

Research Symposium

Tuesday, November 5

Abstracts

2024



Research Symposium Program

- 09:00** Welcoming remarks by Bodil Ørkild, VP responsible for research at HGH
- 09:10** Introduction to HYF/GNUF by Mia Kolmos
- 09:15** Long presentations, first session of the main competition
Chair: Niels Klarskov
- 10:05** Coffee break – meet your fellow researchers
- 10:30** Research battle – who will win the votes?
Impact on health care: Parliament beats publications
Monika Rubin vs. Børge Nordestgaard
Chair: Stig Bojesen
- 11:30** Lunch and networking
- 12:15** Short electronic presentations on stations in the auditoriums and Store Mødesal
- 13:30** Coffee break – meet your fellow researchers
- 13:55** Long presentations, second session of the main competition
Chair: Ann Møller
- 14:45** Short electronic presentation competition – Final with the five selected presentations
Chair: Lone Skov
- 15:20** Award ceremony and closing remarks

Research Symposium 2024

Long presentations

Chair: Niels Klarskov & Ann Møller

No.	Name	Abstract title
1	Caroline Espersen	Effectiveness of high-dose versus standard-dose influenza vaccine against hospitalizations and mortality according to frailty status
2	Erik Gudmann Steuble Brandt	Improved pancreatic imaging with Photon-counting CT
3	Gyrithe Lynghøj Pedersen	Outpatient laser coagulation of intermediate-risk bladder tumor compared with TUR-BT, 12 months and long-term results of a noninferiority RCT
4	Karen Hvid	Lower remnant cholesterol by 2 mmol/L and 6-17% lower 10-year ASCVD risk in primary prevention
5	Kristine Lindhard Rasmussen	Far infrared radiation does not improve time to cannulation in newly placed arteriovenous fistulas in patients on hemodialysis.
6	Malini Vendela Sagar	Can artificial intelligence diagnose strokes? Performance of a radiological AI-algorithm with clinical neurology as a reference
7	Meryam El Issaoui	Alkalinized lidocaine as an anesthetic before intravesical onabotulinumtoxinA injections for overactive bladder. A randomized trial
8	Sophie Sander Knudsen	Prevalence of elevated cardiac troponin in five non-cardiac diseases

Research Symposium 2024

Name of presenter	Caroline Espersen
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology, Herlev & Gentofte Hospital
Abstract title	Effectiveness of high-dose versus standard-dose influenza vaccine against hospitalizations and mortality according to frailty status
Abstract text limited to 250 words (1800 symbols)	Purpose: To assess the effectiveness of high-dose (QIV-HD) vs. standard-dose (QIV-SD) quadrivalent influenza vaccination according to frailty status in elderly individuals. Methods: This was a post-hoc analysis of the randomized controlled feasibility trial of QIV-HD versus QIV-SD conducted during the 2021–2022 influenza season in adults aged 65–79 years. We assessed the following prespecified outcomes: hospitalizations for pneumonia or influenza, cardiorespiratory, cardiovascular, and all-cause hospitalizations and all-cause mortality. Level of frailty was defined according to the Hospital Frailty Risk Score based on ICD-10 codes for relevant comorbidities any time prior to vaccination. Results: Among 12,473 included participants (mean age 71.7, 47.1% female), 10,689 (85.7%) were categorized as having low frailty (<5 points) and 1,784 (14.3%) had intermediate or high frailty (≥5 points). In total, 38 individuals were hospitalized for pneumonia or influenza during follow-up, and 62 died during follow-up. QIV-HD vs. QIV-SD was associated with a lower incidence of hospitalizations for pneumonia and influenza, this effect was consistent regardless of frailty score (FS) (P interaction: 0.92). FS significantly modified the effect of QIV-HD vs. QIV-SD on all-cause mortality (P interaction 0.022). In participants with low frailty, QIV-HD was associated with a lower risk of all-cause mortality (HR 0.26, 95% CI 0.13 to 0.55), whereas there was no evidence of effect among those with intermediate or high frailty (HR 1.69, 95% CI 0.66 to 4.29). Conclusion: In this post-hoc analysis of a large-scale pragmatic trial, QIV-HD vs. QIV-SD was associated with a lower incidence of hospitalizations for pneumonia and influenza among older adults irrespective of frailty status. However, FS seemed to modify the effect of QIV-HD vs. QIV-SD on all-cause mortality, warranting further investigation.

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Radiology, Herlev & Gentofte Hospital
Abstract title	Improved pancreatic imaging with Photon-counting CT
Abstract text limited to 250 words (1800 symbols)	Introduction: The aim of this study is to investigate the image quality of pancreatic images from Photon-Counting CT (PCCT) scanners in comparison to conventional CT (EID-CT). Methods: We retrospectively identified 35 patients scanned on both EID-CT and PCCT in the period from October 2021 until December 2023 without suspicion of pancreatic. IV contrast was given and scans were made with a late arterial (LA) and portovenous phase (PV). Image quality was rated on a 5-point Likert-scale (from 1=nondiagnostic to 5=optimal). Eleven different pancreatic parameters were scored by four onco- or abdominal radiology consultants. All data analysis was performed with RStudio, version 2022.07.1. Continuous parameters were compared with a paired t-test and mean image quality ratings with a Wilcoxon signed rank test. Results: Image quality was rated significantly higher on PCCT for the pancreatic parenchyma in the LA (3.87 vs 2.77, $p<.001$), the pancreatic parenchyma in the PV (3.31 vs 2.53, $p<.001$), pancreatic ducts (2.88 vs 2.62, $p<.001$), SMA (4.10 vs 2.74, $p<.001$), celiac axis (4.04 vs 2.70, $p<.001$) and portal vein (3.29 vs 2.52, $p<.001$). Noise levels were significantly lower with PCCT with a mean reduction of 5.8 HU across all parameters. DLP was significantly reduced with 31.8% ($p<0.01$) for LA and 21.5% ($p<0.01$) for PV. Conclusion: Image quality was significantly improved for all evaluated pancreatic and and peripancreatic structures with PCCT. Additionally, image noise was reduced significantly. The improved image quality with PCCT potentially leads to improvements in the currently difficult evaluation of pancreatic cancer.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Urology
Abstract title	Outpatient laser coagulation of intermediate-risk bladder tumor compared with TUR-BT, 12 months and long-term results of a noninferiority RCT
Abstract text limited to 250 words (1800 symbols)	Introduction: Managing recurrent low-grade intermediate-risk bladder tumors is burdensome for patients and healthcare systems. We previously found outpatient department (OPD) photo coagulation of bladder tumors (PC-BT) noninferior to the gold standard transurethral resection of bladder tumors (TUR-BT) in general anesthesia regarding 4-month recurrence-free survival. PC-BT is associated with fewer postoperative complications, better quality of life for patients and the required health care resources per treatment are notably reduced. This study aimed to compare 12-month recurrence-free survival between PC-BT and TUR-BT, long-term recurrence-free survival, and tumor stage progression. Methods: From 2016 to 2022, a single-center randomized controlled trial was conducted in Denmark, including 300 patients with histologically verified Ta low-grade bladder tumor recurrence. Participants were randomized 1:1 to either PC-BT with a 980 nm laser under local anesthesia or TUR-BT under general anesthesia. Primary endpoint was 12-month recurrence-free survival with a noninferiority margin of 15%. Secondary endpoints included long-term recurrence-free survival and tumor stage progression, with a noninferiority margin for stage progression set at 5%. Results: At 12 months, recurrence-free survival was 42.2% for PC-BT and 44.1% for TUR-BT, with a difference of 1.9% (95% CI -9.3 to 13.2), satisfying the noninferiority criterion. Median follow-up was 47.2 months for PC-BT and 49.5 months for TUR-BT. Stage progression rates were similar in the two groups with a difference of 0.16% (CI95%-0.024 to 0.027), satisfying the inferiority criterion. Long-term recurrence-free survival showed no difference between groups. Conclusion: PC-BT is a safe and effective alternative to TUR-BT for treating recurrent Ta low-grade bladder tumors.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Clinical Biochemistry, Copenhagen University Hospital - Herlev and Gentofte, Herlev, Denmark
Abstract title	Lower remnant cholesterol by 2 mmol/L and 6-17% lower 10-year ASCVD risk in primary prevention
Abstract text limited to 250 words (1800 symbols)	Introduction: As elevated remnant cholesterol gains increasing attention as a target in primary prevention of atherosclerotic cardiovascular disease (ASCVD), assessments of its preventative potential is important. We aimed to estimate the potential of remnant cholesterol lowering in reducing absolute 10-year risk of ASCVD in primary prevention. Methods: From the Copenhagen General Population Study, adults without previous ASCVD were recruited (2003-2015) and subsequently followed in the national Danish health registries until December 2021 for incident ASCVD. The 10-year cumulative incidence of ASCVD was predicted and difference in cumulative incidence functions, depending on remnant cholesterol levels, were calculated. Results: Of 100 943 individuals included, 10 101 developed ASCVD during a median follow-up of 12 years. The 10-year cumulative incidence (95% confidence interval) of ASCVD was 5.6% (5.3%-5.8%) for remnant cholesterol < 0.5 mmol/L, 8.7% (8.5%-8.9%) for 0.5 – 0.99 mmol/L, 11.3% (10.7%-11.9%) for 1.0-1.99 mmol/L, and 12.7% (10.6%-15.1%) for remnant cholesterol of 2.0-3.0 mmol/L. Lower levels of remnant cholesterol by 0.5 mmol/L, 1.0 mmol/L and 2.0 mmol/L were estimated to explain lower absolute 10-year risk of 1-5%, 2-10% and 6-17%, respectively, for a 60-year-old person with the magnitude depending on sex, statin use and cardiovascular risk category. Conclusion: In primary prevention a remnant cholesterol reduction of 2 mmol/L in 60 year olds likely reduces absolute 10-year risk of ASCVD by 6-17%, with the magnitude depending on sex, statin use, and cardiovascular risk category. This suggests that elevated remnant cholesterol may be an important target for primary prevention of ASCVD.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Nephrology
Abstract title	Far infrared radiation does not improve time to cannulation in newly placed arteriovenous fistulas in patients on hemodialysis.
Abstract text limited to 250 words (1800 symbols)	Introduction: There is a need to improve arteriovenous fistula (AVF) maturation and decrease the number of central venous catheter days in patients on hemodialysis (HD). Far infrared radiation (FIR) is a treatment modality, which may improve AVF maturation and patency. The present trial examined FIR's effect on AVF maturation. Methods: A randomized, controlled, open-label clinical trial was performed. Patients were randomized to receive FIR treatment (FIR) or no FIR (control). After AVF placement, the FIR group received FIR on their AVF for 40 minutes at every HD treatment for one year. The primary outcome was the difference in time to cannulation, defined as the number of days from AVF placement to the first HD treatment with two functioning dialysis needles in the AVF. The difference was explored in a Kaplan-Meier analysis censored for thrombosed AVFs, death, loss to follow-up, and change of renal replacement therapy. Hazard ratios (HR) were determined by Cox regression analyses and adjusted for age, sex, diabetes, cardiovascular disease, albumin, type of AVF, size of AVF in mm at placement, and peroperativ flow. Results: In total, 91 patients were randomized to FIR (n=46) or control (n=45). There were no differences in baseline characteristics between groups. No significant difference in time to cannulation with median days of 68 days [52;109.5] in the FIR group and 68 days [56.5;85] in the control group (p=0.8) was seen. The HR for chance of cannulation was 0.71; (95% confidence interval (CI), 0.43-1.18, p=0.19) in the FIR group compared to the control group. HR after adjustment for clinical variables was 0.68 (95% CI 0.40-1.15, p=0.12) in the FIR group compared to the control group. Conclusion: FIR does not improve time to cannulation in newly placed AVFs in patients on hemodialysis. However, the influence of FIR on clinical maturation, the long-term risk of thrombosis, and the number of interventions in the AVFs are yet to be explored.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Neurology
Abstract title	Can artificial intelligence diagnose strokes? Performance of a radiological AI-algorithm with clinical neurology as a reference
Abstract text limited to 250 words (1800 symbols)	Background: Non-comprehensive stroke treatment is time sensitive, where brain imaging is a therapeutically consequential aspect, distinguishing ischemic and hemorrhagic etiologies. A commercially available artificial intelligence (AI) algorithm (Apollo version 2.1.1 by Cerebriu), with a sensitivity of 89% and specificity of 90% for brain ischemia on magnetic resonance imaging (MRI), may facilitate swift workups. We aimed to test this radiological AI-tool in comparison to clinical diagnoses. Method: We retrospectively included patients with suspected stroke admitted consecutively in 2020 to our non-comprehensive stroke unit, with brain MRI included in their inpatient workup. Clinical diagnoses upon discharge were determined based on ICD-10 codes and review of medical records and subclassified as “acute ischemic stroke” (AIS), “transitory ischemic attack” (TIA), “intracerebral hematoma” or “other”. The AI-algorithm interpreted the MRI scans and provided dichotomous outputs of “suspected ischemia” and/or “suspected hemorrhage”. If both were present simultaneously, the AI-read was classified as “hemorrhage”. Result: Of 627 included patients, 353 (56%) were female, and the average age was 67 years, 137 had AIS, 98 had TIA and 6 had hemorrhages. The sensitivity for ischemic etiologies (AIS/TIA) was 46% [39; 52%] and specificity was 90% [88; 93%]. For hemorrhagic etiologies, sensitivity was 67% [22; 96%] and specificity was 90% [88; 93%]. If TIA-patients were excluded, with 529 patients remaining, sensitivity and specificity for ischemia were 66% [58; 74%] and 91% [88; 93%] respectively. Conclusion: For suspected stroke, MRI-based AI-tools may supplement clinical factors, provide decision support, and especially help identify scans without ischemia or hemorrhage present.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Obstetrics and Gynecology
Abstract title	Alkalinized lidocaine as an anesthetic before intravesical onabotulinumtoxinA injections for overactive bladder. A randomized trial
Abstract text limited to 250 words (1800 symbols)	Introduction: Intradetrusor onabotulinumtoxinA (BTX-A) injections are a well-established third-line treatment for overactive bladder syndrome, necessitating repeated treatments. Anesthetic protocols for BTX-A injections vary across departments with no standardized approach. Intravesical alkalinized lidocaine has been proposed as an anesthetic but has not been evaluated against placebo. We hypothesized that intravesical administration of alkalinized lidocaine would reduce procedural pain during BTX-A injections compared to placebo. Methods: This single-center, randomized, double-blind, placebo-controlled cross-over trial included women enrolled for BTX-A injections in our outpatient urogynecology clinic. Patients were randomized (1:1) to alkalinized lidocaine or placebo initially. Primary outcome was reported pain score on a 100-mm visual analog scale immediately post-injections. Secondary outcomes were adverse effects, including post-void residuals requiring catheterization, urinary tract infection, hematuria one-week post-treatment, and patient satisfaction evaluated on a 5-point scale. In the second treatment period, patients received the alternate treatment. Results: We enrolled 50 patients, of which 41 were eligible for per-protocol-analyses. Mean VAS score was significantly lower following intravesical alkalinized lidocaine (mean (95% confidence interval (CI)) 21.3 (14.7 to 27.8) compared to placebo (41.6 (CI 35.0 to 48.1)) with a mean difference of -20.3 mm (95% CI -29.2 to -11.5; $P < 0.0001$). Adverse events and patient satisfaction did not differ significantly between alkalinized lidocaine and placebo treatments ($P = 0.825$; $P = 0.138$). Conclusion: Intravesical instillation of alkalinized lidocaine before BTX-A injections resulted in a significant reduction in VAS scores compared to placebo.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Emergency department and Cardiology department, Herlev Hospital
Abstract title	Prevalence of elevated cardiac troponin in five non-cardiac diseases
Abstract text limited to 250 words (1800 symbols)	Introduction: Cardiac troponins (cTns) are the biochemical gold standard for detecting myocardial infarction. Still, elevated levels often appear in non-cardiac conditions in patients without evident cardiac dysfunction, particularly for cardiac troponin T (cTnT). We aimed to investigate the prevalence of cTnT in five non-cardiac disease groups where frequent elevation of cTnT previously has been described: Sepsis, Rhabdomyolysis, End-stage renal disease (ESRD), Stroke, and Major non-cardiac surgery (MNCS). Methods: This single-center prospective cross-sectional study included patients from the five above mentioned disease groups over a 12-month inclusion period. Patients with any signs of cardiac disease were excluded. Patients were included within 48 hours of hospital admission. All patients underwent vital signs assessment, 12-lead electrocardiogram (ECG), echocardiography (Echo), and blood sample collection. Cardiac troponin T was measured at the patient's bedside with a point-of-care test. Results: Of 184 patients eligible for inclusion, 27 (14,6%) showed signs of cardiac disease on either ECG or Echo. Among the 155 patients without signs of cardiac disease, elevated cTnT above the 99th percentile was found in 32 (20%) of patients; 26,6 % (12/45) with sepsis, 55% (5/9) with rhabdomyolysis, 36% (8/22) with ESRD, 2,4% (1/42) with Stroke and 16% (6/31) with MNCS. The median cTnT was 57 ng/L (IQR: 50,5 – 92 ng/L). Conclusions: Cardiac troponin T elevations are frequent in the five non-cardiac diseases investigated, most prominent in patients with rhabdomyolysis and ESRD. Further investigations are warranted to elucidate the underlying etiology contributing to the elevation of cardiac troponin in non-cardiac diseases.

