DEPARTMENT OF SURGERY
ZEALAND UNIVERSITY HOSPITAL

CENTER FOR SURGICAL SCIENCE

ANNUAL REPORT 2023

CENTER FOR SURGICAL SCIENCE

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ZEALAND UNIVERSITY HOSPITAL

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A WORD FROM THE PROFESSOR

2023 was a very important year for our research, where we succeeded in several major areas.

We started the year by implementing AI driven prediction models in stratifying patients undergoing colorectal cancer surgery. After including 200 patients in these trajectories, we are happy to see that we are improving patient outcomes! In order to succeed in this, there has been a fantastic multi-disciplinary team effort both within CSS but also with our collaborators within the hospital. These results have stimulated us and provided a stronger focus for how to continue this improvement in patient care and how to expand it to other regions in Denmark.

Parallel to this there have been several excellent research efforts finalising a multi-centre study in oncology where we based on the preliminary results, expect that the study will leed to a subsequent revolutionizing of the treatment of these patients. Thus, it seems that we in 2024 will be introducing non-operative management in a subgroup of patients with colon cancer.

Several strong proof of concept studies have been initiated and we are looking forward to interpret the results from these studies in 2024. This may leed to interesting combination treatments before surgery in colorectal cancer. The success of the team is through common efforts and knowledge sharing within the group, and inspiring and getting inspired with a large network of collaborators both nationally and internationally. These collaborations will be strengthened in 2024 as we are embarking on larger scale collaborations with research groups having a high expertise in translational and clinical sciences.

The teams are getting stronger within CSS, and we are expanding our understanding of biology of cancer with the excellent work from the CSS wet laboratory and due to major funding obtained in 2023, we have established a strong core of data scientists and wet laboratory scientists, who will carry the innovations for the upcoming years.

In 2024, we will also have a larger focus on the research within emergency surgery, a field with a huge unmet need for improving outcomes through innovations and understandings of perioperative pathophysiology. Thus, it is with great humbleness and satisfaction that I look back at 2023 and feel extremely grateful for the amazing team of researchers at CSS.
2024 will definitely be a year for us to console-date and expand our innovative approaches for improving patient care and I look so much forward to this.

ISMAIL GÖGENUR

MESSAGE FROM HEAD OF THE DEPARTMENT

Center for Surgical Science is the research unit of the Surgical Department, and a vital part of the department both in terms of profiling and development. CSS works to develop and improve diagnosis, treatment, and the lives of our patients and their relatives, which is an indispensable factor and a necessity in a department where ambitions are high, and where we strive for excellence. Through research results and innovation, CSS puts Zealand University Hospital (ZUH), Slagelse Hospital and the Region of Zealand on the map, both national and international.

CSS is characterized by many disciplines and individuals, who collectively demonstrate that collaboration can produce results in the most magnificent way!

In 2023, we have seen amazing results in personalized medicine, cutting-edge laboratory work, and many impressive clinical studies.

Under the auspices of CSS in 2023, we established another professorship and a lecturer position in clinical nursing. Thus, we have ensured that the future of research in the Surgical Department looks bright by expanding the potential, and we can confidently look forward to several new results benefiting our patients in 2024.

We are very impressed by the entire team at CSS for setting the research bar so high, thus serving as an inspiration to us colleagues both at ZUH and around the world. We look forward to continuing our close collaboration in 2024.

To the reader of this annual report, we encourage leaning back and being impressed and inspired by the results of this research unit in 2023.

Happy reading!

OLE TOFTDAHL SØRENSEN & LASSE BREMHOLM
HEAD OF DEPARTMENT FOR SURGERY, ZEALAND UNIVERSITY HOSPITAL

ABOUT US

Center for Surgical Science (CSS), the Research unit at Department of Surgery, Zealand University Hospital (ZUH) is founded and led by Professor, Consultant Ismail Gögenur, and consists of more than 40 researchers, mostly medical doctors and medical students, but also molecular biologists, pathologists, data scientists, bioinformaticians, data engineers, nurses and physiotherapists.

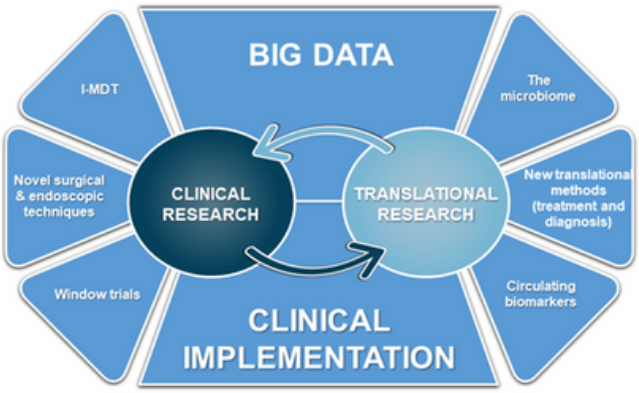
Our research

The research is divided into 3 focus areas: Translational research, clinical outcome and Big Data & Personalized Medicine. Within translational research, we aim to bridge the gap between scientific translational discoveries and patient care in the field of malign and benign surgery and perioperative medicine. Our main focus is the pathophysiology of peri-operative stress and the modulation of potential stressors within colorectal surgery.

