD and PhD fellow (University of Copenhagen) focusing on carotid atherosclerosis and advanced vascular ultrasound.
- **Focus:** Double-blind, randomised, placebo-controlled phase IV trial investigating the effect of rivaroxaban on carotid plaque morphology and volume (3D and contrast-enhanced ultrasound).
- **Roles & Contributions:** Drug-trial paper published in 2025, follow-up and reproducibility studies prepared for 2026 publication. Thesis submitted 17 December 2025.



**MAJKEN LYHNE
JESSEN, MD**
PhD Fellow

- **Background:** PhD fellow in vascular surgery at Rigshospitalet (University of Copenhagen), medical degree in 2022.
- **Focus:** Leads the PRIMA trial, integrating lesion and blood proteomics with advanced imaging and patient-reported outcomes within COMESS (bare metal vs covered stent) and DAN-PTRA-II (percutaneous transluminal renal angioplasty vs sham).
- **Roles & Contributions:** Responsible for recruitment, ultrasound follow-up, biobank logistics, and coordinates translational collaboration with Davies Lab



SARA MØRUP, MD
PhD Fellow

- **Background:** Senior vascular surgeon stationed at St. Bartholomew's Hospital in London with a focus on outcomes in complex aortic disease, aspects on socioeconomic impact and deprivation, and remote monitoring pathways for aortic dissection care. PhD fellow without enrolment at Rigshospitalet (University of Copenhagen).
- **Focus:** The impact of deprivation on cardiovascular and surgical outcomes, combining large datasets with clinical pathway development.
- **Roles & Contributions:** Steering committee member of the European Aortic Data Collaboration, leads clinical pathway initiatives and cross-centre collaboration.



TARA MASTRACCI,
MD, MSC
PhD fellow

- **Background:** MD and PhD fellow exploring ultrasound-based assessment of biomechanical properties of aortic aneurysms (University of Copenhagen).
- **Focus:** Abdominal aortic aneurysm (AAA) risk prediction using vessel wall stain and development of the strain-pattern concept, advanced ultrasound, statistics and AI within the Copenhagen Aortic Cohort (COACH).
- **Roles & Contributions:** Collaborates internationally (France/Italy) and contributes across projects, supervises several master and bachelor theses.



ULVER SPANGSBERG
ROUW, MD
PhD Fellow

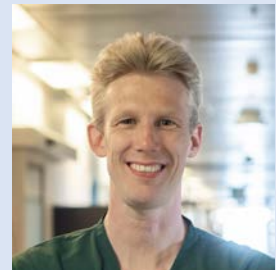
- **Background:** PhD fellow focusing on individuals with chronic limb-threatening ischemia (CLTI), with an interest in patients with diabetic foot ulcers (DFU). Involved in the PODO-MAP study of CLTI patients undergoing balloon angioplasty procedures in the lower extremities (PTA).
- **Focus:** Investigates whether supplementary ultrasound methods could help evaluate foot perfusion after PTA, enable early identification of insufficient blood supply, and explore correlations between the methods, toe pressure, and ankle pressure measurements.
- **Roles & Contributions:** Co-principal investigator on the PATENT study, addressing the benefits and the prognostic value of intraoperative completion control of Transit-Time Flow following infrainguinal bypass surgery in CLTI patients.



STASA LUGOVSKI, MD
PhD Fellow

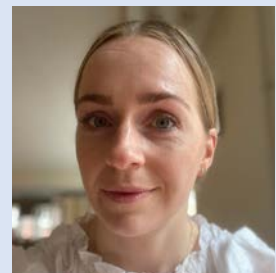
Researchers

- **Background:** Consultant vascular surgeon, PhD in carotid ultrasound (University of Copenhagen, 2019)
- **Focus:** Carotid atherosclerosis and advanced 3D ultrasound imaging, including ultrasonic carotid plaque composition.
- **Roles & Contributions:** Faculty in European Society for Vascular Surgery (ESVS) ultrasound workshops, co-supervises PhD fellows and contributes to national guidelines. Clinical lead for supra-aortic disease in the Department.



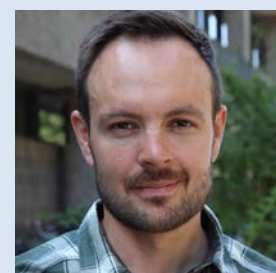
**BENJAMIN VIKJÆR
SANDHOLT, MD, PHD**

- **Background:** Medical degree in 2020, resident in Vascular Surgery Roskilde, research fellow without enrolment at Rigshospitalet (University of Copenhagen).
- **Focus:** Studies the impact of bridging stent on outcomes in complex aortic disease with a focus on chronic aortic dissections.
- **Roles & Contributions:** Analysis of cohort data and supports evidence generation for improved endovascular thoracoabdominal aortic aneurysm repair (eTAAA) outcomes.



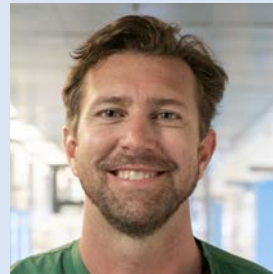
**FRIDA RUN
JONSDOTTIR, MD**
Research Fellow

- **Background:** Vascular surgical trainee, PhD focusing on simulation-based education (University of Copenhagen, 2023).
- **Focus:** Simulation-based training in open and endovascular aortic repair and endovascular peripheral arterial disease (PAD) treatment.
- **Roles & Contributions:** Central in the implementation of our educational research into clinical practice in the Department. Supervisor of master's thesis students.



**JONATHAN LAWAETZ
RASMUSSEN,
MD, PHD**

- **Background:** Consultant vascular surgeon and researcher affiliated with the Department and Research Unit.
- **Focus:** Aortic infections and complex aortic disease with outcomes and guideline-relevant research.
- **Roles & Contributions:** Contributes to national and European guideline and working-group activities alongside clinical research. Supports collaborative, multicentre projects, and registries



KARL SÖRELIUS,
MD, PHD

- **Background:** Staff specialist vascular surgeon, PhD in vascular ultrasound (University of Copenhagen, 2020).
- **Focus:** Carotid atherosclerosis, plaque morphology, and advanced 3D ultrasound imaging.
- **Roles & Contributions:** Faculty on the European Society for Vascular Surgery (ESVS) basic ultrasound courses and contributes to national clinical guideline development.