Research Symposium 2024

Short electronic presentation

Pediatrics, fertility, and allergy

Chair: Ditte Hansen

No.	Name	Abstract title
1	Amalie A. Berring-Uldum	Psychiatric Comorbidity in a Clinical Cohort of Children and Adolescents with Headache
2	Amalie Dalgas-Madsen	Associations between arterial stiffness and metabolic target in children and adolescents with type 1 diabetes treated in a modern setting
3	Ardiana Ala	Inheritance and impact of parental gender on clinical expression of Tourette syndrome in offspring
4	Christopher Willy Schwarz	Experience with multiple non-medical switches between originator and biosimilars of adalimumab in patients with psoriasis
5	Corrie Lynne Madsen	Green ambitions: Steps towards sustainable biobanking
6	Elena von Rohden	Male fertility restoration: In vivo and In vitro stem cell-based strategies using cryopreserved testis tissue - a scoping review
7	Frederikke Rosenvinge Skov	An explainable machine learning approach on the early origins of childhood asthma and allergic rhinitis
8	Helene Meyer Martin	Dietary habits including use of nutritional supplements and adherence to national dietary guidelines in patients with psoriasis: A Cross-Sectional Study
9	Kristina Aagaard	Genetic investigation of causal effects of maternal dietary pattern on offspring risk of ADHD
10	Laurids Brandt Laursen-Keldorff	Allergy to piperacillin/tazobactam - prevalence, diagnostics and cross-reactivity
11	Maria Linander Vestager	Cardiometabolic function in Offspring, Mothers and Placenta after Assisted Reproductive Technology (COMPART)
12	Mila Broby Johansen	Extracellular matrix proteins in patients with psoriasis
13	Nina Freiesleben Mørch	Estradiol and progesterone levels in early pregnancy after natural, estradiol + progesterone or gonadotrophin stimulated FET
14	Signe Marie Wulff	Follicular Fluid Phosphate Concentration and Pregnancy Outcomes in Women undergoing Assisted Reproductive Treatment

Research Symposium 2024

Short electronic presentation

Cardiology

Chair: Michael Brun Andersen

No.	Name	Abstract title
1	Abdullahi Ahmed Mohamed	Liver fibrosis and outcomes in patients with heart failure and reduced ejection fraction with and without type 2 diabetes
2	Anton Friis Mariager	Risk Factors for Delayed Ductus Arteriosus Closure in Term-Born Infants
3	Caroline Nygaard Gammelvind	Mother's experience of participation in the Copenhagen Baby Heart Study
4	Caroline Vollmond	Maternal hyperthyroidism and cardiac structure and function in the newborn
5	Clara Cecilia Lykkebæk Bonde	Association of First-Trimester PAPP-A and β -hCG Levels with Congenital Heart Disease
6	Clara Friis	Temporal trends in mortality in high-risk patient groups after a first-time myocardial infarction: a Danish nationwide study from 2003-2022
7	Filip Sørensen Davidovski	Patient-reported outcomes and home-based self-swabs for influenza-like illness events - Lessons learned from the DANFLU-2 HomeSwab PRO
8	Giaan Ninh	Temporal Trends in Medication Usage Before and During Pregnancy 1997-2023: A Danish Nationwide Study
9	Mads Hashiba	Determinants of changes in peak oxygen consumption in patients with new onset heart failure
10	Marie F Børresen	Maternal medication in pregnancy and cardiac abnormalities in the offspring.
11	Niroya Kuganesan	Gender differences in the effect of cardiac rehabilitation
12	Sebastian Kinnberg Nielsen	Pregnancy protection in women of child-bearing age prescribed RAS inhibitors or statins – A real world study
13	Sofie Dannesbo	Clinical and diagnostic value of the novel algorithm for categorisation of neonatal interatrial communication; findings at follow-up in preschool child
14	Sofie-Louise Feentved Ødum	Temporal trends in inequality in patients with heart failure: a Danish nationwide cohort study from 2003-2022
15	Tippi Lam	Fetal heart rate and neonatal QT interval – data from a large general population study

Research Symposium 2024

Short electronic presentation

Internal medicine

Chair: Anders Hougaard

No.	Name	Abstract title
1	Anahita Rashid	Low muscle mass is associated with low bone mineral density in patients with CKD G4-5
2	Anne Marie Gade Ellegaard	Bile acid diarrhoea is associated with an increased risk of type 2 diabetes and cardiovascular disease: a nationwide cohort study
3	Benedicte Probst-Drejer	Calcium directly influences pituitary function through the Calcium Sensing Receptor (CaSR).
4	Caroline Sophie Hjelm Pichat	Parathyroid hormone and cardiovascular risk in patients with chronic kidney disease
5	Christine Hjorth Andreassen	Sertoli cell function and the dose of denosumab are critical for the response to RANKL inhibition in human testis cultures
6	Emilie Klara Hansen	A single far infrared treatment on the arteriovenous fistula causes no change in biomarkers of inflammation and endothelial function
7	Kasper Søndergaard	The responsiveness and effects of Specific Training According to Balance Evaluation (STABLE)
8	Mads Jorsal	Identification of hCG- and LH-dependent Ovarian Luteoma resulting in marked Androgen Production during Pregnancy and after Menopause
9	Mia Kolmos	Upper-extremity motor recovery after stroke: A systematic review and meta-analysis of usual care in trials and observational cohort studies
10	Nadia Krarup Knudsen	Establishing the dose-response relationship for Denosumab treatment in humanized RANKL mice in vivo and in testicular ex vivo cultures
11	Sabina Chaudhary Hauge	A distinct bone phenotype in kidney transplant candidates with type 2 diabetes
12	Sarah Juul Kring	Frailty Screening in Older Patients With Suspected Lung Cancer
13	Susanne Boel	A qualitative insight into patients' information needs for shared decision-making about rehabilitation after wrist fracture surgery
14	Ulla Due	Translation and validation of the ICIQ-B in Danish men and women with pelvic floor disorders

Research Symposium 2024

Short electronic presentation

Surgery and Anesthesiology

Chair: Tove Holst Filtenborg Tvedskov

No.	Name	Abstract title
1	Adam Mandrup Timmermann	Microsurgical Sperm Extraction in Patients with Klinefelter Syndrome
2	Cecilie Balslev Willert	Psychological aspects of a bilateral risk-reducing mastectomy and immediate breast reconstruction- results from the HEBRECA study
3	Cornelia Lamprecht	Training Programmes for Healthcare Professionals in Managing Epidural Analgesia: A Scoping Review
4	Dagný Halla Ágústsdóttir	Frequency of urination dysfunction in patients operated for rectal cancer: a systematic review with meta-analyses
5	Emil Durukan	The association between clinical characteristics and cardiac dysfunction in men with erectile dysfunction: the EDcard prospective cohort study
6	Karoline Lundager	Detection of Germ Cell Neoplasia In Situ and Testicular Cancer Risk in Men with Testicular Microlithiasis
7	Kathrine Perslev	"The REPAIR Study: Short- and Long-Term Complications Following Second-Degree Tears and Episiotomy"
8	Madeline Kvist	Burst Abdomen after Emergency Laparotomy Decreases Health-Related Quality of Life: A Prospective Cohort Study
9	Marie Louise Jensen	Association between socioeconomic status and patient-reported outcome after shoulder arthroplasty for osteoarthritis or cuff tear arthropathy
10	Sara Mølgaard Hansen	MELACARE Nurse-led follow-up after early-stage melanoma: results of a randomised controlled trial
11	Sofie Skovbo Jensen	Individually tailored prehabilitation for risky lifestyles before ventral hernia repair: a protocol for a randomized controlled trial (STRONG-Hernia)
12	Søs Bohart	Correlation between subjective and objective cognitive function in post-intensive care patients: a dual-center prospective cohort study
13	Usamah Ahmed	Optimal mesh placement in elective primary ventral hernia repair: an international survey of surgeons
14	Viktor Frederik Bay Moseholm	The influence of experience on nerve identification during open inguinal hernia repair: a nationwide register-based study.

Research Symposium 2024

Short electronic presentation

Paraclinical studies

Chair: Thordis Thomsen

No.	Name	Abstract title
1	Aliya Marie Thomas	Additive glucagonotropic and insulinotropic effects of glucose-dependent insulinotropic polypeptide (GIP) and alanine in fasted healthy men
2	Amalie Sloth Jørgensen	Nutritional requirements and intake in patients admitted to the Department of Gastroenterology
3	Andreas Holst Lange	PYY is increased in individuals with Bile Acid Diarrhoea
4	Anne Marie Beck	NUTRITIONAL INTAKE AND PREVALENCE OF MALNUTRITION ACCORDING TO GLIM CRITERIA IN DANISH
5	Benjamin Nilsson Wadström	Elevated remnant cholesterol, LDL cholesterol, and risk of peripheral artery disease: a Mendelian randomization study
6	Elna A. Dalsgaard	The Effect of Oral Nutritional Supplements on Muscle Strength in Hip Fracture Patients (NUTRI-MUSCLES) – A Feasibility Trial for an RCT
7	Ida Marie Gether	Increased gallbladder emptying and reduced GLP-1 response in pregnancy with and without gestational diabetes mellitus
8	Lærke Bech Larsen	Predicted estimates versus measured resting energy requirement in patients with liver cirrhosis
9	Martine Kjærsgaard Nielsen	Detection and treatment of dehydration is feasible in the emergency department (ED)
10	Melanija Talijanovic	Integrated mRNA-microRNA signatures associated with chemotherapy resistance in ovarian cancer
11	Nikolaj Ebbesen Sørup	The glucagonotropic effect of GIP in type 1 diabetes is abolished during insulin-induced hypoglycemia
12	Peter Engel Thomas	Lipoprotein(a) associated risk of atherosclerotic cardiovascular disease is independent of C-reactive protein
13	Sara Cocchi	Transcriptome signature associated with chemotherapy resistance in BRCA wild-type patients with high-grade serous ovarian cancer
14	Tummas Ternhamar	Combination of cardioprotective glucose-lowering drugs and statins on all-cause mortality

Research Symposium 2024

Short electronic presentation

Pediatrics, fertility, and allergy

Chair: Ditte Hansen

No.	Name	Abstract title
1	Amalie A. Berring-Uldum	Psychiatric Comorbidity in a Clinical Cohort of Children and Adolescents with Headache
2	Amalie Dalgas-Madsen	Associations between arterial stiffness and metabolic target in children and adolescents with type 1 diabetes treated in a modern setting
3	Ardiana Ala	Inheritance and impact of parental gender on clinical expression of Tourette syndrome in offspring
4	Christopher Willy Schwarz	Experience with multiple non-medical switches between originator and biosimilars of adalimumab in patients with psoriasis
5	Corrie Lynne Madsen	Green ambitions: Steps towards sustainable biobanking
6	Elena von Rohden	Male fertility restoration: In vivo and In vitro stem cell-based strategies using cryopreserved testis tissue - a scoping review
7	Frederikke Rosenvinge Skov	An explainable machine learning approach on the early origins of childhood asthma and allergic rhinitis
8	Helene Meyer Martin	Dietary habits including use of nutritional supplements and adherence to national dietary guidelines in patients with psoriasis: A Cross-Sectional Study
9	Kristina Aagaard	Genetic investigation of causal effects of maternal dietary pattern on offspring risk of ADHD
10	Laurids Brandt Laursen-Keldorff	Allergy to piperacillin/tazobactam - prevalence, diagnostics and cross-reactivity
11	Maria Linander Vestager	Cardiometabolic function in Offspring, Mothers and Placenta after Assisted Reproductive Technology (COMPART)
12	Mila Broby Johansen	Extracellular matrix proteins in patients with psoriasis
13	Nina Freiesleben Mørch	Estradiol and progesterone levels in early pregnancy after natural, estradiol + progesterone or gonadotrophin stimulated FET
14	Signe Marie Wulff	Follicular Fluid Phosphate Concentration and Pregnancy Outcomes in Women undergoing Assisted Reproductive Treatment

Research Symposium 2024

Name of presenter	Amalie A. Berring-Uldum
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Children and Adolescents, Copenhagen University Hospital - Herlev and Gentofte, Herlev
Abstract title	Psychiatric Comorbidity in a Clinical Cohort of Children and Adolescents with Headache
Abstract text limited to 250 words (1800 symbols)	BACKGROUND: Headache as symptom and primary headache diagnosis are linked to psychiatric conditions like anxiety and depression. In this study, symptoms of Obsessive-Compulsive Disorder (OCD), Attention-Deficit Hyperactivity Disorder (ADHD), and Autism-Spectrum Disorder (ASD) are assessed in a clinical population of children with headache and compared to healthy controls with and without headache. METHODS: The study is a cross-sectional, case control study. Patients with headache were recruited from the Headache Outpatient Clinic at the Department of Children and Adolescents, Herlev Hospital. Healthy controls were recruited from primary schools. Presence of the comorbidities ADHD, OCD and ASD were assessed by validated questionnaires. RESULTS: A total of 343 patients and 131 controls were included. Of the patients, 86 had migraine, 101 had tension-type headache (TTH), 81 had both migraine and TTH, 53 remained unclassified, and 21 had secondary headache. Of the controls, 71 had headache on at least a monthly basis and 60 did not have headache. Symptoms of OCD were more severe in the migraine group while ASD symptoms were more severe in the TTH-group, compared to controls without headache. For OCD, symptoms were more severe in the controls with headache compared to the patients with headache. The controls with headache had more often symptoms of OCD and ADHD than the headache-free controls. For all comorbidities, symptom severity was positively correlated with headache frequency. CONCLUSION: Health professionals encountering children with frequent headaches, both in hospital and the general population, should be aware of psychiatric comorbidity, as childhood headaches are associated with symptoms of ADHD, OCD, and ASD.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Pediatrics and Adolescent Medicine, Copenhagen University Hospital - Herlev and Gentofte Hospital
Abstract title	Associations between arterial stiffness and metabolic target in children and adolescents with type 1 diabetes treated in a modern setting
Abstract text limited to 250 words (1800 symbols)	Introduction: Life expectancy is shorter in individuals with type 1 diabetes (T1D) compared to those without, largely due to diabetes-related complications such as cardiovascular disease. Increased arterial stiffness is considered an early marker of cardiovascular disease. While Hba1c is the gold standard to assess metabolic target and a prognostic tool to evaluate the risk of complications, continuous glucose monitoring (CGM) metrics, particularly time-in-range (TIR), have emerged as valuable supplements. Knowledge of the association between metabolic target and arterial stiffness is scarce in children and adolescents with T1D in a modern technology-based setting. Methods: We included 127 children and adolescents, aged 6 to 18 years, with T1D from the DetectChild cohort. Arterial stiffness was assessed using carotid-femoral pulse wave velocity (cfPWV), the gold standard non-invasive method to detect subclinical arterial stiffness. TIR reflected 14 days CGM-measurements. Unadjusted and adjusted linear regression models were used to examine the associations between cfPWV and potential risk factors. Results: The prevalence of elevated arterial stiffness (cfPWV z-score >90th percentile) was 16%. In unadjusted analyses, cfPWV was positively associated with diabetes duration, age, Hba1c, mean arterial pressure, liver stiffness, and negatively associated with TIR and insulin sensitivity. After adjustment, cfPWV remained positively associated with age ($p<0.001$) and negatively associated with TIR ($p=0.011$). Conclusion: Despite modern diabetes technology and improved metabolic outcomes, children and adolescents with T1D show a high prevalence of elevated arterial stiffness. Increased arterial stiffness is independently associated with lower TIR, regardless of Hba1c levels.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Pediatrics, Copenhagen University Hospital - Herlev and Gentofte, Herlev, Denmark
Abstract title	Inheritance and impact of parental gender on clinical expression of Tourette syndrome in offspring
Abstract text limited to 250 words (1800 symbols)	Studies have shown that Tourette syndrome (TS) runs in families. In this study we aimed to investigate the correlation between predisposition to TS and clinical aspects of TS by examining differences in tic-severity, presence of comorbidity, and age of onset between children with TS and their parental predisposition. In total, 310 children with TS participated in this study. The children were divided into subgroups depending on parental inheritance of TS and symptoms of the comorbidities Attention Deficit Hyperactivity Disorder (ADHD) and Obsessive Compulsive Disorder (OCD). Overall, we compared the differences in maternal versus paternal predisposition and the difference in predisposition versus sporadic TS. We also compared the development in tic-severity at follow-up 6 years later. We found that offspring of maternal TS-only had a lower age of tic onset compared to the paternal ($p=0.003$) and sporadic group ($p<0.001$). However, if the mother was affected by TS +/-ADHD/OCD, symptom-onset was later than in offspring with paternal predisposition TS +/-ADHD/OCD ($p<0.001$). Children with an affected mother were diagnosed earlier than if the father was affected ($p<0.001$). There were more girls affected in the parental TS-only group compared to the sporadic group ($p=0.030$). In terms of tics, more severe tics were seen in the offspring with a predisposition. However, the children with a predisposition had a better improvement at follow-up. The inheritance from either the mother or the father can have an impact on clinical expression in the offspring, both when it comes to age of onset, sex differences, and degree of tic severity.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Dermatology and Allergy, Copenhagen University Hospital - Herlev and Gentofte
Abstract title	Experience with multiple non-medical switches between originator and biosimilars of adalimumab in patients with psoriasis
Abstract text limited to 250 words (1800 symbols)	Introduction: Psoriasis is a chronic skin disease with a prevalence of 2-3%. Some patients with moderate-to-severe psoriasis require continuous treatment with biologics, such as adalimumab. However, some patients lose response over time. A study from the UK observed that approximately 8% of patients discontinued adalimumab between months 6 and 12 following the initiation of therapy. Adalimumab came off patent in 2018, and more affordable biosimilars entered the market. Unlike generic drugs, biosimilars are highly similar but not identical to the originator, and patients may switch interchangeably between adalimumab products to reduce costs. Studies assessing the impact of these non-medical switches in a real-world population are limited. Methods: Adult patients with psoriasis from our department who had experienced at least one switch between adalimumab products and had been treated with an adalimumab product for at least 6 months before the first switch were included. We described the risk of discontinuing the treatment within the first 6 months after the switch. Results: We included 182 patients. The 6-month risk of discontinuing treatment after a switch was 3.9%. The risk was highest following the first switch (5.5%) and lower at the second (2.9%), and third switch (0.0%). Conclusion: Our findings indicate that the risk of discontinuing treatment following a switch between adalimumab products is not higher than the risk for patients who remain treated with the same adalimumab product.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Pathology
Abstract title	Green ambitions: Steps towards sustainable biobanking
Abstract text limited to 250 words (1800 symbols)	Introduction: Ultra-Low Freezers (ULTs) are used for storage of biological material, but cold storage can be extremely energy intensive. The Bio- and Genome Bank Denmark examined the temperature stability and energy efficiency of Haier ULT Freezer DW-86L959 at operating temperatures (OTs) -80°C, -70°C and -60°C as the first step towards greener biobanking and increased sustainability. Material & Methods: Three ULTs with empty racks set at -80°C, -70°C and -60°C were used for the study. Temperature was measured using data loggers for 2x12 hours at 10 min intervals placed in outer and middle positions of each shelf at the front and back of racks. Finally, power failure simulations were performed and energy consumption was measured. Results: We identified temperature zones in the ULTs with maximum temperatures differences of 11.7°C, 12.4°C and 13°C at OTs of -80°C, -70°C and -60°C. There was less than 1 hour difference in warm up time between OTs with all ULTs reaching -20°C after 15-16 hours. Increasing OTs to -70°C and -60°C showed a reduction in energy consumption of respectively 33% and 48%. Conclusion: Our study shows that increasing OTs to -70°C ensures storage of the majority of samples below temperature ranges known to increase the risk of cryogenic injury. Samples on the top shelf can be exposed to higher temperatures and internal placement of samples should therefore be considered to ensure sample integrity. Increasing OTs to -70°C would significantly reduce energy costs and carbon emissions and would be an important step towards sustainable biobanking.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Urology
Abstract title	Male fertility restoration: In vivo and In vitro stem cell-based strategies using cryopreserved testis tissue - a scoping review
Abstract text limited to 250 words (1800 symbols)	Introduction: Advances in the treatment of childhood cancer have significantly improved survival rates, with more than 80% of survivors reaching adulthood. However, gonadotoxic cancer treatments endanger future fertility, and prepubertal males have no option to preserve fertility by sperm cryopreservation. To investigate current evidence for male fertility restoration strategies, explore barriers to clinical implementation, and outline potential steps to overcome these barriers, a scoping review was conducted. Methods: The review was conducted after the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews criteria and examined studies using human testis tissue of prepubertal boys or healthy male adults. A literature search in PubMed was conducted, and 72 relevant studies were identified, including in vivo and in vitro approaches. Results: In vivo strategies, such as testis tissue engraftment and spermatogonial stem cell transplantation, show cell survival and differentiation. Yet, complete spermatogenesis has not been achieved. In vitro approaches focus on direct germ cell maturation in various culture systems, alongside human embryonic and induced pluripotent stem cells. These approaches mark advancements in understanding and promoting spermatogenesis but achieving fully functional spermatozoa in vitro remains a challenge. Barriers to clinical implementation include the risk of reintroducing malignant cells and introduction of epigenetic changes. Conclusion: Male fertility restoration is an area in rapid development. This review identifies persistent barriers to the clinical implementation of male fertility restoration. Direct transplantation of frozen-thawed testis tissue is the most advanced strategy for restoring male fertility and is on the verge of clinical application.