"Our goal is to realize the vision of stress-free surgery"

Research within clinical outcome involves positive/negative effects of diagnostics, treatment, pathology and physiology, and seeks to measure changes in health, mortality, quality of life etc. The Big data & Personalized Medicine (PM) group uses data from Danish registries in combination with translational data from proof-of-concept clinical studies performed in CSS and artificial intelligence to generate models to predict patient outcome leading to improved diagnoses, prognoses, and treatments

In January 2018, Ismail Gögenur created the Enhanced Perioperative Oncological Consortium (EPeOnc) at ZUH with the aim to combine principles of optimized surgical, anesthesiological and oncological treatments in order to improve short- and long-term outcome of patients undergoing cancer surgery. As a natural extension, the CAG-POS (Clinical Academic Group – Personalized Oncological Surgery) was established in June 2019. The aim of the CAG-POS is to use PM and artificial intelligence (AI) to develop, validate and implement prediction models based on Danish register data. Consequently, on February 1, 2023, the first model was implemented at Department of Surgery, ZUH, as an evidence-based decision-support tool to stratify patients with CRC into four risk profiles based on their predicted 1-year mortality.



Overview of the CAG-POS collaboration model

In January 2021, Professor Gögenur established a patient-near research laboratory at ZUH aiming at performing pre-analytical and analytical analyses on tissue and blood samples collected from patients in the perioperative trajectory. The goal is to enrich the model with biological data generated in our highly specialized research laboratory. Thus, a model with both clinical and translational data, will lead to a more precise tailoring of the right treatment at the right time to the right patient and thereby preventing complications and recurrence after surgery leading to improved patient survival.

Further funding from Novo Nordisk Foundation and Intereg ØKS have made it possible to further develop on the prediction models as well as to make collaboration across Nordic Countries concerning federated learning,

THE LABORATORY

In 2023, we have consolidated the expertise in the CSS wet laboratory. To support the current employees, we have employed Ph.D. Lasse Andersson Kvich as a post doc and we will be further expanding in 2024.

In the research laboratory, the focus is on core tissue and blood-based methodologies that can provide the best possible data to phenotype the tumor-related and patient-specific systemic immune profile.

The vision

Using blood and tissue patient samples, cell models and detailed transcriptional and histological analyses are being developed and performed to investigate immune activation, the presence of certain microbiota and systemic markers of immune dysfunction. The vision is to generate a knowledge platform of translational research results and to implement the generated data into the AI-based risk prediction model. Currently, the model is built on Danish register- and clinical data from patients diagnosed with CRC from 2011-19, but the aim is also to integrate translational data generated in the research laboratory. Extending the model will make it even more precise in predicting one year mortality.