LÆRKE URBAK, MD,
PHD

Medical Scholars

- **Background:** Medical degree in 2026, currently appointed as a pre-doctoral research fellow at the Department of Vascular Surgery, Rigshospitalet.
- **Focus:** Studies ultrasound-based strain pattern analysis in abdominal aortic aneurysms (AAA), examining associations between spatial biomechanics and health- and lifestyle-related factors within the Copenhagen Aortic Cohort (COACH).
- **Roles & Contributions:** Contributes to data generation (ultrasound and laboratory work). Responsible for statistical analysis and manuscript preparation, supporting biomechanical research in AAA and ongoing cohort-based studies.



ISSA GHANNOUM,
MEDICAL STUDENT

- **Background:** Medical student (5th year) at the University of Copenhagen and medical scholar at the Department.
- **Focus:** Post-endovascular aortic repair (EVAR) surveillance and sac behavior.
- **Roles & Contributions:** Supports ongoing clinical research activities within the unit and conducts independent research projects, including a bachelor thesis on post-EVAR sac behavior, and a completed study evaluating 3D software-assisted ultrasound versus conventional 2D ultrasound in post-EVAR patients.



ISABELLA KUSZON
JØRGENSEN ,
MEDICAL STUDENT

- **Background:** 6th year medical student, writing master's thesis at the Department of Vascular Surgery.
- **Focus:** Assisting in ultrasound follow up of Abdominal Aortic Aneurysm (AAA) and clinical controls in MAAAGI, a randomised controlled trial of Metformin for AAA Growth Inhibition
- **Roles & Contributions:** Team leader of medical students at the vascular research department.



KARIN DAHLSTRÖM,
MEDICAL STUDENT



The Fellowship Programme

The Fellowship Programme at the Department of Vascular Surgery and Copenhagen Vascular Research Unit reflects our dedication to medical education, international collaboration, and evidence-based practice. In addition to the fellow's engagement in modern patient-centred care, the programme also offers close academic supervision and research projects tailored to the fellow.

Testimonials from fellows, such as Tamas Kovacs and Stefan Koning, highlight our commitment to developing highly skilled, knowledgeable, and compassionate surgeons to shape the future of vascular care internationally.

TESTIMONIAL FROM STEFAN KONING

I was medically trained at Leiden University Medical Centre (LUMC) in the Netherlands and am pursuing a PhD in fluorescence-guided surgery. My research focuses on quantifying tissue perfusion during surgery to prevent complications and evaluate vascular interventions such as peripheral revascularisation. This sparked my interest in translational vascular research combining imaging, physiology, and clinical care.

I joined Rigshospitalet through the longstanding collaboration between my group, GreenLight Leiden Vascular Research Group led by Joost van der Vorst, and Copenhagen Vascular Research Unit. Annual PhD exchanges had already given me a positive impression of the Department. Rigshospitalet's centralization of vascular surgery offers exceptional clinical volume, high-quality data, and expertise in complex pathology - an ideal research setting.

As a fellow, I was fully integrated into the Research Unit and welcomed in clinical activities. The close link between research and practice created a dynamic, motivating environment. During my fellowship, in collaboration with PhD fellow and MD Ulver Rouw and Prof Eiberg, I developed machine learning models to predict aortic aneurysm growth using biomarkers and patient demographics - work that has strengthened my data-driven research skills.

Looking ahead, I aim to continue collaborating as an affiliated researcher and advance quantitative imaging and predictive tools to support clinical decision-making. My time in Denmark left a lasting impression, both professionally and personally.





TESTIMONIAL FROM TAMAS KOVACS

My interest in complex endovascular aortic surgery began early, and my passion for advanced aortic care was further rooted during a vascular fellowship at Cleveland Clinic. To deepen my experience with custom-made fenestrated and branched endovascular solutions, I arranged a fellowship at the Department of Vascular Surgery at Rigshospitalet under the guidance of Prof Resch. Rigshospitalet and Prof Resch are internationally recognised for their aortic program and strong academic culture, making it the ideal place for this next step. In addition, Prof Resch's training at the Cleveland Clinic made the opportunity even more meaningful.

From the start, the fellowship exceeded my expectations. I was involved in every stage of complex aortic care, from planning and device design to case discussions and work in the hybrid suite. This hands-on exposure has strengthened my understanding and sharpened my technical decision-making. Prof Resch is an outstanding mentor, always patient, clear, and eager to teach, and the Department has welcomed me warmly, creating a supportive and highly collegial environment.

The research atmosphere is equally inspiring. I have begun a project on outcomes of state-of-the-art flared bridging stents, an area closely aligned with my long-term goals. The research unit is dynamic, collaborative, and remarkably productive, with PhD fellows, postdocs, and faculty working closely across multiple clinical and translational areas. Living in Copenhagen has been a wonderful experience. The city is welcoming, multicultural, easy to navigate, and full of outdoor activities: from biking everywhere to exploring the waterfront. I aspire to carry forward the Rigshospitalet legacy into my own practice and to remain engaged with the Scandinavian research network throughout my career.



Educational Programmes

The Copenhagen Vascular Research Unit and the Department of Vascular Surgery have a long-standing tradition of delivering internationally recognized postgraduate training, primarily in collaboration with the European Society for Vascular Surgery (ESVS) Academy and Copenhagen Academy for Medical Education and Simulation (CAMES). Our efforts are driven by a commitment to state-of-the-art, evidence-based education and supported by strong expertise in educational research.

Among our key achievements is the ENHANCE programme (ESVS and Copenhagen Certification program), which centres on simulation-based training and validated assessment of procedural skills. The programme features an expanding series of modular workshops that function independently yet contribute to a coherent educational pathway. Continuous research and systematic data collection are integrated into most courses, ensuring that we remain at the leading edge of surgical education.