Research Symposium 2024

Name of presenter	Frederikke Rosenvinge Skov
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Research Symposium 2024

Department of main author/ presenter, no name of the author	COPSAC, Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, Denmark
Abstract title	An explainable machine learning approach on the early origins of childhood asthma and allergic rhinitis
Abstract text limited to 250 words (1800 symbols)	Background: Asthma and allergic rhinitis (AR) are common childhood conditions influenced by complex genetic, environmental, and immunological factors. Traditional statistical methods often fail to capture these interactions. This study aimed to identify early-life determinants of asthma persistence and AR using explainable machine learning (ML) models. Methods: We included 411 children from the Copenhagen Prospective Studies on Asthma in Childhood (COPSAC2000) cohort, categorized into asthma and AR outcomes. Asthma outcomes included transient (n=54) and persistent asthma (n=92), while AR outcomes comprised late-onset (n=90) and persistent AR (n=31), compared to controls. Four ML models—LightGBM, Random Forest, Elastic Net, and Deep Neural Networks—were trained on 129 features, including genetic predispositions, environmental exposures, immune markers, lung function assessments, and biometric data. Model performance was evaluated using area under the curve (AUC) and Shapley Additive Explanations (SHAP) for interpretability. Results: For asthma, the LightGBM model showed the best performance, achieving an AUC of 0.64 for distinguishing between persistent and transient asthma. Key predictors included total IgE at 4 years, dog allergen exposure, maximal mid expiratory flow at 7 years, early airway infections, and number of siblings. For AR, the Elastic Net model achieved an AUC of 0.59, slightly below fair predictive power. Significant predictors for AR included birth in summer, father's AR, and household income at 6 years. Eosinophil levels at 4 years and passive smoking showed trends toward importance. Conclusion: ML models can identify early-life factors predicting asthma and AR outcomes, supporting targeted early interventions and improving long-term outcomes.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Dermatology and Allergy, Copenhagen University Hospital - Herlev and Gentofte. Copenhagen, Denmark
Abstract title	Dietary habits including use of nutritional supplements and adherence to national dietary guidelines in patients with psoriasis: A Cross-Sectional Study
Abstract text limited to 250 words (1800 symbols)	

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Copenhagen Prospective Studies on Asthma in Childhood, COPSAC
Abstract title	Genetic investigation of causal effects of maternal dietary pattern on offspring risk of ADHD
Abstract text limited to 250 words (1800 symbols)	Background: Diet during pregnancy has been associated with an increased risk of offspring ADHD in observational studies. Establishing causal inference for the association is complicated by confounding factors. We aimed to genetically validate diet in pregnancy as a risk factor for offspring ADHD. Methods: 700 children were included in the Copenhagen Prospective Studies on Asthma in Childhood (COPSAC) 2010 cohort. Polygenic risk scores (PRSs) for a healthy dietary pattern were calculated for mothers, fathers, and children. The children underwent a psychopathological evaluation at age ten during which research diagnoses and symptom load of ADHD were assessed. We used trio models to test whether the association between maternal diet in pregnancy and ADHD was explained by direct genetic transmission of risk or genetic nurture referring to genetic effects operating through environmental pathways. Results: 437 mother, father, and child trios were included in the analyses. Hereof 12.1% children fulfilled criteria for an ADHD diagnosis. A higher maternal dietary PRS was associated with a healthier maternal dietary pattern during pregnancy and also with an increased risk of ADHD diagnosis and higher ADHD symptom load in the child. In trio models, only the association between maternal dietary pattern PRS and ADHD symptom load was significant after adjustment for child dietary pattern PRS removing direct genetic effects, β -0.97, 95%CI: -1.77;-0.17. Conclusion: Trio models showed evidence of genetic nurture as a mechanism linking diet during pregnancy and offspring ADHD symptom load. This finding supports the role of diet during pregnancy as a causal risk factor for ADHD.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Danish Anaesthesia Allergy Centre, Allergy Clinic, Department of Dermatology and Allergy, Herlev and Gentofte Hospital
Abstract title	Allergy to piperacillin/tazobactam - prevalence, diagnostics and cross-reactivity
Abstract text limited to 250 words (1800 symbols)	Introduction: Piperacillin/tazobactam (PTZ) is a broad-spectrum antibiotic consisting of the penicillin piperacillin and the beta-lactamase inhibitor tazobactam. We aimed to examine the prevalence of immediate allergy to PTZ in patients with perioperative allergic reactions and to investigate cross-reactivity to other penicillins in these patients. Methods: Patients investigated for allergy to PTZ at the Danish Anaesthesia Allergy Centre during 2015-2023 were included. Investigations comprised measurement of specific IgE to other penicillins, skin tests and if negative drug provocation test (DPT) with PTZ. Allergy was confirmed if skin- and/or IgE tests were positive or if DPT was positive. Patients with confirmed PTZ-allergy were investigated for cross-reactivity to other penicillins with skin tests and DPT, primarily with benzylpenicillin and ampicillin. Results: Of the 45 patients investigated for allergy to PTZ, 31 (69%) had the allergy confirmed. Twenty patients underwent DPT with PTZ as skin- and IgE tests were negative. 14/20 tested negative and the negative predictive value of skin- and IgE tests was 70% (95% CI 0.46-0.88). 18/31 patients with confirmed PTZ-allergy were investigated for cross-reactivity to benzylpenicillin and/or ampicillin. 2/18 (11%) had positive skin tests for either or both penicillins and cross-reactivity (allergy) to these was concluded. The remaining 16/18 (89%) tested negative on both skin tests and DPT with benzylpenicillin and/or ampicillin indicating tolerance. Conclusion: The prevalence of immediate allergy to PTZ in patients with perioperative allergic reactions was 69%, and 89% of these did not show cross-reactivity to other tested penicillins which subsequently no longer needed to be avoided.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Children and Adolescent Medicine
Abstract title	Cardiometabolic function in Offspring, Mothers and Placenta after Assisted Reproductive Technology (COMPART)
Abstract text limited to 250 words (1800 symbols)	INTRODUCTION: Globally, the number of children born through assisted reproductive technology (ART) is increasing. In Denmark, 6% of births now result from ART. Advances in cryo-techniques have led to a rise in frozen embryo transfer (FET), which reduces some severe pregnancy complications associated with fresh embryo transfer (fresh ET). However, FET is linked to an increased risk of preeclampsia and children being born large for gestational age (LGA). Both preeclampsia and LGA, regardless of ART, are known risk factors for childhood obesity. OBJECTIVE: This study aims to establish a prospective cohort of pregnant women and their offspring to explore maternal, fetal, and placental factors affecting fetal growth in children born after FET. We hypothesize that altered fetal growth in FET-conceived children may increase the risk of childhood obesity and cardiometabolic diseases later in life. METHODS: We will recruit 600 pregnant women, biological fathers, and children from Rigshospitalet and Herlev Hospital, equally divided between FET, fresh ET, and naturally conceived (NC) pregnancies. Children will undergo examinations at 3 months, including anthropometrics, body composition, echocardiography, and blood tests for growth and metabolic factors. All child examinations will take place at Herlev Hospital. CONCLUSION: Participant inclusion began in May 2024, with 65 pregnant women enrolled so far. Child examinations will start in March 2025. We expect this study to identify causal factors in FET-induced LGA and associated obesity risks, potentially leading to new obesity prevention strategies for future generations.

Research Symposium 2024

Name of presenter	Mila Broby Johansen
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Dermatology and Allergy, Copenhagen University Hospital - Herlev and Gentofte, Copenhagen, Denmark.
Abstract title	Extracellular matrix proteins in patients with psoriasis
Abstract text limited to 250 words (1800 symbols)	Introduction: Blood-based extracellular matrix (ECM) fragments have been identified as diagnostic and pharmacodynamic biomarkers in psoriatic arthritis and spondyloarthritis. We aimed to assess whether ECM fragments can differentiate patients with psoriasis (PSO) from healthy controls (HC) and determine their potential as pharmacodynamic biomarkers in PSO. Methods: The case-control study included 59 patients with moderate to severe psoriasis, not receiving systemic anti-psoriatic treatment at inclusion, and 52 HCs matched by age, sex, and BMI. A plasma sample was taken from all subjects at inclusion. Nine patients with PSO who started treatment with adalimumab after inclusion and responded successfully had an additional plasma sample taken after 3-6 months. Twelve ECM fragments were measured using validated ELISAs and Immunodiagnostic Systems automated chemiluminescent assays. Results: C4M, indicating collagen IV degradation, PRO-C3, indicating tissue fibrosis, and PRO-C4, indicating epidermal basement membrane turnover showed significantly elevated levels in PSO patients compared with HCs ($P=0.032$, $P=0.028$, $P=0.014$). Despite successful treatment, adalimumab did not significantly change C4M, PRO-C3, or PRO-C4 levels in the longitudinal study. Conclusion: In conclusion, compared with controls, C4M, PRO-C3, and PRO-C4 were elevated in PSO patients, but treatment did not modulate these fragments. Further research is needed to assess the role of ECM fragments as biomarkers in psoriasis.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Afdeling for Kvindesygdomme, Graviditet og Fødsler
Abstract title	Estradiol and progesterone levels in early pregnancy after natural, estradiol + progesterone or gonadotrophin stimulated FET
Abstract text limited to 250 words (1800 symbols)	Introduction: In Denmark every 8th child is conceived at a fertility clinic and during the last decades the use of frozen embryos (FET) has increased markedly. Before the transfer of an embryo, the uterus is prepared for pregnancy. As standard treatments women can be offered either a natural cycle, estradiol and progesterone replacement (HRT) cycle or stimulation with gonadotrophins, depending on their menstrual pattern. When using hormone replacement, the medication must be continued until the tenth week of pregnancy. Fetal exposure to estradiol during early pregnancy has been sparsely investigated in humans but studies on rodents have shown alterations in fetal growth and hormonal profiles in cubs born after exposure to estradiol in early pregnancy. This study compares serum concentrations of estradiol and progesterone in women who underwent treatment with one of the three standard treatment protocols. Methods: This was an open-labeled randomized controlled trial including 305 women. The women were randomized to either natural FET, HRT-FET or gonadotrophin stimulated FET based on their menstrual pattern. Blood samples were collected approximately every two weeks for the first ten weeks of pregnancy for a total of seven samples. Pregnancy outcomes were obtained through the women's medical journal. Results: Both estradiol and progesterone were significantly increased during implantation of the embryo in HRT-FET cycles. From the fifth pregnancy week and onwards no difference was observed. Obstetrical outcomes are presently being evaluated. Conclusion: Serum estradiol and progesterone is significantly higher during the critical period of embryo implantation in women treated with HRT-FET.

Research Symposium 2024

Name of presenter	Signe Marie Wulff
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Translational Endocrinologi, Research
Abstract title	Follicular Fluid Phosphate Concentration and Pregnancy Outcomes in Women undergoing Assisted Reproductive Treatment
Abstract text limited to 250 words (1800 symbols)	Introduction: Phosphate plays a crucial role in fetal development, yet its impact within human female follicles remains largely unexplored. This study aims to investigate whether follicular fluid phosphate concentrations influence the likelihood of achieving pregnancy during assisted reproductive treatment. Additionally, we aimed to assess the prevalence of hypophosphatemia and examine potential correlations between serum phosphate concentrations and follicular fluid phosphate concentrations. Method: This study was based upon a cohort of infertile women, who attended Danfert Fertility. Patients who received IVF or ICSI treatment between June 2015 and February 2017 were included. Correlation analyses were done with Spearmans Rank correlation, and categorical variables were analyzed using logistic regression ($p < 0.05$). Results: We included 111 women who had an egg retrieval and follicular fluid phosphate measured. All women were stratified according to follicular phosphate levels in tertiles. Regression analyses showed no significantly higher chance of women achieving a positive fetal heartbeat ($OR = 2.19$, $95\%CI: 0.75-6.39$, $p = 0.15$) in the middle tertile compared to the lowest tertile. Serum phosphate samples were measured in 38 participants within ± 16 days of egg retrieval. The prevalence of hypophosphatemia was 10.5%. Follicular phosphate concentration was positively correlated with serum phosphate levels (Spearmans correlation coefficient 0.311, $p = 0.048$). Conclusion: Follicular fluid phosphate concentrations showed no significant influence in the likelihood of achieving pregnancy. However, a trend towards higher chance of pregnancy was noted in the middle tertile. Serum phosphate levels correlated positively with follicular fluid levels, which indicates that follicular fluid levels may be influenced directly by serum availability.

Research Symposium 2024

Short electronic presentation

Cardiology

Chair: Michael Brun Andersen

No.	Name	Abstract title
1	Abdullahi Ahmed Mohamed	Liver fibrosis and outcomes in patients with heart failure and reduced ejection fraction with and without type 2 diabetes
2	Anton Friis Mariager	Risk Factors for Delayed Ductus Arteriosus Closure in Term-Born Infants
3	Caroline Nygaard Gammelvind	Mother's experience of participation in the Copenhagen Baby Heart Study
4	Caroline Vollmond	Maternal hyperthyroidism and cardiac structure and function in the newborn
5	Clara Cecilia Lykkebæk Bonde	Association of First-Trimester PAPP-A and β -hCG Levels with Congenital Heart Disease
6	Clara Friis	Temporal trends in mortality in high-risk patient groups after a first-time myocardial infarction: a Danish nationwide study from 2003-2022
7	Filip Sørensen Davidovski	Patient-reported outcomes and home-based self-swabs for influenza-like illness events - Lessons learned from the DANFLU-2 HomeSwab PRO
8	Giaan Ninh	Temporal Trends in Medication Usage Before and During Pregnancy 1997-2023: A Danish Nationwide Study
9	Mads Hashiba	Determinants of changes in peak oxygen consumption in patients with new onset heart failure
10	Marie F Børresen	Maternal medication in pregnancy and cardiac abnormalities in the offspring.
11	Niroya Kuganesan	Gender differences in the effect of cardiac rehabilitation
12	Sebastian Kinnberg Nielsen	Pregnancy protection in women of child-bearing age prescribed RAS inhibitors or statins – A real world study
13	Sofie Dannesbo	Clinical and diagnostic value of the novel algorithm for categorisation of neonatal interatrial communication; findings at follow-up in preschool child
14	Sofie-Louise Feentved Ødum	Temporal trends in inequality in patients with heart failure: a Danish nationwide cohort study from 2003-2022
15	Tippi Lam	Fetal heart rate and neonatal QT interval – data from a large general population study