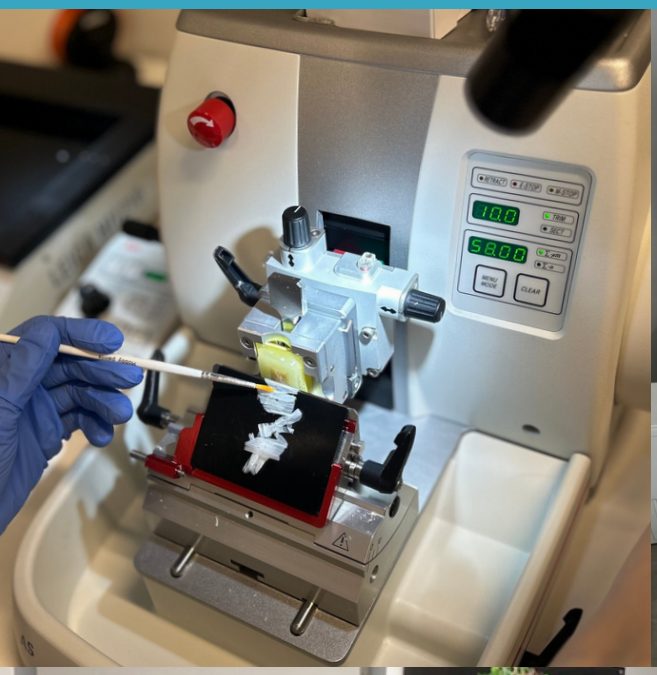
The lab equipment

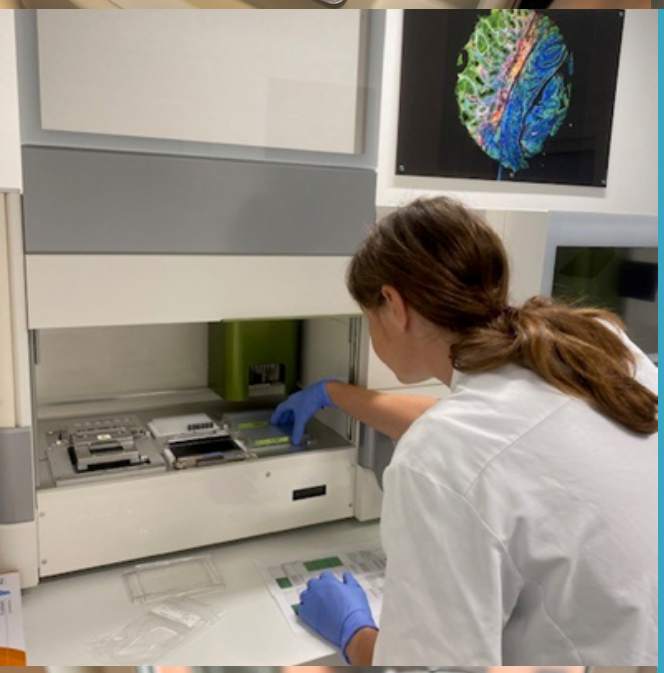
In the research core lab facility, cell culture facilities were established aiming at developing patient-specific mini-umours, so-called patient derived organoids (PDOs), by stimulating biopsies collected from CRC patients.
These PDOs completely mimics the patient's tumor and can therefore be used to explore tumor characteristics including tumor microenvironment, screening for response to different chemotherapeutical regimes, aiming at identifying the optimal treatment.

We use the nCounter MAX Analysis System from NanoString to detect transcription levels of up to 800 different genes in both blood- and tissue patient samples.

Comparing analyses of samples collected before and after surgery or a specific treatment, gives us the opportunity to detect possible induced changes. The tumour is heterogeneous and can consist of different cell types. It is therefore important to investigate different areas of the tumor. Using the GeoMx instrument, we can make immunohistochemistry-based multistaining spatial profiling on up to 20 different areas in each tumor and assess mucosa-associated microbiome on the GeoMx spatial profiler, Thereby we can compare e.g. normal and tumor tissue to get insight into the differences.

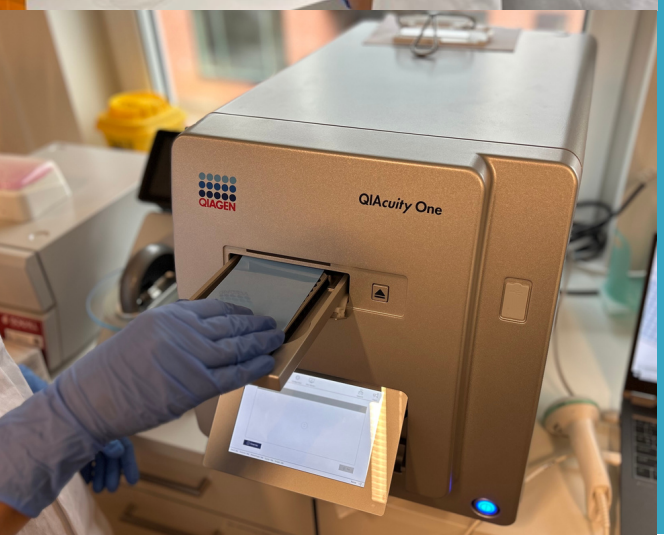
As a supplement to both the Nanostring analyses and the organoids, we can perform immunohistochemicalstainings and FISH analysis on collected tumor tissue. We can then visualise the localization of specific biomarkers predictive for treatment response, or visualize the infiltrated immune cells in the tumor.





1000+

Samples a year



14

Different types of analyses on blood and tissue samples are possible to do in the research laboratory

DATA SCIENCE

"Our mission is to create scalable data driven solutions for the benefit of cancer patients"

The Data Science team currently has a lot of momentum and is growing in both size and level of expertise.

In June 2023 Martin Høyer Rose was hired as the new Chief Data Scientist, followed by Senior Project Manager Ilja Lang in October.

We ended 2023 by hiring two highly qualified Senior Data Scientists, Christopher Strømblad and Samuel Wiqvist, who has entered the team in the beginning of 2024.

Read on for a further look into our Data Science projects.

The Florence Project
Time period: Dec 2022 to Nov 2025

In the EU funded project *Florence,* surgeons, data scientist, and researchers are working closely together on how to create data-driven value in the clinic.

The project aims at leveraging federated learning to develop prediction models that in a data privacy aware way incorporates data across Nordic countries (Denmark and Norway).

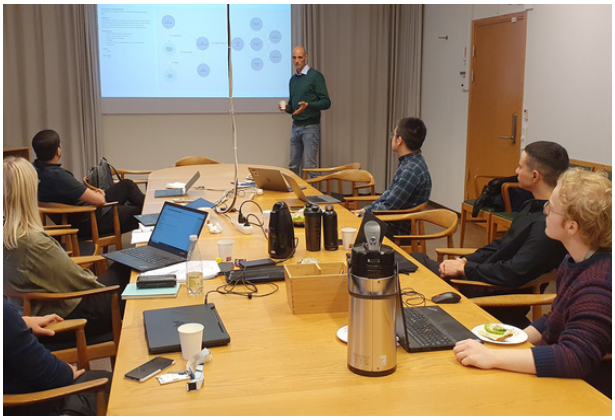
Chief Data Scientist, Martin Høyer Rose and Chief Surgeon, Jens Ravn Eriksen discussing in one of the FLORENCE meetings.