ENHANCE EVAR

- **Purpose & Structure:** ENHANCE EVAR is a 3-day simulation-based programme preparing vascular surgical trainees for infrarenal endovascular aortic repair (EVAR) through mandatory e-learning and three intensive days of hands-on training in Copenhagen.
- **Teaching & Quality:** Training is delivered by an international EVAR faculty, uses high-fidelity simulators, and maintains a 2:1 trainee-to-trainer ratio for focused guidance and feedback.
- **Programmes & Standards:** The course is part of the European Society for Vascular Surgery (ESVS) Aortic Fellowship, and follow validated, published methods and form a mandatory element of the Danish vascular surgery specialist training.

ENHANCE OPEN

- **Purpose & Structure:** ENHANCE OPEN is a 3-day simulation-based programme preparing surgeons to perform elective open repair of infrarenal abdominal aortic aneurysms.
- **Teaching & Quality:** Training is delivered by an international faculty with a 2:1 trainee-to-tutor ratio and uses life-like pulsatile aortic models with authentic instruments, grafts, and sutures to replicate operative steps.
- **Programmes & Standards:** The course is part of the European Society for Vascular Surgery (ESVS) Aortic Fellowship, and is validated, published, and mandatory in the Danish vascular surgery specialist training curriculum.

ENHANCE PAD

- **Purpose & Structure:** ENHANCE PAD is a 3-day programme that introduces basic endovascular skills for treating lower limb occlusive disease, beginning with e-learning and followed by three days of intensive hands-on training.
- **Teaching & Quality:** An international faculty guides participants using advanced endovascular simulators, including ultrasound-guided puncture and procedural planning on dedicated phantoms and workstations.
- **Programmes & Standards:** The programme has been delivered for Danish vascular surgery trainees for the past 10 years as a mandatory element in the Danish vascular surgery specialist training curriculum. We are now working to offer ENHANCE PAD internationally through the European Society for Vascular Surgery (ESVS) Academy, ideally within the coming year.

ENHANCE EVAR/PAD NURSE

- **Purpose & Structure:** ENHANCE EVAR/PAD NURSE is a focused 6-hour programme delivered over two days, tailored to operating room nurses working in the endovascular suite and mandatory for endovascular nursing staff at Rigshospitalet.
- **Teaching & Quality:** Participants complete e-learning combined with hands-on team-based simulation focusing on endovascular workflow, device handling, communication, and error prevention in realistic scenarios.
- **Programmes & Standards:** Evidence-based programme that supports safe and standardised onboarding and contributes to reduced stress and stronger interdisciplinary teamwork in the endovascular operating room.

ENHANCE BASIC VASCULAR ULTRASOUND

- **Purpose & Structure:** ENHANCE Basic Vascular Ultrasound is a 3-day programme training participants in core vascular ultrasound examinations, including the abdominal aorta, femoral arteries, bypass grafts, basic carotids, percutaneous access, deep vein thrombosis (DVT), and varicose veins.
- **Teaching & Quality:** Training combines focused lectures with extensive supervised hands-on scanning of vascular patients under expert guidance, as approximately half the programme is dedicated hands-on.
- **Programmes & Standards:** This course has been delivered annually for nearly 20 years and is therefore the longest-running course within the European Society for Vascular Surgery (ESVS) Academy. After the course and additional departmental training, participants may apply for ESVS certification. The course is a mandatory element in the Danish vascular surgery specialist training curriculum.



ENHANCE ADVANCED VASCULAR ULTRASOUND

- **Purpose & Structure:** ENHANCE Advanced Vascular Ultrasound is a 3-day programme providing a technical and practical foundation in advanced vascular ultrasound and its scientific principles.
- **Teaching & Quality:** More than half the programme is dedicated to supervised hands-on scanning on patients with relevant vascular pathology, supplemented by targeted lectures and case-based discussions.
- **Programmes & Standards:** The course covers below-the-knee arteries, carotid and vertebral arteries, upper-limb arteries, dialysis access, endovascular aortic repair (EVAR) surveillance, mesenteric vessels, and selected advanced modalities including 3D and contrast-enhanced ultrasound.

ENHANCE F/BEVAR

- **Purpose & Structure:** Planned to launch early 2027 or before. ENHANCE F/BEVAR is a 3-day programme that will prepare endovascular aortic repair (EVAR) experienced senior vascular surgical trainees and vascular surgeons for fenestrated and branched endovascular aortic repair (F/BEVAR) in juxta- and suprarenal aortic aneurysms. It will be 3 days of intensive, structured simulation-based training preceded by e-learning.
- **Teaching & Quality:** Training will be delivered by an experienced international faculty using high-fidelity simulation and structured feedback, with repeated objective assessments throughout the course to support deliberate practice and safe progression. Video recording of selected simulated procedures will be mandatory for research and ongoing quality improvement.
- **Programmes & Standards:** The programme is embedded in the TRACE F/BEVAR PhD project led by Agnes Joensen and includes development and validation of the procedure-specific FEVA-RATE assessment tool with pass/fail standard setting, alongside systematic evaluation of learning curves and assessment methods.

INTERNATIONAL COURSE FACULTY AND EDUCATIONAL OUTREACH

In parallel with our Copenhagen-based programmes, the research unit is actively involved in delivering postgraduate courses and educational initiatives internationally. This includes workshops in vascular ultrasound and abdominal aortic aneurysm (AAA) repair at the Paris Vascular Insight Conference, contributing to the European Society for Vascular Surgery (ESVS) vascular ultrasound workshops in Barcelona, delivering ESVS hands-on ultrasound workshops in Belgrade, and participating as faculty in ESVS Academy workshops in connection with the ESVS annual meetings.



From Fellowship to Research Leadership: Pim van den Hoven's Journey to Copenhagen Vascular Research Unit and the PODO-MAP Project

On a cold December afternoon, I, Josephine from the research unit, bike from Rigshospitalet to the home of postdoc Pim van den Hoven, his wife Kim, and their two children. The couple greets me at the door, and I follow them into the living room where we all sit down at the dining table besides a Christmas tree. When Pim first came to Copenhagen in 2021 for a one month visit at Rigshospitalet, he did not know it would become the city where his career and family life would take root four years later. "I came from the Netherlands to Copenhagen for one month to work with fluorescence techniques which I did a PhD on," Pim recalls. The short stay sparked a connection with the Department of Vascular Surgery, leading to a six-month fellowship in 2023. "We really enjoyed our time here then. It felt easy being here with a kid, and we felt at home," Kim, who was on maternity leave with their first child during this time, explains.