Research Symposium 2024

Name of presenter	Abdullahi Ahmed Mohamed
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology
Abstract title	Liver fibrosis and outcomes in patients with heart failure with reduced ejection fraction
Abstract text limited to 250 words (1800 symbols)	Background and aim. Heart failure with reduced ejection fraction (HFrEF) is closely linked with metabolic dysfunction associated steatotic liver disease (MASLD). The clinical value of screening for advanced liver fibrosis using the Fibrosis 4 (FIB-4) score, is not clear. Here, we investigated the association between the FIB-4 and all-cause mortality, cardiovascular mortality, and major adverse liver outcomes (MALO) in patients with HFrEF. Method and results. This study included 4,523 HFrEF patients with and without type 2 diabetes from the Danish Heart Failure Registry. Based on FIB-4 score, 25.5% were classified as low-risk, 45.7% as indeterminate-risk, and 28.8% as high-risk for advanced liver fibrosis. After 5 years, the cumulative incidence of all-cause mortality was 43% for the high-risk group, 36% for the indeterminate-risk group, and 23% for the low-risk group. The high-risk group had an increased hazard ratio (HR) for all-cause mortality (HR 1.21, 95% CI 1.04-1.40) compared to the low-risk group. Additionally, the indeterminate and high-risk groups showed elevated HRs for cardiovascular mortality (HR 1.41, 95% CI 1.11–1.80; HR 1.83, 95% CI 1.42-2.36) and MALO (HR 2.13, 95% CI 1.21–3.75; HR 3.19, 95% CI 1.77-5.75) compared to the low-risk group. Conclusion. A high FIB-4 score in patients with HFrEF with and without type 2 diabetes is not only associated with high risk of MALO but also increased all-cause and cardiovascular mortality. Further investigations are warranted to understand whether screening with FIB-4 in patients with HFrEF could be valuable for identifying high-risk patients.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology Herlev Hospital / Department of Pediatrics Hvidovre Hospital.
Abstract title	Risk Factors for Delayed Ductus Arteriosus Closure in Term-Born Infants
Abstract text limited to 250 words (1800 symbols)	Background The ductus arteriosus (DA) normally closes after birth. We evaluated maternal and neonatal factors linked to delayed DA closure in term-born neonates. Methods Full-term neonates from the Copenhagen Baby Heart cohort were included. We used log-binomial regression to assess associations between echocardiography-confirmed open DA and maternal or neonatal factors. Results Among 21,610 neonates (48% female), mean age at examination was 11 days. Factors associated with an open DA were: female sex (aRR=1.2,95%CI:1.0-1.4), maternal thyroid disorders (aRR=1.5,95%CI:1.0-2.1), African (aRR=3.2, 95%CI:2-5.2) or Middle Eastern ethnicity (aRR=1.8,95%CI:1.3-2.8), maternal obesity (aRR=1.5,95%CI:1.0-2.3), high birthweight (aRR=1.6,95%CI:1.0-2.6), and maternal type 1 diabetes (aRR=2.2,95%CI:1.0-4.7). Conclusion The identified at-risk groups and risk factors for an open DA in term-born neonates may be useful for increasing clinical attention and improving neonatal care.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology Herlev-Gentofte Hospital
Abstract title	Mother's experience of participation in the Copenhagen Baby Heart Study
Abstract text limited to 250 words (1800 symbols)	INTRODUCTION: Participation in the Copenhagen Baby Heart Study (CBHS) may cause unnecessary concern for parent despite normal echocardiography of their child. OBJECTIVES: Evaluation of mothers' experiences associated with participation i CBHS, the level of concern regarding false positive findings and the level of concern regarding true positive findings. METHODS: Questionnaire: We used a modified version of Pulse Oximetry Study Acceptability Questionnaire based on selected parts of previously validated questionnaires. This was translated into Danish, adjusted for use in echocardiography, and adapted to local conditions. Population: 2,000 mothers participating in CBHS and two control groups consisted of 200 mothers giving birth at Nordsjællands Hospital during and 200 mothers giving birth at Herlev Hospital after the inclusion period of CBHS were invited to complete the questionnaires. Statistics: The domains of the questions were: Anxiety, Depression, Illness Perception, Optimism. Answers were given on a scale from 1-10. Median scores and corresponding interquartile range were calculated. RESULTS: 1,922 from the intervention group and 348 controls completed the baseline questionnaire, while respectively 1,280(66,6%) and 262 (75,3%) completed the follow-up questionnaires. At baseline, mothers in the intervention group had significant lower median anxiety (8(6-10 vs 10 (8-12)) and depression score (2(1-3) vs 3(2-5), were more optimistic, and found it more important to have babies tested compared to controls (5 (4-5)) vs (3(2-4)). At follow-up, median anxiety (9(7-11) vs 9(7-12)) and depression (2(1-3) vs 3(2-4)) score were lower compared with controls. CONCLUSION: Preliminary results show that participation in CBHS did not lead to unnecessary concern.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Copenhagen Baby Heart Study, Department for Cardiology
Abstract title	Maternal hyperthyroidism and cardiac structure and function in the newborn
Abstract text limited to 250 words (1800 symbols)	Introduction: Maternal hyperthyroidism, affecting approximately 0.1% to 0.4% of pregnancies, can lead to adverse pregnancy outcomes. Thyroid hormone plays a crucial role in fetal cardiovascular development, particularly during the first half of pregnancy when the fetal thyroid gland is not yet mature. This study aimed to investigate whether maternal hyperthyroidism is associated with subtle structural and functional cardiac abnormalities in newborns. Methods: This study included echocardiographic findings prospectively collected within 60 days of birth from participants in the Copenhagen Baby Heart Study (CBHS). We compared newborns of mothers with hyperthyroidism to unexposed newborns using regression analyses. Maternal hyperthyroidism diagnoses were identified via the Danish National Health Registries and validated by medical journal review. Results: A total of 25,590 newborns were included in the study, 212 were exposed to maternal hyperthyroidism. There was no significant association between maternal hyperthyroidism and minor or major congenital heart defects in the newborns. However, infants exposed to maternal hyperthyroidism had a thicker interventricular septum in end-diastole compared to unexposed infants (adjusted mean difference [$\pm$ SD] 0.011 [$\pm$ 0.034] mm, $P = 0.0011$). No significant differences were observed in other echocardiographic parameters. Conclusion: In this large cohort study, we found no significant association between maternal hyperthyroidism and structural congenital heart defects in newborns. However, exposure to maternal hyperthyroidism was associated with a subtle thickening of the interventricular septum in end-diastole. Further research is needed to better understand the possible long-term implications of this finding and the potential effects of maternal hyperthyroidism on cardiac development.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology, Copenhagen University Hospital – Herlev Hospital, Herlev, Denmark
Abstract title	Association of First-Trimester PAPP-A and β -hCG Levels with Congenital Heart Disease
Abstract text limited to 250 words (1800 symbols)	Background: Congenital heart disease (CHD) is the most common anomaly with a birth prevalence at 3-10/1,000 per live births. The etiology of CHD is still not well understood, but is considered multifactorial encompassing modifiable environmental factors as well as genetical factors. Previous studies have shown that a prenatal diagnosis of CHD has a more favorable outcome compared to a postnatal diagnosis and sensitive prenatal tests are therefore crucial to both the individual family as well as society in general. In the first trimester of pregnancy, the biomarkers chorionic gonadotropin (β-hCG) and pregnancy-associated plasma protein-A (PAPP-A) are utilized in combination with the nuchal translucency test as part of the screening program for chromosome abnormalities. Earlier studies have suggested that these biomarkers are also associated with non-chromosomal CHD, but the topic has not been investigated in a large population-based cohort. Objective: To evaluate whether PAPP-A and β-hCG are associated with CHD as well as echo- and electrocardiographic measures in neonates. Methods: Copenhagen Baby Heart is a prospective, population-based cohort study that included 25.000+ neonates. Neonatal cardiac structure and function were examined in children born between April 2016 and October 2018 at three maternity wards in the Copenhagen metropolitan area, Denmark. Echocardiography, electrocardiogram and blood samples were performed. Data on pregnancy and delivery, nuchal scan, parental health, etc. were obtained from medical records and national health registers. Descriptive statistics will be applied, and multiple regression analyses will be performed. Expected outcome: Documentation of an association between the mentioned biomarkers and increased risk of CHD or echo-/electrocardiographic outliers could potentially increase the diagnodiagnostic accuracy of CHD detection in the prenatal period.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Kardiologisk afdeling, Gentofte Hospital
Abstract title	Temporal trends in mortality in high-risk patient groups after a first-time myocardial infarction: a Danish nationwide study from 2003-2022.
Abstract text limited to 250 words (1800 symbols)	Introduction: Our study aimed to examine trends in mortality in patients with a first-time myocardial infarction (MI) from 2003-2022 within seven predefined high-risk subgroups. Methods: Patients aged 30+ years with a first-time MI diagnosis between January 1st, 2003, and December 31st, 2022, were identified through Danish nationwide registries. The study population was divided into four 5-year calendar groups (2003-2007, 2008-2012, 2013-2017, 2018-2022) and further divided into seven subgroups (' Age of 80 +' , ' Low income' , ' Female' , ' Frail' , ' Non-western immigrant' , ' History of mental illness' , ' Living alone'). Temporal trends in 5-year all-cause mortality for the entire cohort and subgroups were assessed using Kaplan Meier estimates and multivariable Cox regression models. Results: We included a total of 116,519 patients. The overall 5-year mortality risk decreased by 10.4% from 31.2% [95% CI 30.7-31.7] in 2003-2007 to 20.8% [95% CI 20.2-21.4] in 2018-2022. Similar reductions were observed across all subgroups, with the greatest reduction observed in the high risk-subgroups, when compared to their non-risk factor counterparts. Adjusted mortality rates from 2003-2007 (reference) to 2018-2022 showed comparable trends, with the frail subgroup being the only one to demonstrate a significant interaction effect (HR 0.65 [95% CI 0.60-0.69], interaction p value <0.001). Conclusion: Over 20-years, mortality in patients presenting with first-time MI have steadily declined, particularly in high-risk subgroups. In order to further improve treatment strategies and continue reducing mortality risk, additional insight is required.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology, Cardiovascular Non-Invasive Imaging Research Laboratory(CIRL) – Center for Translational Cardiology and Pragmatic Randomized Trials/CTCPR)
Abstract title	Patient-reported outcomes and home-based self-swabs for influenza-like illness events - Lessons learned from the DANFLU-2 HomeSwab PRO
Abstract text limited to 250 words (1800 symbols)	Introduction: Patient-reported outcomes (PRO) and self-swab methods hold potential for enhancing the monitoring of infectious diseases. The DANFLU-2 HomeSwab PRO study aimed to evaluate the feasibility of using self-administered swabs and digital PRO tracking to monitor influenza-like illness (ILI). Methods: In this sub-study of the DANFLU-2 trial, participants self-reported ILI symptoms and quality of life (QoL) using the Respiratory Intensity and Impact Questionnaire (RiiQ) for 14 days post-symptom onset. Symptomatic individuals conducted home-based self-swabs, registered via a web app, and mailed the samples for PCR testing. Weekly compliance reminders were sent through a governmental electronic letter system. Results: Of the 1,976 enrolled participants, 208 (10.5%) completed at least one RiiQ, with 171 (82.2%) meeting the ILI case definition. The response rate for completing all 14 days of RiiQs after an ILI event was 85.7%. Phone reminders were needed for 51.4% of participants, with a median of 1 contact per non-responding participant. Among those with ILI, 89.4% performed a self-swab, typically within 1 day of symptom onset. Correct registration of swabs in the web app was 65.8%, and 96.5% of swabs tested RNaseP positive. Thirty-six participants (1.8%) withdrew from the study, mainly due to the inconvenience of weekly reminders. To address this, options for less frequent reminders were offered, with 87 participants adjusting their preferences. The study staff managed 323 participant queries, responding via email or phone. Conclusion: Home-based self-swabs and digital PRO tracking are feasible in influenza studies, though improvements in participant engagement and data collection are needed.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiologi, Herlev Hospital
Abstract title	Temporal Trends in Medication Usage Before and During Pregnancy 1997-2023: A Danish Nationwide Study
Abstract text limited to 250 words (1800 symbols)	Introduction With the rising prevalence of maternal chronic conditions and increasing age at delivery, medication use during pregnancy is expected to increase. We investigated temporal trends in medication use among pregnant women and how maternal demographics influenced these patterns. Methods: We conducted a nationwide register-based study of all pregnancies in Denmark resulting in live births between September 1997 and April 2023. Medication exposure was defined as prescriptions filled in the nine months before conception thought pregnancy. Medications were classified based on their specific chemical substances. Temporal trends for the 20 most-prescribed medications were analyzed using Poisson regression, stratified by maternal age, education level, employment status, and urbanization. Results: In 63% of 1,550,038 pregnancies, at least one prescription was filled, with prevalence increasing from 29% in 1997 to 64% in 2023. Higher prevalence of medication use was associated with older age, lower education level, unemployment, and rural residence. Ondansetron use increased from 2005, peaking at 2% by 2023, while metoclopramide use declined from 3% to 2% over the same period. A shift from sulfamethizole to pivmecillinam in 2006 increased pivmecillinam use from 2% to 10%. Citalopram use fell from 1% to 0.3% after 2010, while sertraline steadily rose to 2% by 2023. Conclusion: Significant shifts in medication use were observed, driven by evolving clinical guidelines. The rising prevalence of medication use underscores the need for ongoing monitoring of prescription practices, updated guidelines to reflect changing trends, and targeted interventions to reduce healthcare disparities and ensure appropriate, equitable use.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology, Herlev and Gentofte Hospital, Copenhagen, Denmark
Abstract title	Determinants of changes in peak oxygen consumption in patients with new onset heart failure
Abstract text limited to 250 words (1800 symbols)	Background: Patients with heart failure (HF) with reduced ejection fraction (HFrEF) are at high risk of mortality. Peak oxygen consumption (pVO₂) is a key predictor of mortality and morbidity in these patients. Identifying factors influencing pVO₂ may improve prognosis and quality of life. Purpose: To investigate factors contributing to pVO₂ changes in a contemporary cohort of new-onset HFrEF patients. Methods: From December 2022 to September 2023, we included patients with new-onset HFrEF (ESC criteria) from an outpatient clinic at Gentofte Hospital. After referral, patients underwent 12 weeks of HF management per ESC guidelines, including physical training and pharmacological optimization. Baseline characteristics, CPET, medication, and echocardiography were assessed at referral and after 12 weeks. Changes in pVO₂ were analyzed using uni- and multivariable regression, with stepwise selection of variables ($p < 0.1$), adjusting for age and sex. A p-value < 0.05 was considered significant. Results: We included 48 patients (median age 73 years, 20.8% women, median baseline LVEF 30%, median baseline pVO₂ 17.3 ml/min/kg). After 12 weeks, pVO₂ improved by +2.18 ml/min/kg (95% CI 1.25-3.10, $p < 0.01$), and LVEF by +11.71% (95% CI 7.85-15.58, $p < 0.01$). Age was negatively associated with pVO₂ ($p = 0.043$), while increased minute ventilation (MV) and initiation of sodium-glucose cotransporter (SGLT2) inhibitors were positively associated ($p < 0.01$, $p = 0.03$). Multivariable analysis confirmed BMI as negatively, and MV and SGLT2 inhibitors as positively associated with pVO₂ changes. Conclusion: Optimal management significantly improves cardiorespiratory performance and ejection fraction in new-onset HFrEF, with SGLT2 inhibitors contributing to early pVO₂ improvement.

Research Symposium 2024

Name of presenter	Marie F Børresen
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Kardiologisk Forskningsenhed Herlev Hospital
Abstract title	Maternal medication in pregnancy and cardiac abnormalities in the offspring.
Abstract text limited to 250 words (1800 symbols)	Titel: Maternal medication in pregnancy and cardiac abnormalities in the offspring. Background: Congenital heart defects (CHDs) constitute one-third of all major congenital anomalies. Although multiple factors are believed to contribute to CHDs, a definitive etiology has only been established for a subset. It is estimated that up to 30% of CHDs are attributable to modifiable risk factors, including the use of medication during pregnancy. Previous studies have been limited by sample size, inadequate assessment of the timing of medication use in relation to pregnancy, and the lack of systematic echocardiographic evaluation. Aims: 1. Echocardiographic abnormalities in neonates after prenatally exposure to tricyclic antidepressants2. Echocardiographic abnormalities in neonates after prenatally exposure to macrolide3. Risk of prenatally ductus arteriosus closure in neonates after exposure to paracetamol or nonsteroidal antiinflammatory drugs (NSAID) during pregnancy4. Risk of persistent pulmonary hypertension in neonates after prenatal exposure to selective serotonin reuptake inhibitors (SSRI)5. Echocardiographic abnormalities in neonates after prenatally exposure to lithium. Method: The study is a part of the CBHS, a prospective population-based study of cardiac structure and function using comprehensive transthoracic echocardiography and electrocardiograms within 60 days of birth in >25,000 newborns born in Copenhagen between 2016-2018. Maternal medication will be assessed from The National Prescription Registry using a machine-learning algorithm developed by Statens Serum Institut. In addition, over-the-counter use of paracetamol and NSAID will be collected through questionnaires. Outcome measures will be assessed from echocardiograms, ECG, and through review of medical charts (specifically in the case of miscarriages).

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology
Abstract title	Gender differences in the effect of cardiac rehabilitation
Abstract text limited to 250 words (1800 symbols)	Purpose: This study investigates gender differences in 1) postoperative health-related and disease-specific quality of life, and symptoms of anxiety and depression, 2) rehabilitation effects, 3) intervention adherence, and 4) predictors of ineffective rehabilitation among heart valve surgery patients from a randomized controlled trial (RCT) of complex rehabilitation. Methods: A secondary, exploratory analysis was performed using data from the CopenHeart RCT, where patients were randomized 1:1 to complex rehabilitation or usual care. Gender differences were tested using student's t-test and Pearson's chi-squared test, and multiple logistic regression identified factors associated with poor rehabilitation effects. Results: Data included 161 men (77%) and 48 women (23%). Post-surgery, women reported significantly poorer self-reported health-related and disease-specific quality of life and more symptoms of anxiety and depression than men. Men in the intervention group showed significant improvement in physical capacity (VO₂peak) compared to the control group (mean difference in mL/kg/min: 4,2 vs. 2,7, p=0,003), while this was not significant among women (mean difference: 4,0 vs. 3,1 point, p=0,94). Women showed lower adherence to the intervention than men (50% vs. 60%). Conclusion: After heart valve surgery, women experienced poorer health-related and disease-specific quality of life, and more symptoms of anxiety and depression than men. They benefited less from complex rehabilitation and had lower adherence.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology, Herlev and Gentofte
Abstract title	Pregnancy protection in women of child-bearing age prescribed RAS inhibitors or statins – A real world study
Abstract text limited to 250 words (1800 symbols)	Background: Renin-angiotensin system inhibitors (RASIs) are known teratogens, while statins are potentially teratogenic. Previous studies indicate widespread use of these drugs among women of child-bearing age with no information on concomitant contraception. Purpose: To examine prescribing patterns of RASIs and statins alongside use of concomitant contraception among all women of child-bearing age in Denmark. Methods: Nationwide registers were used to identify all women aged 15–50 years on RASIs and statins during 2000–2022. The use of concomitant contraception was categorized as oral pill, implant, intrauterine device (IUD), or non-use. The duration of protection was assumed to be one year for oral contraceptives, two years for implants and four years for IUDs. Results: We included 134 311 women (median age: 44 years; [IQR: 38–48]) on RASIs and 75 379 women (median age: 45 years [IQR: 40–48]) on statins. The contraceptive coverage was 34.9% for RASI users and 27.3% for statin users. Among RASI users on contraceptives, 69.8% used oral contraceptives, 29.0% had IUDs, and 1.2% had implants. For statin users, 69.8% used oral contraceptives, 28.3% had IUDs, and 1.9% had implants. For women aged 27–35 years contraceptive use was 52.9% for RASIs users and 49.6% for statin users, thus contraceptive use decreased with increasing age. Conclusion: From 2000–2022, many women of child-bearing age were prescribed RASIs and statins without concomitantly using prescription contraceptives, which may pose a risk of teratogenic exposure. Future studies should investigate the extent and impact of RASI and statin exposure during pregnancy.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Cardiology
Abstract title	Clinical and diagnostic value of the novel algorithm for categorisation of neonatal interatrial communication; findings at follow-up in preschool child
Abstract text limited to 250 words (1800 symbols)	Introduction Atrial septal defect (ASD) is a common congenital heart defect, but often challenging to differentiate from the physiological interatrial communication (IAC); patent foramen ovale (PFO) in newborns. To address this, we recently developed an algorithm to distinguish between ASD and PFO in newborns. This study examines the patency of IACs identified neonatally. Methods Children participating in a large, multicenter population study who had an IAC detected at birth were enrolled for a follow-up echocardiogram. A single blinded operator assessed these echocardiograms to evaluate the patency of IACs. Patent IACs were reclassified as ASD or PFO using the developed algorithm. Results We included 904 children with IAC (median age 5.2 years [IQR: 4.5-5.5], 54% female). At birth, 292 were diagnosed with ASD and 612 with PFO. Follow-up echocardiograms revealed that 62 children with neonatal ASD (18.5%) and 54 children with neonatal PFO (10.1%) had a patent IAC (OR: 2.0 [95%CI: 1.3-3.0], $p < 0.001$). The likelihood of a patent IAC being reclassified as ASD was 7.5% in the neonatal ASD group compared to 1.1% in the neonatal PFO group (OR: 7.0 [95%CI: 2.9-19.7], $p < 0.0001$). Conclusions According to our new algorithm, neonates diagnosed with ASD were twice as likely to have a patent IAC at follow-up compared to those with neonatal PFO. The risk of a patent IAC reclassified as ASD was very low for neonatal PFO. These findings support the diagnostic and clinical value of the new IAC diagnostic algorithm to differentiate between neonates with IACs that may need follow-up.