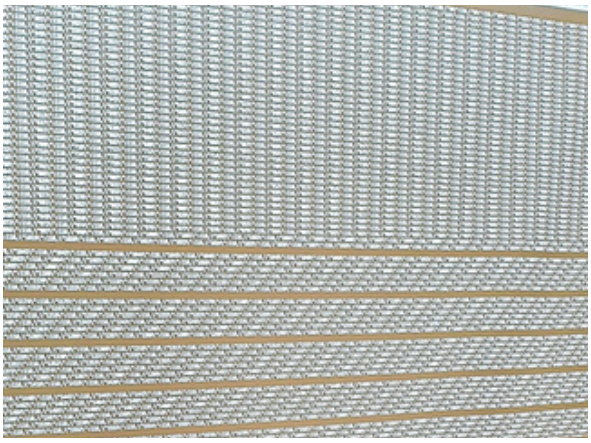
Florence is an international project which engages clinicians, data scientists, and researchers (among others) from Norway, Sweden, Denmark and the Netherlands. The project is funded by Interreg.

The Unite project
Time period: Jan 2022 - Jan 2026

Project UNITE is about developing infrastructure by integrating data from multiple Danish health registry data,population health study data and omics data (genomics and transcriptomics) into a standardized Observational Medical Outcomes Partnership (OMOP) Common Data Model. A core part of this project is the gathering of transcriptomics data and integrating it into the OMOP platform with the intent of leveraging the data for predictive modelling efforts. Furthermore we are developing an API for the Danish e-health platform (Sundhedsplatformen).

In 2023, we have redesigned our private cloud infra-structure and developed a container-based setup, which enable us to customize and optimize our data science development environment.


Collaboration meeting


Part of the Data Science coding language

The project is funded by the Novo Nordisk foundation and is a collaboration with Computerome (DTU).

The AIDSurg I project
Time period: Feb. 2023 - ongoing

The past year CSS has managed to implement and run an AI solution as part of the clinical practice in the surgical department at Zealand University Hospital (ZUH) in Køge.

This data driven personalized approach for optimizing patient care for patients undergoing cancer surgery has brought attention from both researchers, patients, journalists and politicians.

We are awaiting results from the AidSurg study, but it looks promising. Read more about this project in the independent section dedicated to the AIDSurg project.

AID-SURG I

One of the milestones achieved in 2023 was the implementation of the AI-based tailored perioperative care in a clinical setting.

The project also elucidates Center For Surgical Sciences development over the past years, encompassing data science, interdisciplinary collaboration, and, importantly, engagement with clinicians and patients.

Since February 2023, all patients diagnosed with new colorectal cancer (CRC) scheduled for surgery at the Department of Surgery, Zealand University Hospital (ZUH), are stratified based on their individual risk and subsequently assigned to individualized, evidence-based perioperative treatment trajectories.

The AI-model utilizes standardized and harmonized data from national registries to predict the individual risk of 1-year mortality, serving as an indicator for treatment quality and exhibiting a correlation with postoperative complications.

Individualized treatment trajectories include a set of interventions such as physiotherapy, correction of anemia and nutrient deficiencies, comprehensive geriatric assessment, perioperative anesthesiological management, a tailored enhanced recovery protocol with repeated screening for early postoperative events, and personalized post-discharge care.
During the past year, the implementation process at ZUH Surgical Department has incorporated valuable experience and adjustments to workflow and standards of care.

"AID-SURG stands for AI-baseD tailored periopeative care in colorectal cancer SURGery"

Coupled with innovative efforts in the implementation of the AI-based decision tool in the clinical practice, have garnered public attention.

Physical training is a big part of the AID-SURG project

Danish Health Minister, Sophie Løhde, on a visit at ZUH Køge along with Speaker of the Danish Parliament, Søren Gade

We are delighted to have had the opportunity to host a meeting with the Danish Health Minister, sharing experiences in cancer care and expressing our vision for future perspectives in the Danish healthcare system. Nevertheless, we greatly value the positive feedback we have received from our patients.
Implementation and maintenance of the *AID-SURG* could not be possible without the dedicated clinical team, including secretaries, nurses, colorectal surgeons, and collaborative partners in various specialties. Their efforts have been crucial in ensuring that state-of-the-art colorectal cancer treatment is a routine practice at the Department of Surgery, ZUH.

We eagerly anticipate the upcoming year when we expect to gather data from the AID-SURG project for final analysis.