Pim and his wife Kim in their Copenhagen Home.

A GRANT THAT CHANGED EVERYTHING

During his fellowship, Pim collaborated with colleagues on a grant application to the Novo Nordisk Foundation. "I decided to make it a big project together with fluorescence that I did my PhD on," he explains. In 2024, the grant was approved - a pivotal moment. "It was really exciting that we got that grant," Pim says. The Clinical Emerging Investigator Grant, worth 10 million kroner, funds the ambitious PODO-MAP Project, which aims to predict wound-healing outcomes in diabetic foot ulcers and reduce amputation risk.



There is a lack of evidence in wound healing. We hope to fill some of the gaps in diabetic foot ulcer management.



I experience a lot of freedom in research, and it's exciting to think about how we can move the field forward.

THE PODO-MAP PROJECT

"Diabetes-related foot ulcers are going to be one of the biggest challenges in vascular surgery in the future," Pim emphasizes. The study combines three techniques: duplex ultrasound, contrast-enhanced ultrasound, and indocyanine green (ICG) fluorescence to improve diagnosis and treatment of diabetic foot ulcers. "There is a lack of evidence in wound healing. We hope to fill some of the gaps in diabetic foot ulcer management." He sees the project as a step towards building a research group focused on perfusion techniques, which is an area where current clinical tools fall short. But leading such a large project comes with challenges. "You have to stick to regulations, coordinate workflows, and ensure data quality," Pim notes. "Sometimes I want to move faster than the system allows, but that's part of the process." The five-year project includes two PhDs, ten medical students, and a project nurse to ensure continuity. "It's a bit entrepreneurial," Pim says. "I experience a lot of freedom in research, and it's exciting to think about how we can move the field forward."

LIFE BEYOND THE OPERATING ROOM

Moving to Denmark wasn't without challenges. "The most difficult part was leaving the family in the Netherlands," Pim admits. Kim, who is also a doctor with a PhD, continues: "Housing and job hunting have also been hurdles. I didn't realize how hard it is to find a job when you don't speak the language." Despite the hurdles of moving abroad, the couple remains positive. "The work-life balance here is great, and we have more time together as a family", Kim notes, "Yea, and Denmark gave us a good vibe when we were here during my six-months fellowship" Pim adds. "Together with the research part, it made it a logical step to move here."

WHAT IS PODO-MAP?

Title: Improving outcome in patients with a diabetic foot ulcer (DFU) using multimodal assessment of foot perfusion and clinical registry

Research Scope: Optimize treatment strategies for patients with a DFU. One of the major gaps in current practice is the lack of a diagnostic tool to assess perfusion. Several modalities have proven potential for the assessment of perfusion, including advanced duplex ultrasound (A-DUS), contrast-enhanced ultrasound (CEUS) and near-infrared (NIR) fluorescence imaging with indocyanine green (ICG). The PODO-MAP project combines these three techniques in a multimodal perfusion assessment and investigates its value by conducting clinical studies in DFU patients.

Aim: Improving the diagnostic accuracy of assessing foot perfusion and improve the outcome of the surgical treatment. Ultimately, this leads to increased DFU healing rate, less amputations, and increased limb salvage.

PhD Theses from Copenhagen Vascular Research Unit

Kirstine Lindhard (MD),

Title: "Survival of the Arteriovenous Fistula"

Supervisors:

Assoc Prof Brian Lindegaard, Copenhagen University Hospital

Assoc Prof Ditte Hansen, Copenhagen University Hospital

Prof Boye L. Jensen, University Hospital of Southern Denmark

Henrik Post Hansen, Copenhagen University Hospital

Marianne Rix, Copenhagen University Hospital

James Heaf, University Hospital of Zealand

PhD examinations

Januar 2025. PHD examination in Turku, Vaiva Dabravolskaite.

Opponent Prof Timothy Resch, University of Copenhagen.

Juni 2025. PhD examination in Trondheim. Håvard Ulsaker.