Research Symposium 2024

Name of presenter	Sofie-Louise Feentved Ødum
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Afdeling for Hjertesygdomme HGH
Abstract title	Temporal trends in inequality in patients with heart failure: a Danish nationwide cohort study from 2003-2022
Abstract text limited to 250 words (1800 symbols)	Introduction: Rising health inequalities is a global challenge that causes disparities in access to essential therapies, leading to poorer health outcomes for marginalized populations. We aimed to investigate the trends in initiation of guideline-therapies and the related clinical outcomes in different disadvantaged subgroups of patients with heart failure (HF). Methods: From Danish nationwide registries all patients with new-onset HF between 2003 and 2022 were identified. Seven high-risk groups were defined: age$\geq$80, female-sex, low-income, living-alone, history-of-mental-illness, non-western nationality, and frail, with their low-risk counterparts. Temporal trends in initiation of guideline-recommended HF therapy and the associated risk of all-cause mortality were examined. Results: A total of 152.395 patients were included. In general, the use of renin/angiotensin-system-inhibitors and beta-blockers increased while the use of diuretics decreased over time. Overall, all-cause mortality decreased from 2003-2007 (53.5% [95%CI, 53.0-54.0]) to 2018-2022 (43.2 [42.6-43.9]). When analyzing the subgroups: age $\geq$ 80, frail, and living-alone, had a significantly smaller decrease in absolute mortality risk compared to low-risk groups. Of note, those with a mental illness, had no decrease, but a small significant increase in adjusted hazard ratio when comparing 2003-2007 (0.70 [0.61-0.81]) to 2018-2022 (1.14 [1.05-1.25]). Conclusion: Over the last two decades, we found no major differences in redeemed prescriptions between the high-risk-groups and their low-risk counterparts. While overall all-cause mortality decreased over time, certain high-risk groups displayed smaller improvements. Notably, patients with a history-of-mental-illness showed no improvements.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of cardiology, Herlev Hospital
Abstract title	Fetal heart rate and neonatal QT interval – data from a large general population study
Abstract text limited to 250 words (1800 symbols)	Introduction: A prolonged neonatal QT interval is associated with a higher risk of ventricular arrhythmias and sudden infant death syndrome. Although fetal bradycardia has been reported in congenital long QT syndrome, it remains unclear whether there is a general association between fetal heart rate (FHR) and the neonatal QT interval. We aimed to explore this relationship in a large population-based cohort. Methods: We included neonates from the Copenhagen Baby Heart Study with FHR measurements from the nuchal fold scan and neonatal ECGs. FHR was divided into quartiles, and multiple linear regression was used to examine associations between FHR and ECG parameters, including QT intervals, heart rate, PR interval, and QRS duration, adjusting for maternal and neonatal covariates. Results: A total of 8,012 neonates (48% girls) with a median age of 11 days (IQR 7-14) were included. The median FHR was 159 bpm (IQR 155-164), with no cases of fetal bradycardia. The median QTcB interval was 418 ms across all FHR quartiles, with no significant differences. In the regression analysis, no significant association was found between FHR and QTcB. However, gender, gestational age, birth weight, QRS duration, and ventricular rate were significantly associated with QTcB ($p<0.01$). Conclusion: In this large population-based cohort, we found no evidence of an association between FHR and the neonatal QTcB interval. Although other factors like gestational age and birth weight were associated with QTcB, the findings suggest that in healthy neonates, FHR does not significantly influence the neonatal QT interval.

Research Symposium 2024

Short electronic presentation

Internal medicine

Chair: Anders Hougaard

No.	Name	Abstract title
1	Anahita Rashid	Low muscle mass is associated with low bone mineral density in patients with CKD G4-5
2	Anne Marie Gade Ellegaard	Bile acid diarrhoea is associated with an increased risk of type 2 diabetes and cardiovascular disease: a nationwide cohort study
3	Benedicte Probst-Drejer	Calcium directly influences pituitary function through the Calcium Sensing Receptor (CaSR).
4	Caroline Sophie Hjelm Pichat	Parathyroid hormone and cardiovascular risk in patients with chronic kidney disease
5	Christine Hjorth Andreassen	Sertoli cell function and the dose of denosumab are critical for the response to RANKL inhibition in human testis cultures
6	Emilie Klara Hansen	A single far infrared treatment on the arteriovenous fistula causes no change in biomarkers of inflammation and endothelial function
7	Kasper Søndergaard	The responsiveness and effects of Specific Training According to Balance Evaluation (STABLE)
8	Mads Jorsal	Identification of hCG- and LH-dependent Ovarian Luteoma resulting in marked Androgen Production during Pregnancy and after Menopause
9	Mia Kolmos	Upper-extremity motor recovery after stroke: A systematic review and meta-analysis of usual care in trials and observational cohort studies
10	Nadia Krarup Knudsen	Establishing the dose-response relationship for Denosumab treatment in humanized RANKL mice in vivo and in testicular ex vivo cultures
11	Sabina Chaudhary Hauge	A distinct bone phenotype in kidney transplant candidates with type 2 diabetes
12	Sarah Juul Kring	Frailty Screening in Older Patients With Suspected Lung Cancer
13	Susanne Boel	A qualitative insight into patients' information needs for shared decision-making about rehabilitation after wrist fracture surgery
14	Ulla Due	Translation and validation of the ICIQ-B in Danish men and women with pelvic floor disorders

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Nephrology, Herlev and Gentofte
Abstract title	Low muscle mass is associated with low bone mineral density in patients with CKD G4-5
Abstract text limited to 250 words (1800 symbols)	Background: Patients with chronic kidney disease (CKD) experience reduced bone mineral density (BMD), increasing their fracture risk. Preclinical studies highlight a connection between bone and muscle, making it important to explore the relationship in CKD patients. Sarcopenia, characterized by low muscle mass and strength, is common in CKD and may develop earlier, further heightening fracture risk. This study investigated the association between muscle mass and BMD in CKD patients. Methods: A cross-sectional study included 140 patients with CKD grades 4-5, with 66 (47%) females, a mean age of 68 (SD 13) years, and a mean eGFR of 18 (SD 7) ml/min/1.73m². Whole-body dual-energy x-ray absorptiometry (DXA) assessed BMD at the spine and hips, while muscle mass was measured as appendicular skeletal muscle mass (ASMM). Handgrip strength, 30-second sit-to-stand, and gait speed tests were also performed. Linear regression analyses explored associations between BMD and ASMM, adjusting for age, gender, BMI, and 25OH vitamin D. Results: Unadjusted analysis showed significant positive associations between femoral neck BMD and ASMM, and between total spine BMD and ASMM. These associations remained significant after adjustment. Femur neck BMD had a significant positive association with ASMM, which remained significant after adjustment. However, total spine BMD did not. No associations were found between BMD and handgrip strength, sit-to-stand, or gait speed. Conclusion: In CKD G4-5 patients, low appendicular skeletal muscle mass was associated with low hip and spine BMD. The increased fracture risk may result from the co-occurrence of osteoporosis and sarcopenia (osteosarcopenia), warranting further investigation.

Research Symposium 2024

Name of presenter	Anne Marie Gade Ellegaard
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Clinical Metabolic Research
Abstract title	Bile acid diarrhoea is associated with an increased risk of type 2 diabetes and cardiovascular disease: a nationwide cohort study
Abstract text limited to 250 words (1800 symbols)	Introduction: Bile acid diarrhoea (BAD) affects up to 1% of the population and is a socially debilitating disease characterized by diarrhoea, faecal urgency, and faecal incontinence caused by excessive amounts of bile acids in the colon. Among other actions, bile acids regulate systemic glucose and lipid metabolism, and BAD has been associated with a dysmetabolic prediabetic-like state. We investigated if individuals with BAD are at increased risk of type 2 diabetes (T2D) and cardiovascular disease (CVD). Methods: By using nationwide Danish health registries, we identified individuals with BAD by referral to the diagnostic 75selenium-homotaurocholic acid test followed by a prescription of a bile acid sequestrant (the standard treatment of BAD) within 365 days (n=5,954) and a reference population of age and sex-matched individuals (n=59,540). Results: Compared with matches, more individuals with BAD developed T2D (5.2% vs 8.8%, $P<0.0001$) and experienced CVD (18.0% vs 22.7%, $P<0.0001$) after study entry. Sensitivity analyses revealed earlier onset of T2D and CVD in the BAD population compared with matches but no difference between sexes. Compared with matches, more individuals with BAD had hypertension, ischaemic stroke, and used statins, and they had higher levels of glycated haemoglobin, and alanine aminotransferase, and disturbed cholesterol levels. All-cause mortality—but not CVD-related mortality—was increased among individuals with BAD compared with matches (5.0% vs 4.1%, $P=0.0006$). Conclusion: BAD is associated with increased risk and earlier onset of T2D and CVD as well as disturbed glucose and lipid metabolism, indicating BAD as a high-risk condition requiring intensified monitoring and relevant preventive interventions.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Endocrinology and Internal Medicine Division of Translational Endocrinology Copenhagen University Hospital - Herlev and Gentofte
Abstract title	Calcium directly influences pituitary function through the Calcium Sensing Receptor (CaSR).
Abstract text limited to 250 words (1800 symbols)	Introduction In a randomized clinical trial, prepubertal children were given calcium supplementation or placebo and girls in the intervention group went into puberty earlier than the placebo group. This was not detected in the boys who participated. CaSR is the main receptor for systemic calcium homeostasis, and its presence has been established in the pituitary. Methods We performed a mouse study comparing knock-out mice with a deletion of the CaSR in the anterior pituitary to wildtype mice. 13/13 female and 6/13 male knock-out/controls mice were included in the study and sacrificed at 8 weeks. We obtained blood samples and reproductive organs was dissected, weighted and stored at -80°C. Results Female reproductive organs showed significantly lower weight when comparing CaSR knock-out to control mice. This includes ovary weight (3.7 mg vs. 6.4 mg; $p = 0.0004$) and uterus weight (27.9 mg vs. 67.0 mg; $p = 0.0008$). The weight difference was still significant after correcting for total body weight (organ weight/total body weight%): (0.02176 vs. 0.03534; $p = 0.0035$ and 0.1788 vs. 0.3826; $p = 0.0023$ respectively). No difference was seen in male reproductive organs, nor any difference in pituitary weight in either sex. Conclusion The difference in reproductive organ weights is interesting, but also an early finding. Further analysis of the collected organs and blood samples will be conducted to further investigate the phenotype of the mouse model.

Research Symposium 2024

Name of presenter	Caroline Sophie Hjelm Pichat
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of nephrology Herlev Hospital
Abstract title	Parathyroid hormone and cardiovascular risk in patients with chronic kidney disease
Abstract text limited to 250 words (1800 symbols)	Cardiovascular disease is highly prevalent in patients with chronic kidney disease (CKD). The aim of this study was to describe the association between parathyroid hormone (PTH) level and risk of cardiovascular disease in CKD stage 3-5. The cohort was based on nationwide Danish healthcare registries. All Danish residents ≥ 18 years with eGFR < 60 ml/min/1.73 m² and measured PTH were identified between 2010 and 2022. Individuals with prior kidney transplantation, multiple myeloma, suppressed PTH, hypercalcemia ≥ 1.4 mmol/L, and current dialysis therapy were excluded. PTH was standardized based on the assay-specified upper normal limit (normal, 1.1-2.0xUNL, 2.1-4.0xUNL, and ≥ 4.0xUNL) with comparison of cumulative incidences of major cardiovascular outcomes (cardiomyopathy, heart failure, myocardial infarction, stroke, thromboembolism, and/or peripheral artery disease) based on the Aalen-Johansen estimator and multiple cause-specific Cox regression models adjusted for age, sex, and CKD stage with death as competing risk. Results were further tested in sensitivity analyses adjusted for phosphate. A total of 80,937 individuals were included. Median age was 74 yrs (IQR 65;82), 58% were female, 62% had normal PTH, 87%, 9% and 3% had CKD stage 3, 4 and 5. Male sex and lower eGFR were associated with higher PTH levels. A total of 17,701 events were identified during a mean follow-up of 4.4 yrs. Cumulative incidence was highest with PTH > 4xUNL. Higher PTH associated with increased rates of cardiovascular events. Principal results remained unchanged following adjustment for phosphate and vitamin D. To conclude increasing PTH may contribute to cardiovascular disease in patients with CKD stage 3-5.

Research Symposium 2024

Name of presenter	Christine Hjorth Andreassen
Presenter titles (e.g. MD, PhD)	MSc in Molecular Biomedicine, PhD, PostDoc
If PhD, date and year of defence	October 25, 2023
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Division of Translational Endocrinology Department of Endocrinology and Internal Medicine Copenhagen University Hospital - Herlev and Gentofte
Abstract title	Sertoli cell function and the dose of denosumab are critical for the response to RANKL inhibition in human testis cultures
Abstract text limited to 250 words (1800 symbols)	Introduction Currently, no treatment options exist to improve semen quality for most infertile men, but it is well known that the Sertoli- and germ cell interaction is crucial for spermatogenesis. Recently, it was suggested that denosumab, a RANKL-inhibitor, may decrease germ cell apoptosis in human testis cultures and stimulate sperm production in some infertile men. We propose that levels of OPG-expression in Sertoli cells may indicate dysgenesis in testis cultures and that expression of the RANKL-system, combined with the dose, predicts the response to denosumab. Methods Human testis from orchiectomies was cultured ex vivo (48 hours) and treated with 1-100 ng/mL denosumab or vehicle. D2-40-positive samples, used as a marker for the precursor of testicular cancer, were excluded. Sertoli cell dysgenesis was assessed by immunohistochemical staining for OPG. Proliferation and apoptosis were evaluated by quantification of cPARP- or BrdU-positive germ cells. Results 100 ng/mL of denosumab increased germ cell proliferation and decreased apoptosis in testis cultures with low/moderate OPG-expression in Sertoli cells, while lower doses of denosumab had no effect. In contrast, 100 ng/mL denosumab increased germ cell apoptosis in testis tissue with high OPG-expression in Sertoli cells. Lower denosumab-doses did not affect germ cell proliferation or apoptosis in tissue with high OPG-expression. Conclusion This study suggests that the effect of denosumab depends on the dose and the function of Sertoli cells, with high OPG-expression being a marker of dysgenesis. Future clinical trials in infertile men should aim for a dose resulting in an intratesticular concentration close to 100 ng/mL.



Research Symposium 2024

Name of presenter	Emilie Klara Hansen
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Nephrology, Herlev Hospital
Abstract title	A single far infrared treatment on the arteriovenous fistula causes no change in biomarkers of inflammation and endothelial function
Abstract text limited to 250 words (1800 symbols)	Introduction Far Infrared Radiation (FIR) may improve arteriovenous fistula (AVF) maturation and patency in patients on hemodialysis (HD). FIR has been suggested to pose a vasodilatory and anti-inflammatory effect in the AVF. This study examined the impact of FIR on the plasma level and the dialysate excretion of factors of inflammation, vasodilation, and endothelial dysfunction in the AVF during a single HD treatment. Methods The present study was a randomized controlled and single blinded study in 44 participants on HD with an AVF. The participants were randomized to FIR or control (no FIR). Blood samples and dialysate were taken before HD and after two and four hours of HD. The change and excretion of factors of inflammation, vasodilation, and endothelial dysfunction was explored in blood and dialysate water, respectively. Results There was no difference in the change of factors of inflammation, vasodilation, and endothelial dysfunction between the FIR group and control group after and during a four-hour HD treatment. There was a minimal excretion of the factors in the dialysate water during a four-hour HD treatment. Conclusion The study shows that a single FIR treatment causes no sustained change of factors of inflammation, vasodilation, and endothelial dysfunction. None of the factors were significantly excreted in the dialysate water during HD. In conclusion, the study is not supportive of a beneficial effect of FIR on the AVF during one HD treatment. The long-term effect of FIR on these factors is yet to be explored

Research Symposium 2024

Name of presenter	Kasper Søndergaard
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Dept. of Occupational and Physical Therapy. University Hospital Herlev and Gentofte.
Abstract title	The responsiveness and effects of Specific Training According to BaLance Evaluation (STABLE)
Abstract text limited to 250 words (1800 symbols)	Introduction Falling due to balance impairment is a major health care challenge among older adults. STABLE is a novel approach that, based on six clinical measures, guides exercise prescription in balance rehabilitation. Objectives To evaluate the responsiveness of the STABLE measures, and to estimate the impact of the STABLE approach on falls and balance ability. Methods Specific hypotheses regarding effect sizes and correlations between change in the STABLE measures and reference measures of the balance domains that they purport to measure were tested in seventy-five older adults with balance impairment. The patients balance ability and fall incidence were compared before and after rehabilitation. Results The hypothesized correlations ($r \geq 0.3$) and effect sizes ($SRM \geq 0.8$) only confirmed responsiveness for one measure, but when regarding the 95% CI, responsiveness was confirmed for all but one measure. The number needed to treat, to avert one patient falling after rehabilitation was: NNT (95%CI) = 3 (1 to 4) Conclusion Five of the STABLE measures can be applied to measure change in the STABLE approach, which appears to be effective to improve balance and lower the prevalence of individuals who experience falls.