We are delighted to announce that AID-SURG has encouraged us to expand AI-based tailored perioperative care into a multicenter nationwide project involving seven colorectal centers in Denmark. The national project, *AIDPRO-CRC*, has already been initiated, and we expect its implementation in clinical practice during 2024.

CLINICAL STUDIES

In this section, you can get a status on all of our ongoing and finalized clinical studies from 2023, described by the clinician in charge. Several of our researchers have more than one study. In these cases we have chosen to highlight their most important one.

Title: Organ SPARring surgery vs. standard resection for early stage COLon cancer in elderly frail patients. The SparCol study.
PI/Investigator: Ismail Gögenur/Ilze Ose
Aim: The primary aim of this randomized clinical trial (RCT) is to investigate if we can improve the quality of recovery and reduce the risk of complications in elderly frail patients with small colon cancers with an organ preserving approach (CELS) compared with standard surgery
Status: Recruiting since april 2023. 6 out of 48 patients are included.

Title: Preoperative endoscopic treatment with fosfomycin and metronidazole in patients with right-sided colon cancer and colon adenoma: a clinical proof-of-concept intervention study (MEFO trial)
PI/Investigator: Astrid Louise Bjørn Bennedsen
Aim: The aim of this study is to investigate the effect of local antibiotic treatment with fosfomycin and metronidazole on tumor characteristics and the colonic biofilm in patients with right-sided colon cancer or right-sided colon adenomas.
Status: Currently the last laboratory analyses are being conducted. Patient inclusion was finialized in 2022, and the last patients last follow was in the summer of 2023.

Title: Intraperitoneal treatment with fosfomycin, metronidazole and recombinant human granulocyte-macrophage colony-stimulating factor in patients with multiquadrant peritonitis undergoing abdominal surgery.
PI/Investigator: Mia Sørensen.
Aim: To investigate if intraperitoneally administration of either the combination of granulocyte-macrophage colony-stimulating factor (GM-CSF) together with fosfomycin, and metronidazole or intraperitoneally administration of the combination of fosfomycin and metronidazole can improve the postoperative course for patients with multiquadrant peritonitis undergoing surgery.
Status: Protocol ready.

Title: Myeloid-derived suppressor cells in the peripheral blood and the spatial distribution in tumour tissue of patients with colorectal cancer
PI/Investigator: Hans Raskov
Aim: Tumor-secreted factors cause immunosuppression by driving alternatively activated, protumorigenic immune cells (MDSCs) to move from the bone marrow to the circulation, promoting disese progression and negatively affecting treatment responses. Using a novel flowcytometry analysis, we have identified and quantified three classes of MDSCs in CRC, and confirmed their immuno-suppressive capacity. Moving forward, we will investigate the MDSC spatial distribution in the TME to better understand tumor cell immune evasion and the impact on treatment outcomes.
Status: We are finalizing blood collection and performing the flow cytometry on 25 CRC patients. Q1-2 data analysis will be performed by our collaborators at DTU and Q2-3 GeoMx analyses on 25 tumours will take place at the research lab at CSS.

Title: Efficacy of immunotherapy in patients with MMR-deficient localized colon cancer scheduled for curative surgery - A prospective, phase II study
PI/Investigator: Tobias Justesen, Ismail Gögenur
Aim: The trial is designed as an investigator-initiated, multicenter, prospective, single arm phase II study in patients with stage I–III dMMR colon cancer scheduled for intended curative surgery to determine the efficacy of immunotherapy using pembrolizumab in the neoadjuvant setting.
Status: Ongoing. Included all of the 85 planned patients. Data analysis is ongoing.

Title: Adenoma Detection Rate in Artificial Intelligence-assisted Colonoscopy Performed by Endoscopists with Different Levels of Experience – A Cluster Randomized Controlled Multicenter Trial
PI/Investigator: Ronja Lagström
Aim: We aim to evaluate the impact of AI-assisted colonoscopy on adenoma detection rate (ADR), to see if AI can reduce the performance variability among endoscopists and increase ADR in a Danish population.
Status: All patients are included, manuscript is in progress

Title: Supporting colorectal cancer treatment planning using machine-learning models in multidisciplinary care conferences (working title)
PI/Investigator: Karoline Bendix Bräuner
Aim: The aim of this study is to assess and understand the changes in treatment decisions by the colorectal cancer multidisciplinary team when using or not using machine-learning models as decision support, specifically in use of neoadjuvant treatment, prehabilitation, and choosing no surgery at all
Status: Inclusion set to begin in Q2

Title: long-term complications and health related costs following bariatric surgery - a nationwide register-based cohort study
PI: Johanne Gormsen
Aim: Evaluation of long-term outcomes after laparoscopic gastric bypass and sleeve gastrectomy in a large and nationwide cohort, including assessment of long-term complications, socioeconomic outcomes and health-related costs
Status: Data analyses ongoing

Title: Predicting patient trajectories in oncological surgery
PI/Investigator: Puck Quarles van Ufford, Ole Lund (DTU), Lars Rønn Olsen (DTU), Ismail Gögenur, Martin Høyer Rose
Aim: I will write three papers on the following topics in the next three years:

1. Predicting CRC recurrence with NanoString data and phenotypic data.
2. Predicting surgical complications with genotyping data.
3. Expansion of project one, exploring additional data types (bacterial, immune, etc.).