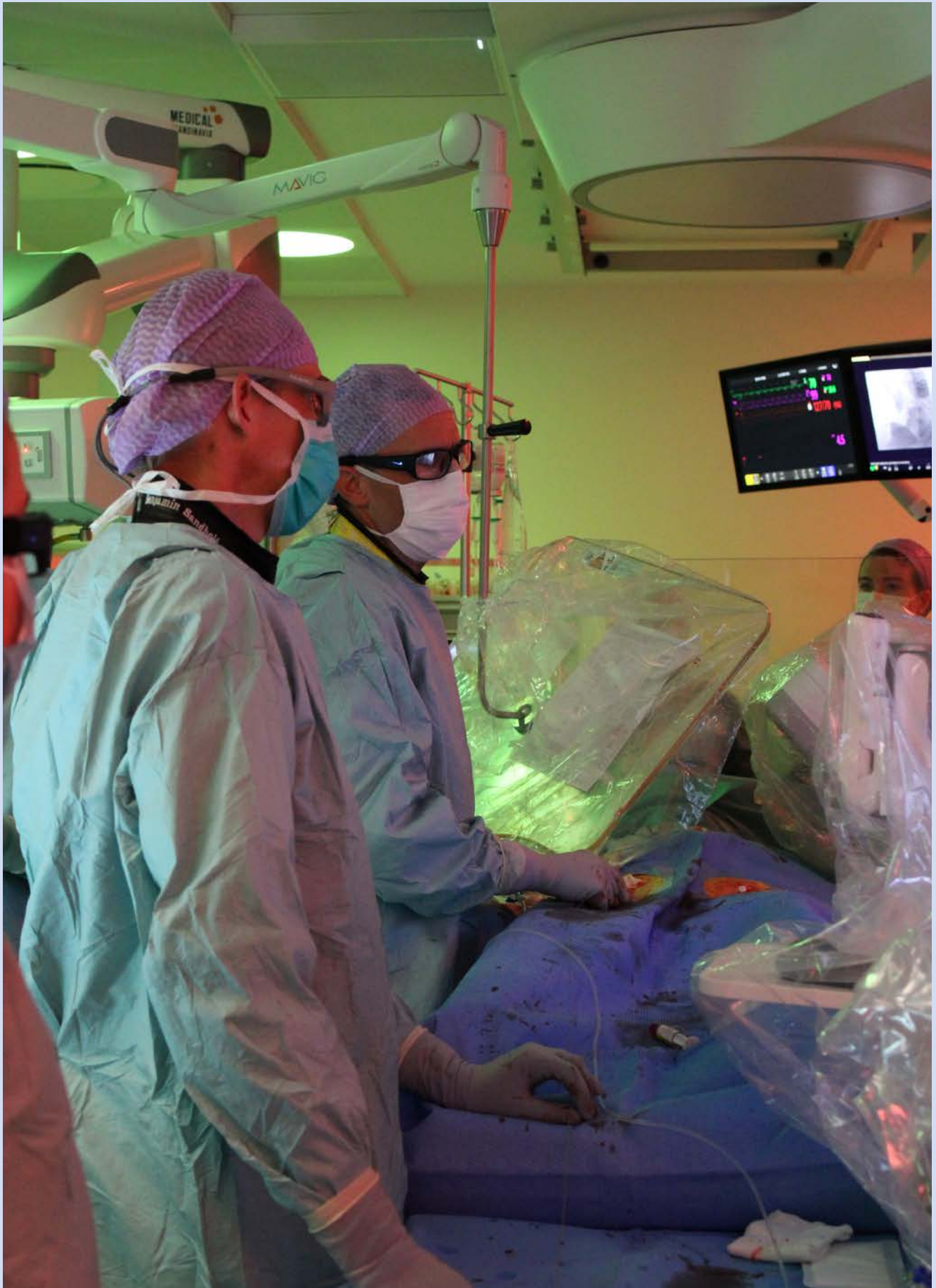
Opponent Prof Timothy Resch, University of Copenhagen.

Bachelor and Master's Theses

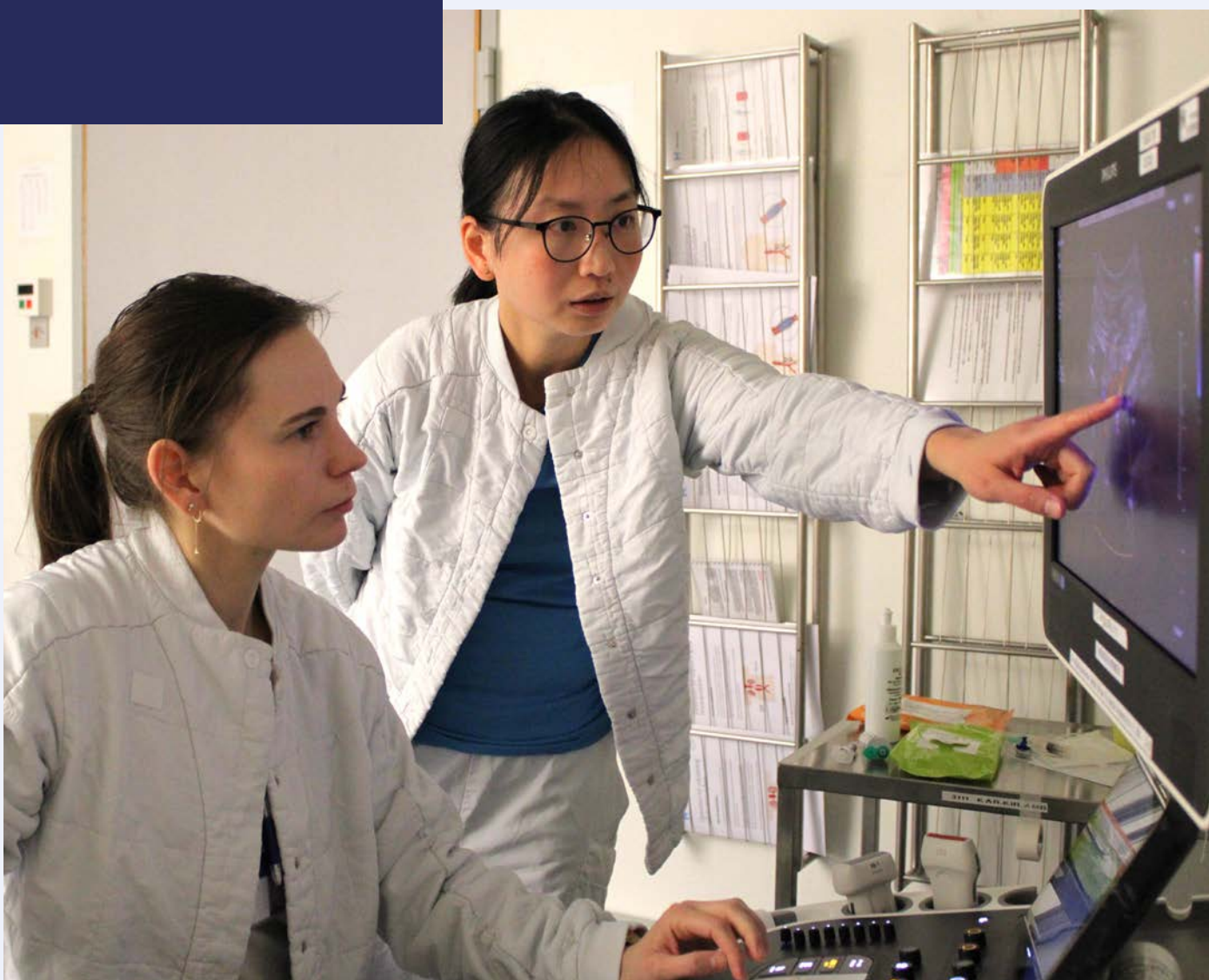
Issa Ghannoum (KA-medicine): Factors influencing strain patterns in abdominal aortic aneurysms. 2025, Supervisor: Jonas Eiberg

Nikolaj Linnet Kofoed (BA-medicine): Endovascular treatment of ruptured abdominal aortic aneurysm - Literature review and the experience of the Vascular Surgery department Rigshospitalet.