Research Symposium 2024

Name of presenter	Mads Jorsal
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Division of Translational Endocrinology, Department of Endocrinology and Internal Medicine, Herlev and Gentofte Hospital
Abstract title	Identification of hCG- and LH-dependent Ovarian Luteoma resulting in marked Androgen Production during Pregnancy and after Menopause
Abstract text limited to 250 words (1800 symbols)	Context: Steroid hormone-producing tumors account for 0.1% of all primary ovarian tumors. Symptoms and phenotype depend on the specific hormones released from the tumor. Here, we present a postmenopausal woman with virilization during two pregnancies and in menopause caused by an androgen-producing ovarian tumor. Case description: A 61-year-old postmenopausal woman was referred with progression of symptoms including hirsutism, deepening of voice, clitoromegaly and android muscle appearance throughout 18 months. During her two pregnancies, she developed hirsutism and deepening of the voice. The hirsutism regressed postpartum, while the deepened voice sustained. Blood tests in our clinic revealed serum levels of estrogen and gonadotrophins compatible with her postmenopausal status, but elevated serum testosterone around 15 nM. Vaginal ultrasound revealed a process in the right ovary. Treatment with GnRH agonist, resulted in androgen suppression to levels appropriate for postmenopausal women, indicating that the hormone-production was dependent on gonadotrophins. For alleviation, she underwent bilateral salpingo-oophorectomy. Histological examination concluded stromal luteoma. Tissue cultures from the right ovary showed a several fold increase in testosterone production upon stimulation with hCG or LH. Following operation, she experienced improvements in all prior symptoms consistent with the normalization of androgen serum levels. Conclusion: Stromal luteomas are rare findings constituting only 20-25% of steroid cell tumors. Of these, only 12% present with androgenic symptoms. Identifying these tumors are difficult since symptoms may only occur when gonadotrophins are elevated i.e., pregnancies and menopause. Our data suggest that androgen producing stromal luteomas can be treated with surgery or GnRH agonist.

Research Symposium 2024

Name of presenter	Mia Kolmos
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Neurology
Abstract title	Upper-extremity motor recovery after stroke: A systematic review and meta-analysis of usual care in trials and observational cohort studies
Abstract text limited to 250 words (1800 symbols)	Background: Describing the trajectory of upper-extremity (UE) recovery in patients with stroke receiving usual care (UC) is crucial for informing clinicians on expected recovery and serve as an updated reference for future rehabilitation trials. Objectives: This systematic review and meta-analysis aimed to assess the motor recovery of UE in people undergoing usual care post-stroke from the subacute phase and identify covariates of recovery with UC. Methods: PRISMA-guidelines were used for search in PubMed, Cinahl and PEDro. Observational studies (OS) and UC groups of randomized control trials (RCT) of adults with subacute stroke and UE paresis were included, each reporting UE function at least at two occasions over time. Results: 56 papers (19 OS and 37 RCTs) involving 2,658 subacute stroke patients were included. Fugl-Meyer Assessment of Upper Extremity (FMA-UE) and Action Research Arm Test (ARAT) were most frequently reported as UE outcome. Across RCTs, FMA-UE and ARAT showed a mean improvement of 9 and 8 points respectively at 4 weeks assessment from baseline. In OS, the most reported outcome, FMA-UE, improved 12 points by 12 weeks assessment and 16 points by 24 weeks assessment from baseline. Stroke severity, severity of baseline UE function, age, and lesion load of the cortico-spinal tract were strongly associated with UE recovery. Conclusions: Across RCTs and OS in subacute stroke UE functioning in UC cohorts improved beyond the clinically important change. This review provides valuable estimates of expected change in usual care groups to be used when planning and estimating sample sizes in future trials, and thereby enhancing the power and comparability of the results.



Research Symposium 2024

Name of presenter	Nadia Krarup Knudsen
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Division of Translational Endocrinology, Department of Endocrinology and Internal Medicine, Copenhagen University Hospital - Herlev and Gentofte, Denmark
Abstract title	Establishing the dose-response relationship for Denosumab treatment in humanized RANKL mice in vivo and in testicular ex vivo cultures
Abstract text limited to 250 words (1800 symbols)	Introduction: Male infertility is a frequent problem and for the majority no treatment options are currently available. Previous studies have shown that Denosumab, a RANKL inhibitor, stimulate sperm production in a subgroup of infertile men. To investigate this further, we used a mouse model with a modified humanized Rankl gene that enables binding of Denosumab. Material and methods: Humanized mice were treated with 0,1-5 mg/kg Denosumab or vehicle s.c. at 8 weeks of age and sacrificed 6 weeks later. Furthermore, testicular tissue from the humanized RANKL mouse were cultured for 48 hours using a gel-based ex vivo culture approach. The dissected testes fragments (~1,5 mm³) were treated with four concentrations of Denosumab ranging from 1-1000 ng/ml and compared to vehicle treated tissue. Results: A significant increase in testicular weight was found for all Denosumab treated mice. Furthermore, an increase in serum inhibin B and AMH was observed, although only significant for the mice treated with 5 mg/kg. Accordingly, a significant increase in germ cell proliferation was found in ex vivo cultured testicular tissue in all Denosumab treated groups. Conclusion: Here, we find that treatment with Denosumab lead to an increase in germ cell proliferation and testicular weight in humanized RANKL mouse models. This suggests that even a transient dose of Denosumab can stimulate mouse spermatogenesis. However, further investigation is essential to understand the interplay between Sertoli cell function, spermatogenesis, and RANKL inhibition in male infertility.

Research Symposium 2024

Name of presenter	Sabina Chaudhary Hauge
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Nephrology, Copenhagen University Hospital – Herlev and Gentofte, Denmark
Abstract title	A distinct bone phenotype in kidney transplant candidates with type 2 diabetes
Abstract text limited to 250 words (1800 symbols)	Introduction: Type 2 diabetes mellitus (T2DM) is a common comorbidity in patients with chronic kidney disease (CKD). It associates with an increased fracture risk, but underlying mechanisms remain poorly understood. This study aimed to clarify the bone phenotype and fracture risk in contemporaneous patients with T2DM and kidney failure. Methods: Laboratory parameters including sclerostin and bone turnover markers (bone alkaline phosphatase (BALP), trimeric pro-collagen type I N-terminal propeptide (intact PINP), tartrate-resistant acid phosphatase 5b (TRAP5b)) were assessed in 647 patients (T2DM n=102) at time of kidney transplantation. Patients with type 1 diabetes mellitus were excluded. Bone mineral density (BMD, n=555) by densitometry and bone histomorphometry (n=188) were available for subsets. Incident fractures were extracted from patient files. Results: Intact PINP was lower (68 vs. 82 ng/mL, p=0.03) and sclerostin was higher (2.1 vs. 1.8 ng/mL, p=0.04) in T2DM compared to non-T2DM. BMD was higher at the lumbar spine (BMD 1.000 vs. 0.939, Z-score -0.066 vs. -0.760, p both <0.001) and femoral neck (Z-score -0.679 vs. 0.961, p=0.04) in those with T2DM. Bone histomorphometry parameters did not differ between groups. During a median follow-up time of 10 years, 17% with T2DM and 13% non-T2DM sustained a fragility fracture. T2DM did not associates with increased risk of incident fragility fracture (HR: 1.25; CI 0.71-2.18, p=0.44) after adjusting for age, sex, and BMI. Conclusion: T2DM associated with marginally suppressed bone turnover, higher BMD, and higher circulating sclerostin levels. The presence of T2DM did not affect the incidence of fragility fractures after kidney transplantation.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Medicine
Abstract title	Frailty Screening in Older Patients With Suspected Lung Cancer
Abstract text limited to 250 words (1800 symbols)	Introduction: Many older patients with lung cancer are multimorbid and vulnerable, leading to a higher risk of poorer outcomes. Comprehensive Geriatric Assessment (CGA) is recommended in frail patients, to optimize coexisting health issues during cancer treatment. The “G8 Questionnaire” (G8) is developed to identify frail patients with cancer in need of CGA. G8 is recommended worldwide but has a relatively low specificity identifying too many patients without any need of geriatric interventions. Clinical Frailty Scale (CFS), with a cut-off for frailty at ≥ 5, will be the future recommended frailty screening tool in Denmark. CFS has not yet been evaluated in older patients with cancer. The aim was to compare G8 and CFS to evaluate feasibility of frailty screening and geriatric referral. Method: During a sixth-month period, patients ≥ 70 years, undergoing investigation for lung cancer at Herlev and Gentofte Hospital, were screened for frailty using CFS and G8. Frail and pre-frail patients (CFS 4 – 7 and/or $G8 \leq 14$) were offered referral to CGA at the Geriatric Outpatient Clinic. Results: 235 patients were screened using CFS and G8. 156 (66 %) patients were identified as frail or pre-frail: one-third only using G8. Totally, 58 (37 %) frail patients have accepted referral to CGA. Patients only identified as frail using G8 were less likely to accept referral. Being prefrail using CFS (≥ 4) corresponded to being G8 frail (≤ 14). Conclusion: The prevalence of frailty seems high among older patients undergoing investigation for lung cancer. $CFS \geq 4$ (prefrail) corresponds to frailty according to G8 (≤ 14).

Research Symposium 2024

Name of presenter	Susanne Boel
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Physiotherapy and Occupational Therapy, Herlev and Gentofte Hospital
Abstract title	A qualitative insight into patients' information needs for shared decision-making about rehabilitation after wrist fracture surgery
Abstract text limited to 250 words (1800 symbols)	Background The optimal rehabilitation approach for patients following wrist fracture surgery is typically determined by healthcare professionals, with patients given the opportunity to accept or decline the proposed plan. According to 'Sundhedsloven', decisions regarding rehabilitation must be made collaboratively with the patient, ensuring that their preferences and motivation are considered. However, patients often lack sufficient information to actively participate in the decision-making process. Purpose To explore patients' information needs to effectively participate in shared decision-making regarding their rehabilitation. Method A qualitative study was conducted using focus group interviews with 17 patients and 15 healthcare professionals. Data were analysed using deductive content analysis based on the 'Ottawa Decision Support Framework'. Results Patients expressed a need for information on: 1) the timing of the rehabilitation decision, 2) the opportunity to actively participate in the decision-making process, 3) the available rehabilitation options and their content, and 4) a status of their functioning in relation to the typical recovery trajectory. Conclusion Patients required basic and essential information to enable active participation in the decision-making process. Perspectives The findings will inform the development of a decision aid designed to prepare patients for active involvement in decisions about their rehabilitation.

Research Symposium 2024

Name of presenter	Ulla Due
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Physiotherapy and Occupational therapy Herlev Hospital, Copenhagen University, Denmark
Abstract title	Translation and validation of the ICIQ-B in Danish men and women with pelvic floor disorders
Abstract text limited to 250 words (1800 symbols)	Background: The International Consultation on Incontinence Questionnaire-Bowel (ICIQ-B) contains 21 items of which 17 are scored in three subscales: Bowel pattern, Bowel control and Quality-of-life. Aim of this study was to translate the ICIQ-B into Danish and to validate the Danish version in pelvic floor disorder (PFD) patients with and without anal incontinence (AI). Material and methods: The ICIQ-B was translated by a panel followed by 30 cognitive interviews with PFD-patients. Test-retest of the ICIQ-B was completed online in REDCap together with the St. Marks score. Content validity; structural validity; convergent validity and discriminant validity were assessed followed by evaluation of relative and absolute reliability including smallest real difference (SRD). Results: After three revisions the Danish ICIQ-B was well accepted except for a lack of items addressing psychological impact. The ICIQ-B was completed online by 227 and the St. Marks score by 225. Significantly higher ICIQ-B scores and St. Marks scores were found in AI-patients. Structural validity of the bowel pattern subscale could not be retrieved. ICIQ-B scores correlated moderately with St. Marks scores. Internal consistency was good except for the bowel pattern subscale. Relative reliability was excellent for subscales and moderate/good for single items. The SRD was found to be 2.8 points for the bowel pattern subscale, 4.3 for the bowel control subscale and 3.6 for the quality-of-life subscale. Conclusions: The Danish ICIQ-B is well accepted by Danish PFD-patients. Discriminant validity and test-retest reliability is good while structural validity and internal consistency of the bowel pattern subscale is questionable.