Status: I am currently working on implementing data for the first paper and will focus on this research for the following months.

Title: Combining intratumoral flu vaccine treatment with pembrolizumab in patients with colorectal cancer: A phase 2 clinical trial (FLU-IMMUNE trial)
PI/Investigator: Ismail Gögenur, Adile Orhan Hodzic, Mikail Gögenur
Aim: Investigate if the combination of intratumoral flu vaccine and the immunotherapy pembrolizumab results in cancer cell death in patients with pMMR colorectal cancer
Status: Actively including, no patients yet

Title: Differential impact of 30-day postoperative infections on one-year mortality in 859,766 individuals undergoing gastrointestinal surgery
PI/Investigator: Doruk Orgun
Aim: The aim of this study is to assess and understand the changes in treatment decisions by the colorectal cancer multidisciplinary team when using or not using machine-learning models as decision support, specifically in use of neoadjuvant treatment, prehabilitation, and choosing no surgery at all
Status: Inclusion set to begin in Q2 2024

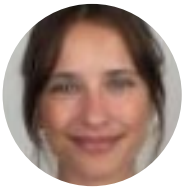
Title: Per oral versus Intravenous Postoperative Antibiotics after surgery for complicated appendicitis: A Cluster Randomized Cluster Crossover Non-Inferiority Study
PI: Ahmed Abdirahman Mohamud
Aim: To test whether a three-day postoperative course of per oral antibiotics is non-inferior to a three-day postoperative course of intravenous antibiotics as standard care after laparoscopic surgery for complicated appendicitis in regards to the risk of postoperative intraabdominal abscess formation within
Status: Data analyses ongoing

Title: The impact of electroporation with Bleomycine and with Calcium have an impact on tumor immunology in advanced and early rectosigmoid cancer
PI/Investigator: Loan Tuyet Ngo-Stuyt, Mikail Gögenur, Rasmus Vogelsang
Aim: To test treatment with electroporation preceeded by iv Bleomycine or Calcium intratumorally have a positive impact on tumor biology in advanced rectal and early rectosigmoid cancer
Status: Clinical study finalized, translational analysis finalized Q2 2024

Title: Endoscopic application of GM-CSF, Fosfomycin and Metronidazole in pouchitis, a phase I safety and proof-of-concept study
PI/Investigator: Viviane Lin
Aim: To test the safety of a single dose of 50 µg GM-CSF, 400 mg fosfomycin and 100 mg metronidazole locally applied in patients with pouchitis in a phase 1 trial and assess disease activity as well as changes in gene expression levels and the microbiome for pathophysiological treatment mechanism insights
Status: Clinical study finalized, translational analysis finalized Q1, 2024

Title: Eksploration protocol: In vitro studies for improvement and development of methods to investigate gastrointestinal diseases.
P**I/Investigator:** Ismail Gögenur
Aim: The aim is to characterise disease development in correlation to cellular, molecular and bacterial factors. As part of this aim, we have established biobank material from organoids, blood, and tissue from patients with and without cancer**.**
Status: We have established organoids from 24 patients and stored them for future experiments. Additionally, we are implementing a new organoid model, the air-liquid interface (ALI) model, which we expect will preserve the patient's immune cells and can be used to validate immunotherapy treatments. Currently, we have established ALI organoids from 5 patients. Our biobank also includes blood samples from 467 patients with and without cancer, single-cell suspensions from 29 patients with cancer. We are excited to dive into the data behind multiple analyses underway in the wet lab, where we are currently awaiting results for Legendplex, NanoString, and Trimeth.

Title: Characterizing patients with generalized secondary peritonitis undergoing major emergency abdominal surgery.
PI/Investigator: Maria Olausson
Aim: We wish to identify and characterize the most critical and ill patient population within major emergency abdominal surgery, both on short- and long-term, and explore deeper into the mechanism of the surgical stress response and the cellular response of pre-diagnosed cancer within the population and bring new knowledge to the field.
Status: The first study: “High risk of short-term mortality and postoperative complications in patients with generalized peritonitis undergoing major emergency abdominal surgery - a cohort study" has been sent to submittion and is undergoing peer-review.
The second: data collection
The third study: preparing blood samples for analysis
The fourth study: protocols stage.



Title: Heart rate variability and recovery after same day surgery
PI/Investigator: Emma Rosenkrantz Hölmich
Aim: We aim to map the neuroinflammatory changes related to hernia surgery and investigate whether they are associated with clinical recovery.
Status: Protocol/planning phase.