28.05.2025. Supervisor: Stevo Duvnjak



To Work as a Researcher



Sara Mørup performing an ultrasound scan together with sonographer Jing Wen Goh.

SARA MØRUP

MD and PhD Fellow

JOINING THE COPENHAGEN VASCULAR RESEARCH UNIT

Sara Mørup joined the Copenhagen Vascular Research Unit as a PhD fellow in August 2025.

Sara's passion for vascular surgery stems from its complexity and impact: "The surgeries are very interesting and professionally stimulating for me because of the great variety of anatomy and techniques. Furthermore, vascular surgery combines precision work with teamwork, and the work can translate into meaningful improvements for patients," she explains. The people, the teamwork, and the patients piqued her interest in investigating what lies behind the different vascular diseases.

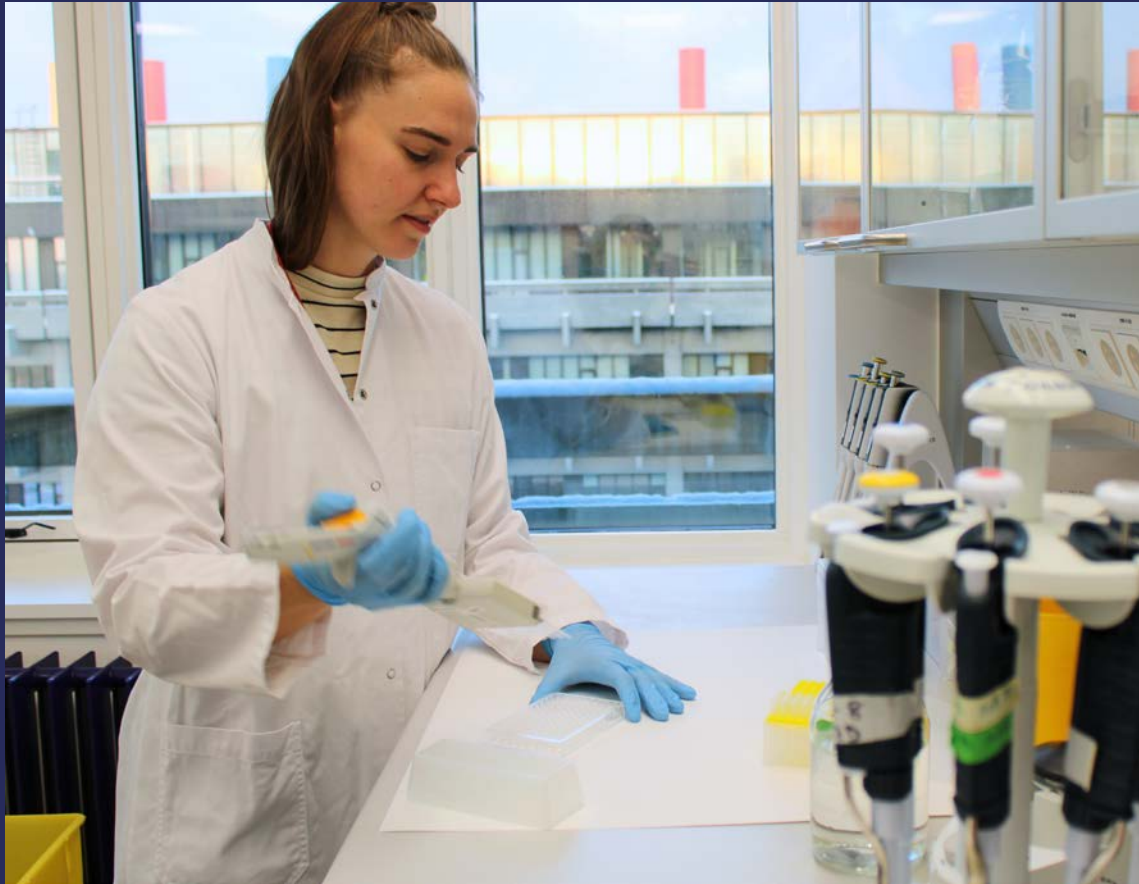
RESEARCH THAT MAKES A DIFFERENCE

Her PhD project, PRIMA (Proteomic Profiling, Advanced Imaging, and Outcome in Renal and Mesenteric Atherosclerosis), aims to bridge molecular biology with clinical outcomes. Embedded in two major randomised controlled trials, COMESS (Copenhagen Mesenteric Stent Study) and DAN-PTRA-II (Effects of Balloon Angioplasty of Atherosclerotic Renal Artery Stenosis), Sara's work integrates lesion- and blood-based proteomics, advanced imaging (including renal 3D ultrasound volumetry), and patient-reported outcomes. The aim is to improve understanding of disease mechanisms, refine risk stratification, and help identify which patients benefit most from endovascular interventions.

The project is highly collaborative and spans several clinical workflows, including study logistics, complex imaging techniques, regulatory processes, and structured recruitment and follow-up. What motivates Sara is the opportunity to connect detailed vessel biology with clinical decision-making so future interventions can be targeted to the patients most likely to benefit.

ADVICE FOR ASPIRING RESEARCHERS

When asked for advice for colleagues planning to go into research, Sara responds: "Anchor your project in a clear clinical need that you find inspiring. Build a supportive supervision team, agree on clear milestones, and make sure the practical framework around the project (data flows, roles, follow-up routines) is in place early."



SARA MARTHEDAL JØRGENSEN

M.Sc., PhD, postdoc

FROM BASIC SCIENCE TO TRANSLATIONAL RESEARCH

For Sara Marthedal Jørgensen, research has always been the goal. After earning her M.Sc. in Molecular Biomedicine at the University of Copenhagen, she completed a PhD on extracellular remodelling in atherosclerosis. Today, as a BRIDGE fellow (Translational Excellence Programme), she works at the intersection of basic science and clinical application. “During my PhD, I saw projects using patient tissue and data and realized how much closer that felt to making a real-world impact”, Sara explains. That realization led her to translational research, where she now combines her molecular expertise with clinical insights.