Research Symposium 2024

Short electronic presentation

Surgery and Anesthesiology

Chair: Tove Holst Filtenborg Tvedskov

No.	Name	Abstract title
1	Adam Mandrup Timmermann	Microsurgical Sperm Extraction in Patients with Klinefelter Syndrome
2	Cecilie Balslev Willert	Psychological aspects of a bilateral risk-reducing mastectomy and immediate breast reconstruction- results from the HEBRECA study
3	Cornelia Lamprecht	Training Programmes for Healthcare Professionals in Managing Epidural Analgesia: A Scoping Review
4	Dagný Halla Ágústsdóttir	Frequency of urination dysfunction in patients operated for rectal cancer: a systematic review with meta-analyses
5	Emil Durukan	The association between clinical characteristics and cardiac dysfunction in men with erectile dysfunction: the EDcard prospective cohort study
6	Karoline Lundager	Detection of Germ Cell Neoplasia In Situ and Testicular Cancer Risk in Men with Testicular Microlithiasis
7	Kathrine Perslev	"The REPAIR Study: Short- and Long-Term Complications Following Second-Degree Tears and Episiotomy"
8	Madeline Kvist	Burst Abdomen after Emergency Laparotomy Decreases Health-Related Quality of Life: A Prospective Cohort Study
9	Marie Louise Jensen	Association between socioeconomic status and patient-reported outcome after shoulder arthroplasty for osteoarthritis or cuff tear arthropathy
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12	Søs Bohart	Correlation between subjective and objective cognitive function in post-intensive care patients: a dual-center prospective cohort study
13	Usamah Ahmed	Optimal mesh placement in elective primary ventral hernia repair: an international survey of surgeons
14	Viktor Frederik Bay Moseholm	The influence of experience on nerve identification during open inguinal hernia repair: a nationwide register-based study.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Urology
Abstract title	Microsurgical Sperm Extraction in Patients with Klinefelter Syndrome
Abstract text limited to 250 words (1800 symbols)	Introduction Men with Klinefelter Syndrome lack spermatozoa in the ejaculate. In some cases, it is possible to extract spermatozoa using a microsurgical approach called microdissection testicular sperm extraction (mTESE). In this study, we investigate the success rate of mTESE in patients with Klinefelter Syndrome, explore characteristics of identified spermatozoa, and identify factors associated with successful sperm retrieval. Methods: This is a retrospective study using patient records. Patients were included if they had Klinefelter Syndrome and had undergone mTESE between 09/2017 and 12/2023. Successful mTESE was defined as identification of spermatozoa suitable for cryopreservation. Statistical analyses were performed using descriptive statistics and logistic regression. Results: Thirty-seven patients were included in the study. Spermatozoa were successfully retrieved and cryopreserved in 17 cases (46%). The identified spermatozoa were immotile in 5 cases (29%), non-progressive motile in 10 cases (59%), and progressive motile in 2 cases (12%). Aside from a minor defect in the surgical wound, that did not require surgical intervention, no postoperative complications occurred. Higher preoperative levels of sex-hormone binding globulin, BMI under 25 kg/m2, and young age were associated with successful sperm retrieval ($p<0,05$). No association between sperm retrieval and preoperative testosterone, LH, FSH, estradiol, inhibin B, testis volume, and smoking was found. Conclusion: Spermatozoa were successfully retrieved in 46% of cases. This is in concordance with previous studies. Spermatozoa were motile in 71% of cases. Higher preoperative levels of sex hormone binding globulin, BMI under 25 kg/m2, and young age were associated with successful sperm retrieval.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Plastic Surgery, Copenhagen University Hospital, Herlev and Gentofte, Denmark
Abstract title	Psychological aspects of a bilateral risk-reducing mastectomy and immediate breast reconstruction- results from the HEBRECA study
Abstract text limited to 250 words (1800 symbols)	Aim/Background: Women carrying a pathogenic variant of the BRCA1 or BRCA2 gene have a lifetime risk of developing breast cancer of 45–90%. A bilateral risk-reducing mastectomy (BRRM) decreases this risk by approximately 98%. An immediate breast reconstruction (IBR) is often performed simultaneously. It is a major surgery that may affect quality of life. A tailored radiological surveillance program is the alternative offer. This study aimed to evaluate the changes in concerns of developing breast cancer and quality of life following a BRRM and IBR and compare the findings to women attending a surveillance program. Material and methods: Eligible patients were included from April 2019 to July 2023 at multiple departments of plastic surgery, radiology, and clinical genetics and placed in either of two groups: Surgery or Surveillance. Patient-reported outcomes were collected electronically using validated questionnaires at baseline and 3, 12, and 24 months post-surgery/post-baseline. Results: We included 35 and 37 patients in the two groups. We found significant reductions in concerns of developing breast cancer and physical well-being within the Surgery group, as well as significant between-group differences at all post-baseline time points. Sexual well-being was significantly lower post-reconstruction but did not differ significantly from the Surveillance group. Discussion/Conclusion: The results indicate that a BRRM and IBR effectively reduces concerns of developing breast cancer in women with a pathogenic BRCA1/2 variant both in the short- and long-term, but it comes with the price of reduced physical and sexual well-being. This information is important in the pre-operative alignment of expectations.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	1 Department of Orthopaedic Surgery, Herlev and Gentofte Hospital 2 Department of Anaesthesiology and Intensive Care Medicine, Herlev and Gentofte Hospital 3 Department of Clinical Medicine, University of Copenhagen
Abstract title	Training Programmes for Healthcare Professionals in Managing Epidural Analgesia: A scoping Review
Abstract text limited to 250 words (1800 symbols)	Introduction: Epidural analgesia is widely used for postoperative and labour-related pain relief. Systematic training of healthcare professionals, particularly surgical ward nurses, is essential for the safe administration of this complex technique. This scoping review aimed to identify and outline existing training programmes for managing epidural analgesia. Methods: Following PRISMA-ScR guidelines and Arksey and O'Malley's framework, a comprehensive search was conducted across databases including MEDLINE, CINAHL, EMBASE, ERIC, CENTRAL, and grey literature. Studies detailing training programmes for healthcare professionals managing epidural analgesia were included. Programmes focused solely on epidural catheter insertion were excluded. Data were synthesized using Kirkpatrick's framework to categorize outcome measures. Results: Eighteen studies were included. Training was delivered by anaesthesia departments, multidisciplinary teams, and nursing departments. Participants were primarily nurses (n=16), with physicians involved in six studies, and midwives and pharmacists in one study each. Sixteen studies employed varied instructional methods, including classroom education, online training, on-the-job training, workshops, and simulations. Content focused on anatomy, pain management, and pharmacology. Training duration ranged from brief sessions to extended, supervised programmes. Outcomes were measured through professional development (e.g., knowledge, competence) and clinical results (e.g., opioid use, complication rates). Conclusion: The review identified a range of training programmes for managing epidural analgesia, which varied considerably. Inconsistencies in format, content, and duration, along with a lack of standardized outcome measures, highlight the need for more standardized approaches in future research.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Surgery, Herlev Hospital
Abstract title	Frequency of urination dysfunction in patients operated for rectal cancer: a systematic review with meta-analyses
Abstract text limited to 250 words (1800 symbols)	Background: The frequency of long-term urination dysfunction after surgery for rectal cancer remains unclear, yet it is essential to establish this to improve treatment strategies. Methods: Randomized controlled trials (RCTs), non-RCTs, and cohort studies were included with patients having undergone sphincter-preserving total or partial mesorectal excision for the treatment of primary rectal cancer. The outcome was urination dysfunction reported at least three months postoperatively, both overall urination dysfunction and subdivided into specific symptoms. The databases PubMed, Embase, and Cochrane CENTRAL were searched. Bias was assessed using the Newcastle-Ottawa scale, and results were synthesized using one-group frequency meta-analyses. Results: A total of 55 studies with 15,072 adults were included. The median follow-up was 29 months (range 3–180). The pooled overall urination dysfunction was 21% (95% confidence interval (CI) 12%–30%) 3–11 months postoperatively and 25% (95% CI 19%–32%) ≥12 months postoperatively. Retention and incontinence were common 3–11 months postoperatively, with pooled frequencies of 11% and 14%, respectively. Increased urinary frequency, retention, and incontinence seem even more common ≥12 months postoperatively with pooled frequencies of 37%, 20%, and 23%, respectively. Conclusion: In conclusion, one in five patients experienced urination dysfunction more than a year following operation for rectal cancer.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Urology
Abstract title	The association between clinical characteristics and cardiac dysfunction in men with erectile dysfunction: the EDcard prospective cohort study
Abstract text limited to 250 words (1800 symbols)	Introduction: Erectile dysfunction (ED) is recognized as an early marker for cardiovascular disease (CVD), yet the specific clinical characteristics that correlate with cardiac dysfunction in men with ED remain unclear. We aimed to investigate the association between clinical characteristics and cardiac dysfunction as assessed with echocardiography in men with ED. Methods: In this cross-sectional study of men with ED, left ventricular (LV) systolic and diastolic dysfunction were assessed using echocardiography. Clinical characteristics such as age, body mass index (BMI), blood pressure, lipid profiles, high-sensitivity CRP (hs-CRP), and cardiovascular comorbidities were recorded and analyzed for their association with cardiac dysfunction. Results: In total, 398 men with ED were included. 41.7% had normal LV systolic function, 58.3% impaired. For LV diastolic function, 90.2% were normal, 9.8% impaired. BMI, diastolic blood pressure, and hs-CRP were associated with increased risk of LV systolic dysfunction with odds ratios of 1.08 (95% CI: 1.02-1.14), 1.03 (95% CI: 1.01-1.05), and 1.28 (95% CI: 1.03-1.59), respectively. Multivariate analysis identified dyslipidemia as an independent predictor of LV systolic dysfunction, with an odds ratio of 2.08 (95% CI: 1.07-4.17). Conclusion: Men with ED and LV systolic dysfunction have higher BMI, elevated hs-CRP, and increased diastolic blood pressure. Multivariate analysis identifies dyslipidemia as a significant risk factor for LV systolic dysfunction. These findings may improve the identification and management of cardiovascular risks in men with ED.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Urology, Copenhagen University Hospital, Herlev and Gentofte Hospital, Herlev, Denmark
Abstract title	Detection of Germ Cell Neoplasia In Situ and Testicular Cancer Risk in Men with Testicular Microlithiasis
Abstract text limited to 250 words (1800 symbols)	Introduction: Biopsies are recommended in men with testicular microlithiasis (TM) and additional risk factors to rule out germ cell neoplasia in situ (GCNIS). However, limited data supports this. We aimed to report outcomes for TM patients. Methods: We recorded clinical and ultrasound findings, and testicular cancer risk factors including atrophy, infertility, and cryptorchidism in men diagnosed with TM at Herlev and Gentofte Hospital from 2013–2023. Semen analyses were offered to those with unknown fertility. Biopsy results along with subsequent cancers were documented. The primary endpoints were GCNIS and testicular cancer rates. Results: We included 334 men with a median age of 33 years (range 16–73). TM was bilateral in 241 (72.2%). Atrophy was present in 27 men, infertility in 18, and cryptorchidism in 25, while 56 had multiple risk factors. Of the remaining men, 126/208 had never attempted fatherhood; 36 of these had reduced semen quality. 137 men (41%) underwent biopsies, with GCNIS detected in 10 (7.3%, 95% CI 3.6–13%). GCNIS was only found in testicles with TM and was associated with atrophy (n=7), infertility (n=1), and reduced semen quality (n=2). All GCNIS-positive cases had atrophy on orchiectomy. During a median follow-up of 4.7 years (range 1.16–11.49), 3 men (0.9%, 95% CI 0.19–2.6%) developed cancer, 2 of whom had previous biopsies without GCNIS. Conclusion: GCNIS was only found in cases with both TM and testicular atrophy, and the cancer risk was low, suggesting TM alone does not increase cancer risk in morphologically normal testicles.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Gynecology and Obstetrics.
Abstract title	"The REPAIR Study: Short- and Long-Term Complications Following Second-Degree Tears and Episiotomy"
Abstract text limited to 250 words (1800 symbols)	Introduction: Approximately 85% of women experience an obstetric tear during delivery, with up to 25% facing complications like wound dehiscence or infection. Previous studies suggest that administering intravenous antibiotics during delivery may reduce these risks. This study investigates whether three doses of oral antibiotics after delivery can reduce the risk of these complications in women with a second-degree tear or episiotomy. Methods: We conducted a randomized controlled trial (RCT) with 442 women who had a second-degree tear or episiotomy. Half of the participants (221 women) received three doses of prophylactic antibiotics, while the other half received a placebo. Primary outcomes, including wound infection and dehiscence, were assessed one week postpartum. A follow-up consultation was scheduled one year later to evaluate long-term outcomes. As these consultations are ongoing, blinding remains intact, and data are reported at the group level, not separated by antibiotic or placebo groups. Results: At the one-week follow-up, 25% of women experienced wound infection or dehiscence, with 13% considered clinically relevant. After one year, 14.8% had not resumed sexual intercourse, and 30% attributed this to tear-related symptoms. Among sexually active women, 18.7% reported frequent pain during intercourse, and 11.7% indicated that pain often or always limited their sexual activity. Conclusion: Significant complications were observed, affecting both immediate healing and long-term sexual health. Future analysis will determine if prophylactic antibiotics can reduce these complications.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Emergency Surgery Research Group Copenhagen (EMERGE), Department of Hepatic and Gastrointestinal Diseases, Copenhagen University Hospital - Herlev and Gentofte, Herlev, Denmark
Abstract title	Burst Abdomen after Emergency Laparotomy Decreases Health-Related Quality of Life: A Prospective Cohort Study
Abstract text limited to 250 words (1800 symbols)	Purpose: Burst abdomen is a severe complication after emergency laparotomy and is known to increase the risk of mortality, morbidity, incisional hernia, and a decrease in body image. No studies have explored Health-Related Quality of Life (HRQoL) in patients with burst abdomen. This study aimed to investigate and describe patient-reported consequences of a burst abdomen using HRQoL. Methods: This prospective, observational, single-center cohort study included 281 patients undergoing emergency laparotomy during a one-year period. Abdominal wall closure was standardized and documented during the study period. HRQoL was assessed using the EQ-5D-5L questionnaire four times during the study: in the immediate postoperative period as a baseline (assessed retrospectively) and on the 30th, 90th, and 180th postoperative days. Results: Of the total 281 included patients undergoing emergency laparotomy, 15 patients (5.3%) experienced a burst abdomen. Patients with burst abdomen reported lower HRQoL (46.7% vs. 25.2%; $p = 0.035$), and fewer had high HRQoL (13.3% vs. 38.3%; $p = 0.035$) on the 30th postoperative day compared to patients without burst abdomen. Reasons for lower HRQoL in patients with burst abdomen were found to be due to a negative influence on usual activities, self-care, and mobility. Conclusion: Patients with burst abdomen after emergency laparotomy have decreased short-term quality of life and experience more problems with usual activities, self-care, and mobility after surgery.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Orthopaedic Surgery
Abstract title	Association between socioeconomic status and patient-reported outcome after shoulder arthroplasty for osteoarthritis or cuff tear arthropathy
Abstract text limited to 250 words (1800 symbols)	Objective The purpose of the study was to evaluate the association between socioeconomic factors and patient-reported Western Ontario Osteoarthritis of the Shoulder (WOOS) index at 1 year after shoulder arthroplasty for osteoarthritis or cuff tear arthropathy. Design All eligible patients were identified using linked national data from the Danish Shoulder Arthroplasty Registry and Statistics Denmark between April 2012 and April 2019. Multivariable linear regression was used to identify the association between socioeconomic factors and the WOOS index at 1 year following primary shoulder replacement surgery adjusted for confounding variables. We examined socioeconomic factors including employment status, marital status, education and income. Results A total of 2,292 patients were identified with a mean WOOS index of 76.2 (SD 24.1). The mean WOOS index was 53.9 (SD 29.0) for patients who were unemployed, 72.3 (SD 25.0) for patients with a low-level job, 79.4 (SD 20.7) for patients with a high-level job and 77.1 (SD 23.6) for patients who were retired. Unemployed patients had a statistically significant lower WOOS index than employed and retired patients (coefficients between 13.8 and 18.6). Low education level was associated with a statistically significant, but not clinically important difference, while there was no association between WOOS index and income or marital status. Conclusions The results of this study indicate that unemployment is associated with worse patient-reported outcomes. Future studies should focus on the reason for this association, and especially, how healthcare providers can improve the outcome for deprived socioeconomic groups, including unemployed patients.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Plastic Surgery
Abstract title	MELACARE Nurse-led follow-up after early-stage melanoma: results of a randomised controlled trial
Abstract text limited to 250 words (1800 symbols)	Introduction: We developed the Melacare nurse-led intervention, which combines the management of fear of cancer recurrence (FCR) and education in skin self-examination (SSE) as a resource-conscious approach to detecting recurrence in patients surgically treated for early-stage melanoma. The potential of this combination is unexplored and, to the best of our knowledge, has never been evaluated in a randomised controlled trial (RCT). Methods: Melacare is a two-armed RCT in which eligible patients were randomised to either intervention (n=78) or usual care (n=75). Patients randomised to intervention received nurse-led follow-up, including management of FCR, education in SSE and self-requested clinical examinations. Usual care comprised regular follow-ups with a physician. The primary outcome was change in FCR assessed using the Danish version of the Concerns About Recurrence Questionnaire-4. Secondary outcomes included measures of depression, anxiety, distress, quality of life (QoL), patient activation, workability, the number of SSEs performed, use of health care services, and satisfaction. Results: A total of 153 patients were enrolled in the study. At six months, lower levels of FCR, depression, anxiety, and distress were seen in the intervention group but not statistically significant. Statistically significant improvement in QoL, workability, and patient activation was reported in the intervention group. No difference was seen in the number of SSEs and extra clinical examinations. Satisfaction was higher in the intervention group. Conclusion: Melacare demonstrates promising potential to improve QoL, workability, and patient activation. While not all measures reached statistical significance, the nurse-led approach shows higher satisfaction and a pathway for patient empowerment.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Perioperative Optimization, Department of Surgery, Herlev Hospital
Abstract title	Individually tailored prehabilitation for risky lifestyles before ventral hernia repair: a protocol for a randomized controlled trial (STRONG-Hernia)
Abstract text limited to 250 words (1800 symbols)	Background: A substantial untapped potential for risk reduction may be fulfilled by applying intensive lifestyle interventions targeting the co-existing risky lifestyles Smoking, Nutrition (both malnutrition and obesity), risky Alcohol intake, and Physical inactivity (SNAP factors) before surgery. This trial will compare the effect of individually tailored prehabilitation with standard care on postoperative outcomes, health, and cost-effectiveness in short and long term in patients undergoing ventral hernia repair. Methods: The study is a multicenter, parallel-group, randomized clinical trial. A total of 400 patients undergoing ventral hernia repair with ≥ 1 SNAP factor will be allocated to the individually tailored STRONG program or standard care. The STRONG program is initiated at least four weeks before surgery and consists of six sessions with one session per week. They include patient education, motivational, and pharmaceutical support. The primary outcome is postoperative complications requiring treatment within 30 days. Secondary outcomes address other surgical outcomes, health, and cost-effectiveness. Follow-up takes place after 6 weeks/at surgery and postoperatively after 30 days, 90 days, and 6 months. Long-term data on health and costs will be obtained from nationwide registries after two years. Results: Approvals from the Ethical Committee (H-23028872) and the Danish Data Protection Agency (P-2023-14284) have been obtained. Inclusion began in March, 2024. Conclusion: Individually tailored prehabilitation could potentially turn the waiting time for elective surgery into an asset if it improves postoperative outcomes and have long-lasting implications on patient health.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Anesthesiology and Herlev ACES, Herlev Anesthesia Critical and Emergency Care Science Unit, Copenhagen University Hospital, Herlev-Gentofte, Copenhagen, Denmark.
Abstract title	Correlation between subjective and objective cognitive function in post-intensive care patients: a dual-center prospective cohort study
Abstract text limited to 250 words (1800 symbols)	Objectives: To evaluate the correlation between a subjective and an objective tool to assess cognitive function in a cohort of intensive care unit (ICU) survivors three months after discharge, and to explore associated factors. Research design: Prospective cohort study. Setting: Two university ICUs in the Netherlands. Main outcome measures: Correlation between subjective (Cognitive Failure Questionnaire [CFQ-14]) and objective (modified Telephone Interview for Cognitive Status [TICS-m]) cognitive function scores and factors associated with either subjective or objective cognition. Results: 380 patients were included between July 2020-July 2022, of whom 20% (n=76) had cognitive impairment (based on only CFQ-14 score ≥ 43, (n=19), 5%; based on only TICS-m score ≤ 33, (n= 53), 14%; based on both definitions, (n=4), 1%). CFQ-14 and TICS-m scores were not clinically relevant correlated ($r=-0.12$, $p=0.02$). Using multiple linear regression, depression (Hospital Anxiety and Depression Scale) scores were significantly associated with standardized CFQ-14 scores (adjusted β 0.17; 95% CI 0.09 – 0.25; $p<0.01$), whereas age (adjusted β -0.02; 95% CI -0.04 – -0.01; $p<0.01$) and sedation-induced coma (adjusted β -0.40; 95% CI -0.81 – -0.01; $p=0.05$) were significantly associated with standardized TICS-m scores. Conclusion: No clinically relevant correlation was found between subjective and objective cognitive functioning. Depression scores were associated with subjective cognition scores, whereas age and sedation-induced coma were associated with objective cognition scores. Implication for clinical practice: The presence of subjective cognitive complaints may not be a reliable indicator of objective cognitive impairment, and vice versa. Although both tools may be equally valuable, they should not be interpreted interchangeably.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Perioperative Optimization, Department of Surgery, Herlev Hospital, University of Copenhagen, Denmark
Abstract title	Optimal mesh placement in elective primary ventral hernia repair: an international survey of surgeons
Abstract text limited to 250 words (1800 symbols)	Introduction Primary ventral hernia repair techniques vary globally, with surgeons' choice of mesh placement influenced by knowledge of postoperative complications, patient characteristics, and surgeon demographics as well as surgeon expertise. This study aims to clarify global surgeon preferences and considerations when selecting anatomical layers for mesh placement in primary ventral hernia repairs. Methods This observational cross-sectional study, reported according to STROBE and CROSS guidelines, used a web-based survey distributed through international hernia societies and hernia-focused social media. It included surgeon demographics and explored preferences for mesh placement across anatomical planes with particular attention to complications and hernia defect size. Results Data collection is ongoing, and the manuscript is expected to be completed by the end of October. Conclusion Data collection is ongoing, and the manuscript is expected to be completed by the end of October.

Research Symposium 2024

Name of presenter	Viktor Bay Moseholm
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Perioperativ Optimering, Afdeling for Mave-, Tarm- og Leversygdomme, Herlev Hospital.
Abstract title	The influence of experience on nerve identification during open inguinal hernia repair: a nationwide register-based study.
Abstract text limited to 250 words (1800 symbols)	Introduction Routine nerve identification may reduce chronic pain following open inguinal hernia repair. Surgeon volume typically improves surgical outcomes and may also enhance nerve identification rates. This study aimed to examine the relationship between surgeon experience and the identification rates of the ilioinguinal and iliohypogastric nerves. Methods Data from the Danish Hernia Database and the Danish Patient Safety Authority's Register (2016–2023) were used. Patients aged 18 or older undergoing Lichtenstein hernia repair were included. Annual surgical volume was categorized as ≤ 9, 10–19, 20–29, and ≥ 30 cases/year. Nerve identification rates were compared across these volume groups. The study adhered to the RECORD guideline. Results We identified 21,975 inguinal hernia repairs to calculate annual surgical volumes. After exclusions, 17,792 repairs by 911 surgeons were analyzed, with specialized surgeons performing 58% of operations. Overall, nerve identification rates were 74% for the ilioinguinal nerve and 68% for the iliohypogastric nerve. Nerve identification significantly increased with annual surgical volume for the iliohypogastric nerve. For the ilioinguinal nerve, identification significantly increased with annual volume between the ≤ 9, 10–19 and 20–29 cases/year groups. However, nerve identification was not significantly different between the 20–29 and ≥ 30 cases/year groups. Conclusion Increased annual surgical volume improves nerve identification rates, with a plateau at 20–29 annual cases for the ilioinguinal nerve. These findings may inform future educational guidelines in general surgery.