Title: Bacterial Impact on Tumor Microenvironment in Patients with Colorectal Cancer
PI/Investigator: Ismail Gögenur, Thomas Bjarnsholt, Lasse Kvich
Aim: To investigate how the gut microbiota influenced the tumour microenvironment in patients with colorectal cancer (CRC). Specifically addressing the influence of the two CRC core pathogens, Fusobacterium nucleatum and Bacteroides fragilis. The primary analyses used were dual RNA sequencing to explore the transcriptional profiling of human cells and bacteria and fluorescence in situ hybridization to study the in situ bio-geography of bacteria in the tissue. Findings were compared to paired normal tissue from patients with CRC and healthy tissue from patients with no observed gastrointestinal complications.
Status: Finalized in March 2023

Title: The IPOS trial: Effect of low-dose interferon-alfa2a on peri operative immune suppression.
Investigator: Helin Yikilmaz Pardes
Aim: The study is a randomized double-blinded placebo-controlled phase 2 study. We aim to determine the efficacy of preoperative treatment with interferon-alfa2a in patients with pMMR colon cancer on perioperative immune suppression and tumorinfiltrating lymphocytes in the primary tumor.
Status: We have included 19 out of 68 patients.

Title: Myocardial injury and long-term oncological outcomes in patients undergoing surgery for colorectal cancer
PI/Investigator: Jawad Ahmad Zahid
Aim: To investigate the association between MINS during the first seven days after surgery for colorectal cancer and long-term all-cause mortality, recurrence, and disease-free survival in an ERAS setting
Status: Published 2023 in International Journal of Colorectal Disease

Title: Single cell representation of the tumor microenvironment in patients with dMMR colon cancer undergoing neoadjuvant immune therapy
PI: Lukas Balsevicius, Camilla Qvortrup, Ismail Gögenur
Aim: To investigate if there are any single cell tumor epithelial or immune cell markers that may have a value for predicting complete pathological response in patients receiving neoadjuvant pembrolizumab.
Status: Clinical study finalized, translational analyses finalized in Q3, 2024

Title: Use of Combined endoscopic laparoscopic resection in advanced adenomas and early colon cancers
PI/Investigator: Mustafa Bulut
Aim: To describe in a consecutive group of more than 200 patients the results of minimally invasive techniques in advanced colon adenomas and early colorectal lesions
Status: Clinical study ongoing. First report in Q3 2024

Title: The IMPULS trial: Examining the impact of propranolol on preoperative anxiety in patients with pancreatic ductal adenocarcinomas: a randomized, triple-blinded, placebo controlled pilot trial
PI/Investigator: Adile Orhan
Aim: The study is a randomized double-blinded placebo-controlled phase 2 study. We aim to determine the efficacy of preoperative treatment with propranolol in patients with pancreatic cancer on perioperative immune suppression and tumorinfiltrating lymphocytes in the primary tumor with a special emphasis on the intratumoral nerves
Status: The study is in collaboration with Rigshospitalet and will be starting to include patients in Q1 2024

THE NURSES STUDIES

In this section, you can get a look into the work and studies from our research nurses

Marian Petersen, Associate Professor, DM.Sc., CNS

Project title: ANIS – ANal Incontinence and Sexuality
Aim and background: The prevalence of anal incontinence, defined as the inability to hold air and/or stool, is internationally estimated to be somewhere between 2% and 18% of the population. Regardless of the underlying cause of anal incontinence, there are challenges for the individual in terms of quality of life and the ability to function in a social context of their own choosing. Social gatherings can be experienced as unmanageable and therefore opted out, just as the radius of movement from home can be limited becaus of anal incontinence and thus negatively affect the quality of life. Sexuality, which is a known parameter in relation to the experience of quality of life, can also be negatively affected.

The study is a prospective comparative mixed methods study. The aim is to investigate the patients' experience of living with anal incontinence and how this affects their quality of life, autonomy and sexuality, before and after the theme of sexuality is part of the existing patient school. Data collection is expected to be completed at the end of 2025.