Sara’s current project focuses on human carotid artery plaques collected during surgery. Instead of discarding these tissues as biological waste, Sara cultures them *ex vivo*, creating a model that mirrors human atherosclerosis. “Plaques are incredibly complex,” she says. “By working with real patient tissue, we can study disease mechanisms and test potential therapies in a truly human context.”

CHALLENGES AND CREATIVITY IN RESEARCH

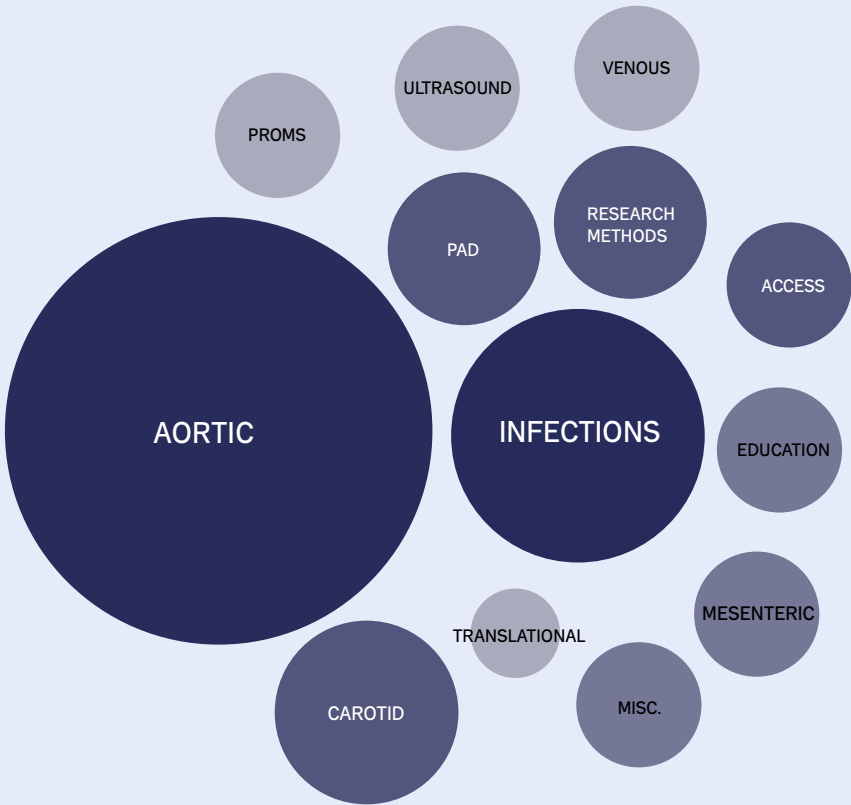
The work is demanding: Collecting plaques depends on planned carotid procedures in a busy clinical department, and maintaining the plaques in culture for weeks requires meticulous planning, even on weekends. Yet, Sara thrives on the challenge. “What surprised me most is how much room there is for creativity,” she notes. “Experiments do not always go as planned, protocols are not always perfect, and sometimes you have to think outside the box to find solutions that are not written in any manual.”

No two days look alike. Between BRIDGE courses, lab work, data analysis, and even programming a liquid-handling robot, Sara’s role is dynamic and evolving. What keeps her motivated? “Curiosity,” she says. “I stay motivated by the thought that my curiosity is helping uncover something new that could ultimately make a difference for patients.”

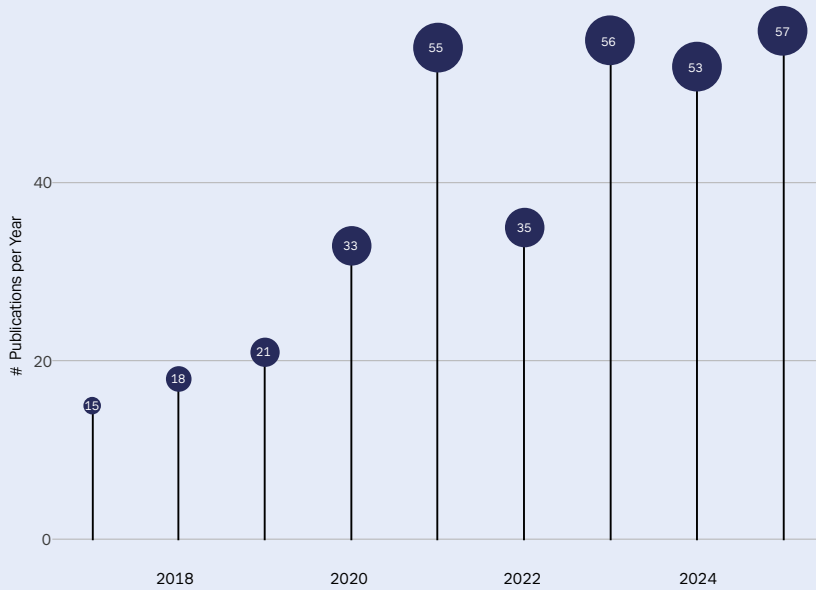


Research Areas

Below our research areas are illustrated based on our 2025 publications. This shows our unit's main research areas and the areas in which we could increase our focus in future studies.



Number of publications each year from 2017-2025



Scientific Publications 2025

1. Katsargyris A, Haulon S, Verhoeven ELG; Early Launch Participants (Abisi S, Saha P, Falkensammer J, Holden A, Kalder J, Kölbel T, Mees B, Pratesi G, **Resch T**, Ruffino MA, Tsilimparis N). Editor's Choice - Initial Experience with the BeFlared Bridging Covered Stent for Fenestrated Endovascular Aneurysm Repair. *Eur J Vasc Endovasc Surg.* 2025 Apr;69(4):651-652. doi: 10.1016/j.ejvs.2025.01.029. Epub 2025 Jan 21. PMID: 39848535.
2. Lejay A, **Sörelus K**. High Sensitivity C reactive Protein: A New Screening Tool for Abdominal Aortic Aneurysm? *Eur J Vasc Endovasc Surg.* 2025 Jan 24:S1078-5884(25)00070-X. doi: 10.1016/j.ejvs.2025.01.024. Epub ahead of print. PMID: 39864496.
3. Birrer DL, Widmer LW, Tanno L, Schneider R, Dirnberger A, Wilhelm A, Zingg U, Müller B, **Meuli L**, Kuemmerli C. Evaluation and testing of the proportional hazards assumption in analysis of time-to-event data in subgroup analysis of randomised controlled trials: a meta-epidemiological study. *Swiss Med Wkly.* 2025 Jan 15;155:4022. doi: 10.57187/s.4022. PMID: 39951391.
4. Bagge JD, **Eldrup N**, **Resch T**, **Eiberg J**. Akut underekstremitetsiskæmi [Acute limb ischaemia]. *Ugeskr Laeger.* 2025 Feb 10;187(7):V09240595. Danish. doi: 10.61409/V09240595. PMID: 40025885.
5. Holm LR, **Eiberg JP**, **Ghulam QM**, **Zielinski AH**, **Skov RAC**, On Behalf Of The Coach Research Collaborative. Serum Creatinine Level in Relation to Intraluminal Thrombus and Abdominal Aortic Aneurysm Size. *J Clin Med.* 2025 Feb 14;14(4):1258. doi: 10.3390/jcm14041258. PMID: 40004788; PMCID: PMC11856361.
6. **Meuli L**, Zimmermann A. Absence of Proof is Not Proof of Absence: A Cautious Interpretation of the Transfemoral Retrograde Approach for Branched Endovascular Aneurysm Repair. *Eur J Vasc Endovasc Surg.* 2025 Feb 26:S1078-5884(25)00172-8. doi: 10.1016/j.ejvs.2025.02.038. Epub ahead of print. PMID: 40021114.
7. Vacirca A, Mesnard T, Huang Y, Mendes BC, Jakimowicz T, Schneider DB, Haulon S, Sobocinski J, Beck AW, Schanzer A, Farber MA, Timaran C, Kahlberg A, Kölbel T, Gasper WJ, Mees BME, Gargiulo M, Dias NV, Woongchae AL, Sweet MP, Mani K, Eagleton M, Pedro LM, Verhagen H, Yeung KK, Tsilimparis N, **Resch T**, Bertoglio L, Ferreira E, Khashram M, Sulzer T, Dias-Neto M, Tenorio ER, Kanamori LR, Jama K, Parodi E, Gomes V, Colon JP, Chiesa R, Panuccio G, Schurink GW, Lemmens C, Gallitto E, Faggioli G, Karelis A, Wanhainen A, Habib M, Gouveia E Melo R, Kappe KO, Mariko van Knippenberg SE, Tran B, Crawford S, **Panagrosso M**, Melloni A, Bonardelli S, Garcia R, Ribeiro T, Gormley S, Maximus S, Oderich GS; International Multicenter Aortic Research Group. Predictors of failure to rescue after fenestrated-branched endovascular aortic repair of thoracoabdominal aortic aneurysms. *J Vasc Surg.* 2025 Mar 5:S0741-5214(25)00358-1. doi: 10.1016/j.jvs.2025.02.032. Epub ahead of print. PMID: 40054790.
8. Zimmermann A, **Meuli L**. Endovascular Therapy for Acute Type A Dissection: Are We Already There? *Eur J Vasc Endovasc Surg.* 2025 Mar 7:S1078-5884(25)00228-X. doi: 10.1016/j.ejvs.2025.02.055. Epub ahead of print. PMID: 40057300.
9. Lindhard K, Jarløv JO, **Pedersen BL**. Karadgange hos patienter i hæmodialyse [Vascular access in patients on haemodialysis]. *Ugeskr Laeger.* 2025 Mar 24;187(13):V04240274. Danish. doi: 10.61409/V04240274. PMID: 40152169.

10. **Meuli L**, Zimmermann A, Petersen JK, Fosbøl EL, Dabravolskaitė V, Makaloski V, **Eiberg JP**, Køber LV, **Resch TA**. Risk Stratification and Treatment Selection in Patients With Asymptomatic Abdominal Aortic Aneurysms. *JAMA Netw Open*. 2025 Apr 1;8(4):e253559. doi: 10.1001/jamanetworkopen.2025.3559. PMID: 40193076; PMCID: PMC11976495.
11. **Mørup S**, Kristensen KL, **Strøm M**. Rupture of Abdominal Aortic Aneurysm due to *Listeria Monocytogenes* infection. *BMJ Case Rep*. 2025 Apr 1;18(4):e263531. doi: 10.1136/bcr-2024-263531. PMID: 40169257.
12. **Resch TA**. If You're Not on the Inside, You're on the Outside: Navigating Target Vessels and Limited Information in a Complex World. *Eur J Vasc Endovasc Surg*. 2025 Apr 4:S1078-5884(25)00272-2. doi: 10.1016/j.ejvs.2025.03.037. Epub ahead of print. PMID: 40188863.
13. Dahl M, Lindholt JS, Budtz-Lilly J, **Eiberg JP**, Houliand KC, Petersen CN, Shahidi S, Borregaard B. Self-reported outcomes following lower extremity, carotid and aortic artery disease: protocol for the Danish Vascular (DanVasc) survey. *BMJ Open*. 2025 May 2;15(5):e092479. doi: 10.1136/bmjopen-2024-092479. PMID: 40316344; PMCID: PMC12049875.
14. Saers S, Srinanthalogan R, Ohrlander T, Strömberg S, **Resch TA**, Budtz-Lilly J, Lind RC. Initial experience and results of a single-branched TEVAR system in Scandinavia. *J Cardiovasc Surg (Torino)*. 2025 May 28. doi: 10.23736/S0021-9509.25.13330-2. Epub ahead of print. PMID: 40433736.
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BOOKS & BOOK CHAPTERS

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Evening view from 16th floor and the Copenhagen Vascular Research Unit

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