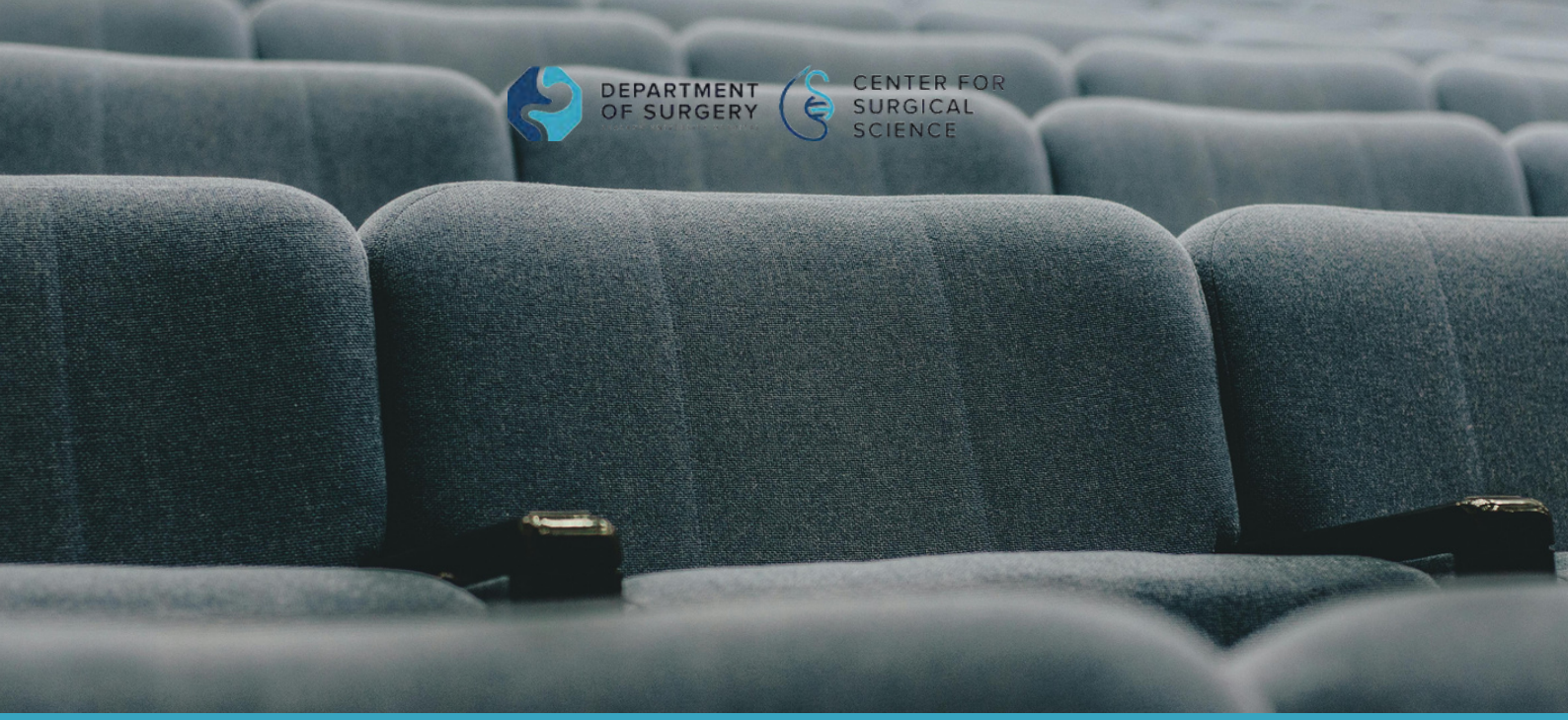
The project group includes health professionals, patient representatives and researchers in a collaboration where all participants have taken part in the preparation of the protocol, selection of questionnaires as well as the follow-up work with data analysis and dissemination of results.

Marianne Krogsgaard, Cand.scient.san., Ph.d., Research lecturer

Projects: 2023 has been a year of starting projects and doing background research, so stay tuned to see the results in 2024.

Oral presentations:

- HIlister Dansac Education Day for stoma nurses. Topic: Patients' perspectives on parastomal bulging. Invited speaker, Göteborg, Sweden. Sept 2023
- International Congress for Nursing. Topic: ' Impact of a stoma on long-term rectal cancer survivors'. Canada. July 2023
- Cross Sectorial Masterclass in Region Zealand. Topic ' Nursing research on parastomal bulging – what do we know?' Coloplast. Invited speaker, Ringsted, Feb 2023



PH.D. DEFENSES & AWARDS

5

COMPLETED PH.D.'S

4

AWARDS

COMPLETED PH.D.'S

Name: Rune Munch Trangbæk
Title: Optimising major abdominal emergency surgery
Ph.D. defense date: January 12, 2023

Name: Morten Frederik Hartwig
Title: Surgical treatment of colon cancer in high-risk patients
Ph.D. defense date: February 3, 2023

Name: Lasse A. Kvich
Title: Bacterial impact on tumor microenvironment in patients with colorectal cancer
Ph.D. defense date: March 14, 2023

Name: Johan Clausen
Title: Implications and predictions of emergency readmissions after colorectal cancer surgery
Ph.D. defense date: March 21, 2023

Name: Kirsten Lykke Wahlstrøm
Title: Mechanisms of remote ischaemic preconditioning in non-cardiac surgery
Ph.D. defense date: June 27, 2023

AWARDS

The Titan Award
OHDSI 2023 Global Symposium,
New Jersey,
October 2023
Winner: Center For Surgical Science

Best lecture on acute and hernia surgery
Dansk Kirurgisk Selskabs Yearly Meeting,
Copenhagen
November 2023
Winners: Johanne Gormsen,

Best lecture on colorectal surgery
Dansk Kirurgisk Selskabs Yearly Meeting,
Copenhagen,
November 2023
Winners: Emilie Barbara Palmgren Colov

Best lecture on ECV/HPB
Dansk Kirurgisk Selskabs Yearly Meeting,
Copenhagen
November 2023
Winners: Liv Willer Erritzøe

FUNDINGS

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PUBLICATION LIST

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