Research Symposium 2024

Short electronic presentation

Paraclinical studies

Chair: Thordis Thomsen

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3	Andreas Holst Lange	PYY is increased in individuals with Bile Acid Diarrhoea
4	Anne Marie Beck	NUTRITIONAL INTAKE AND PREVALENCE OF MALNUTRITION ACCORDING TO GLIM CRITERIA IN DANISH
5	Benjamin Nilsson Wadström	Elevated remnant cholesterol, LDL cholesterol, and risk of peripheral artery disease: a Mendelian randomization study
6	Elna A. Dalsgaard	The Effect of Oral Nutritional Supplements on Muscle Strength in Hip Fracture Patients (NUTRI-MUSCLES) – A Feasibility Trial for an RCT
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9	Martine Kjærsgaard Nielsen	Detection and treatment of dehydration is feasible in the emergency department (ED)
10	Melanija Talijanovic	Integrated mRNA-microRNA signatures associated with chemotherapy resistance in ovarian cancer
11	Nikolaj Ebbesen Sørup	The glucagonotropic effect of GIP in type 1 diabetes is abolished during insulin-induced hypoglycemia
12	Peter Engel Thomas	Lipoprotein(a) associated risk of atherosclerotic cardiovascular disease is independent of C-reactive protein
13	Sara Cocchi	Transcriptome signature associated with chemotherapy resistance in BRCA wild-type patients with high-grade serous ovarian cancer
14	Tummas Ternhamar	Combination of cardioprotective glucose-lowering drugs and statins on all-cause mortality

Research Symposium 2024

Name of presenter	Aliya Marie Thomas
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Clinical Metabolic Research, Gentofte Hospital
Abstract title	Additive glucagonotropic and insulinotropic effects of glucose-dependent insulinotropic polypeptide (GIP) and alanine in fasted healthy men
Abstract text limited to 250 words (1800 symbols)	Background: GIP has bidirectional effects on plasma glucose levels via its insulinotropic and glucagonotropic properties exerted during hyperglycaemia and hypoglycaemia, respectively. In vitro, GIP potentiates the glucagonotropic and insulinotropic effects of alanine. Here, we evaluated the effects of GIP and alanine infusions on plasma glucagon and insulin levels in fasted healthy men. Materials and methods: In this placebo-controlled, randomized, double-blind crossover study, 10 fasting healthy men (mean $\pm$ SD; age 22.9 ± 2.8 years, BMI 23.7 ± 2.1 kg/m²) underwent four experimental days involving continuous 90-minute i.v. infusions of GIP (6 pmol/kg/min for 10 minutes and then 4 pmol/kg/minute for 80 minutes), alanine (28 μmol/kg/min), GIP + alanine, and saline, respectively. Differences in area under the curve (AUC) were evaluated using Student's t test with Benjamini-Hochberg control for false discovery rate. Results: Both GIP and alanine stimulated glucagon secretion with additive effects during co-infusion eliciting greater placebo-corrected AUC (GIP+Alanine: $1,613 \pm 719$ (mean $\pm$ SD) min $\times$ pmol/l) as compared to each of the separate infusions (Alanine: 995 ± 445 min $\times$ pmol/l, $p = 0.005$; GIP: 298 ± 226 min $\times$ pmol/l, $p < 0.0001$). Likewise, co-infusion elicited an additive effect on C-peptide levels evaluated from placebo-corrected AUCs (GIP+Alanine: $25,999 \pm 11,859$ (mean $\pm$ SD) min $\times$ pmol/l; Alanine: $16,711 \pm 11,359$ min $\times$ pmol/l, $p = 0.02$; GIP: $9,803 \pm 9,553$ min $\times$ pmol/l, $p = 0.0002$). Conclusion: GIP and alanine have additive glucagonotropic and insulinotropic effects in fasted healthy men supporting GIP's glucose stabilising effects during alanine abundance.



Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	The Dietitian and Nutritional Research Unit, EATEN, Copenhagen University Hospital – Herlev and Gentofte, Copenhagen, Denmark
Abstract title	Nutritional requirements and intake in patients admitted to the Department of Gastroenterology
Abstract text limited to 250 words (1800 symbols)	Introduction Assessing nutritional requirements and accurately documenting intake are essential steps for delivering personalized nutritional care to patients at nutritional risk. Therefore, we examined the number of patients with energy requirement and intake documented in the medical records, as well as the prevalence of patients who met their energy requirement. Methods A quality insurance study including patients at nutritional risk from the Department of Gastroenterology, Herlev Hospital. From the medical journals, data on nutritional-risk, sex, age, BMI, level of activity, nutritional requirements, and nutritional intake was collected. Energy requirement was measurement with indirect calorimetry and nutritional intake was assessed by a 24-hour recall. To determine total energy requirements, the resting energy expenditure were multiplied with a factor for level of activity (1.1-1.3). Results We included n=60 (45% men) at nutritional risk. Of these n=35 (58%) from the surgical wards, and n=25 (42%) from the medical ward. Their median age was 72 (IQR:64–81) years, and median BMI 23.5 (IQR:20.2–26.1) kg/m². In patients at nutritional risk energy requirements were recorded in n=51 (86%), and energy intake for the entire day in n=11 (18%) of the medical records. Total nutritional requirement was assessed to median 29.7 (IQR:26.5–32.7) kcal/kg/d. The 24-hour recall showed a median nutritional intake of median 18.8 (IQR:12.9–25.1) kcal/kg/d. Energy requirement of $\geq 75\%$ was met in n=24 (40%) of patients. Conclusions Nutritional intake is scarcely documented in the patient's medical records and less than half of the patients reach their nutritional goals.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Clinical Metabolic Research - Gentofte Hospital
Abstract title	PYY is increased in individuals with Bile Acid Diarrhoea
Abstract text limited to 250 words (1800 symbols)	INTRODUCTION Bile acid diarrhoea (BAD) is a debilitating disease characterized by chronic and watery diarrhoea due to excess bile reaching the colon resulting in increased water secretion and motility. Since bile acids may stimulate the release of gut hormones, including PYY implicated in diarrheal pathophysiology, we investigated fasting as well as postprandial plasma levels of PYY in BAD and healthy controls. METHODS Total PYY concentrations were measured in plasma samples from 12 individuals with colesevelam-treated idiopathic or post-cholecystectomy BAD and 12 healthy controls matched on age, sex and body mass index undergoing two 4-hour liquid mixed meal tests on separate days with either the bile acid sequestrant colesevelam (1,875 mg) or placebo performed in a randomized and double-blinded order. RESULTS When comparing the two groups on placebo days, individuals with BAD exhibited higher mean fasting PYY concentrations (95.8 [SEM 12.6] pg/ml vs. 51.5 [12.6] pg/ml, $P=0.0095$) and AUC (27.1 [3.0] ng/ml $\times$ min vs. 16.5 [2.4] ng/ml $\times$ min, $P=0.0087$) whereas bsAUC was similar between groups (4.1 [1.9] ng/ml $\times$ min vs. 4.1 [1.6] ng/ml $\times$ min, $P=0.99$). Compared to placebo, colesevelam did not significantly affect PYY levels postprandially in any of the groups. CONCLUSION Here, we demonstrate elevated fasting PYY levels, but normal postprandial PYY responses in individuals with BAD compared to carefully matched healthy controls supporting the notion that bile acids in the gut lumen stimulates the secretion of PYY in individuals with BAD. How these elevated PYY levels contribute to or might counteract BAD pathophysiology remains uncertain.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	The Dietitians and Nutrition Research Unit, EATEN, Herlev Gentofte University Hospital, Copenhagen, Denmark
Abstract title	NUTRITIONAL INTAKE AND PREVALENCE OF MALNUTRITION ACCORDING TO GLIM CRITERIA IN DANISH
Abstract text limited to 250 words (1800 symbols)	Rationale: A cohort study conducted in 2019 at our hospital revealed, that patients at nutrition risk had a low coverage of nutritional requirement. Since then, a more protein dense digital food-concept has been implemented. To encourage patient involvement, intake of requirements can be followed by a nutritional barometer. Primary aim of this study was, to investigate the effect of this initiative on nutritional coverage in nutritional at-risk patients. Secondary, the prevalence of malnutrition according to GLIM was investigated. Methods: The study, was performed at Herlev Hospital, in September 2023. Patients >18 and hospitalized for >4 days were enrolled. Exclusion criteria: admission to the intensive, palliative, emergency, or maternal ward. Patients at nutrition risk (NRS-2002) underwent a 24-h dietary recall to assess nutritional coverage. To assess malnutrition the GLIM criteria were assessed. Muscle mass was measured using edema and BMI adjusted calf circumference (Cut-off F:<32 and <M:33) and p-CRP to assess stress metabolism. Results: 124 (F:52%) patients were included. Median age 75y (IQR:66-83), 81 (65%) were at nutrition risk. 69 at-risk patients had their dietary intake assessed. Compared to the 2019 study a higher prevalence achieved 75% of energy and protein requirement, respectively (E:70% vs. E:36%, $p<0.001$, P:51% vs. P:24%, $p<0.001$). 58 at risk patients could be assessed for malnutrition and of these 43 (74%) were diagnosed as malnourished. Conclusion: Implementing a digital food concept with focus on patient empowerment may have a positive effect on nutritional coverage. However, more effort is needed to secure nutritional intake, especially protein. However, more effort is needed to secure nutritional intake, especially protein. A high prevalence of patients is decidedly malnourished.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Clinical Biochemistry
Abstract title	Elevated remnant cholesterol, LDL cholesterol, and risk of peripheral artery disease: a Mendelian randomization study
Abstract text limited to 250 words (1800 symbols)	Background: Elevated remnant cholesterol and low-density lipoprotein (LDL) cholesterol both increase risk of coronary artery disease (CAD), but it is not known if the same is true for peripheral artery disease (PAD). We tested the hypothesis that elevated remnant cholesterol and LDL cholesterol, each independent of the other, have causal effects on risk of PAD. Methods: We constructed genetic scores from variants near genes known to directly affect levels of remnant cholesterol and LDL cholesterol, identified through a genome-wide association study of individuals in the UK Biobank. We used univariable (remnant cholesterol and LDL cholesterol genetic scores separately) and multivariable (remnant cholesterol and LDL cholesterol genetic scores combined) Mendelian randomization to estimate the causal effects of higher remnant cholesterol and LDL cholesterol levels on odds ratios for PAD (N = 38,414 cases and 758,308 controls) and CAD (N = 221,445 cases and 770,615 controls). Results: Increments in remnant and LDL genetic scores corresponding to 1 mmol/L (39 mg/dL) higher remnant and LDL cholesterol, respectively, were associated with univariable odds ratios for PAD of 2.72 (95% confidence interval: 2.10-3.52) and 1.37 (1.25-1.51), respectively; corresponding multivariable odds ratios were 2.16 (1.49-3.12) and 1.14 (1.00-1.30), respectively. Conclusions: Elevated remnant cholesterol had a causal effect on risk of PAD even after accounting for elevated LDL cholesterol, whereas most of the causal effect of elevated LDL cholesterol on risk of PAD was dependent on simultaneously elevated remnant cholesterol.

Research Symposium 2024

Name of presenter	Elna A. Dalsgaard
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Dietetic and Nutritional Research Unit (EATEN)
Abstract title	
Abstract text limited to 250 words (1800 symbols)	Background: Malnutrition and dehydration are prevalent issues among older patients with hip fractures. Nutritional support is therefore recommended to continue after hospitalisation. This trial aimed to assess feasibility of recruitment, retention rate, planned study methods, and compliance. Methods: Patients > 65 years old at nutritional risk admitted with a hip fracture at the orthopedic surgical ward at Herlev-Gentofte University hospital, Herlev, Denmark (December 2023-September 2024) were included. Participants were randomized to receive oral nutritional supplementation (ONS) twice a day for 12 weeks (intervention) or standard care (control). The primary outcome was recruitment and retention rate. Secondary outcomes were completeness of data collection (30-seconds chair stand test, physical function, muscle strength, quality of life, blood samples, appetite, and frailty) and compliance to ONS. A completeness rate 80% was considered feasible. Results : Out of 144 eligible patients, 51 (35%) accepted participation, 25 participants were allocated to the intervention group and 26 to the control group. Recruitment rate was 2.2 participants per week and retention rate was 42/51 (82%). At baseline, 13/51 (25%) could perform the 30-seconds chair stand test. All other data at baseline and follow-up was collected successfully. Mean compliance to the ONS was 65%. Discussion: Recruitment and retention rate were adequate compared to similar studies. The majority of planned methods for data collection were feasible with completeness 80%. Adjustments to improve compliance will be considered. The definitive study is currently recruiting and aims to include a total of 124 participants . Preliminary results will be presented at the symposium. Trial registration: ClinicalTrials.gov identifier: NCT05556876.

Research Symposium 2024

Name of presenter	Ida Marie Gether
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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Clinical Metabolic Research, Copenhagen University Hospital – Herlev and Gentofte, Hellerup, Denmark
Abstract title	Increased gallbladder emptying and reduced GLP-1 response in pregnancy with and without gestational diabetes mellitus
Abstract text limited to 250 words (1800 symbols)	Introduction. Gestational diabetes mellitus (GDM) has been associated with reduced postprandial glucagon-like peptide 1 (GLP-1) responses. As pregnancy induces changes in gallbladder motility and bile acids stimulate GLP-1 secretion, we investigated postprandial gallbladder emptying and GLP-1 responses in women with GDM. Methods. Women with and without GDM underwent two 240-minute mixed meal tests; one during third trimester of pregnancy and one 3-6 months postpartum. We evaluated ultrasonography-assessed gallbladder emptying, plasma concentrations of glucometabolic hormones including GLP-1, paracetamol absorption (proxy for gastric emptying) and circulating factors known to affect gallbladder dynamics. Results. Fifteen women with GDM and 15 pregnant women with normal glucose tolerance (baseline median age 31 (interquartile range 29;33) vs 32 (28;33) years, body mass index (BMI) 27.2 (24.7;30.7) vs 28.4 (26.2;31.0) kg/m², HbA1c 30 (29;32) vs 30 (28;31) mmol/mol) were included. No differences in postprandial gallbladder emptying or GLP-1 responses were observed between women with and without GDM, neither during pregnancy nor postpartum. Pregnancy increased fasting gallbladder volumes by 69 (30;122)% and 103 (59;156)% and postprandial gallbladder emptying by 77 (28;236)% and 99 (37;190)% compared with postpartum in women with and without GDM, respectively. Postprandial GLP-1 responses were reduced by 60 (3;82)% and 81 (11;90)% during pregnancy compared with postpartum in women with and without GDM, respectively. Conclusion. Pregnancy-induced changes in gallbladder motility seem to play no or a limited role in previously reported GDM-associated reduced postprandial GLP-1 responses as gallbladder emptying was greater and postprandial GLP-1 response was lower in pregnancy than postpartum regardless of GDM status.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	The Dietitian and Nutritional Research Unit, EATEN
Abstract title	Predicted estimates versus measured resting energy requirement in patients with liver cirrhosis
Abstract text limited to 250 words (1800 symbols)	Introduction: In patients with liver cirrhosis total energy expenditure (TEE) is recommended to be higher than in patients with other diseases. Therefore, it is recommended to measure resting energy expenditure (REE) with indirect calorimetry (IC). If IC is not available, a predictive formula is recommended. The objective was to examine the agreement between measured-TEE and predicted-TEE testing a variety of formulas. Further, to determine if the degree of agreement was associated with specific characteristics. Methods: REE was measured by IC and converted to measured-TEE by an activity factor (AF). Predicted-TEE was calculated by Harris-Benedict (HB) and 27, 30 and 35 kcal/kg actual weight and adjusted body weight (ABW). Further data was collected on, anthropometry, vital values, blood samples, ascites, Child Pugh score, and AF. Results: A total of 37 patients were included. IC measurements adjusted by AF was mean 27.8 ± 5.4 kcal/kg. Expressed by $\pm 10\%$, HB and 27 kcal/kg had highest agreement with measured-TEE equal to 40.5%. A significant negative correlation was found between the degree of agreement with HB, 30 and 35 kcal/kg ABW and heart rate ($p < 0.05$). A negative correlation between temperature and degree of agreement with all tested variables was furthermore found ($p < 0.05$). Lastly, a negative correlation was found with Child Pugh points, when calculated by 30 kcal/kg ABW ($p < 0.05$). Conclusion: In the majority of patients energy requirement were either overestimated or underestimated, depending on the predicted TEE used. Negative correlations with the degree of agreement were found with heart rate, temperature, and Child Pugh points.

Research Symposium 2024

Name of presenter	Martine Kjærsgaard Nielsen
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Research Symposium 2024

Department of main author/ presenter, no name of the author	The Dietitian and Nutritional Research Unit, EATEN, Copenhagen University Hospital - Herlev and Gentofte, Copenhagen, Denmark
Abstract title	Detection and treatment of dehydration is feasible in the emergency department (ED)
Abstract text limited to 250 words (1800 symbols)	Introduction A former study from our ED has shown a high prevalence of undiagnosed dehydration, and a high prevalence of readmissions (40%) and mortality (30%) among those who were dehydrated. The aim of the present study was to test the feasibility of detection and treatment of dehydration (and malnutrition) in the ED. Methods Patients 65 years was screened for dehydration by means of the calculated p-osmolality where a result >295 indicated dehydration. The patients received dietary counselling and follow-up at day 4 and day 30 after discharge by dieticians in the four involved municipalities. Data on feasibility (acceptance to participate, retention, and compliance), patient satisfaction, 30-days readmissions and mortality rates were collected. Results 60 (58%) accepted the invitation to participate (60% men, median age 83 (IQR: 78-87) years). It was possible to calculate p-osmolality in 92% patients at baseline. 45% was dehydrated but only 2% was diagnosed with dehydration. 97% was malnourished. The retention rate was 90% and for the remaining participants the compliance to the dietary counseling was 100%. 87% was to a great extent or to a very great extent satisfied with participating in the study. The prevalence of readmissions was 19% and mortality 7%. Conclusions Detection and treatment of dehydration was feasible, and the prevalence of readmissions and mortality were lower than in the former study.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Pathology, Herlev Hospital.
Abstract title	Integrated mRNA-microRNA signatures associated with chemotherapy resistance in ovarian cancer
Abstract text limited to 250 words (1800 symbols)	Introduction: Ovarian cancer (OC) is one of the most common and most lethal gynecological disease worldwide, with epithelial OC as the predominant form. The standard treatment for OC patients is surgery followed by platinum-based chemotherapy, benefiting 80% of OC patients. However, about 75% of advanced OC patients relapse within the first three years, highlighting the need for a biomarker that can predict platinum resistance. This study aims to explore mRNA-miRNA signatures linked to platinum resistance in OC. Method: In own cohort, differentially expressed genes (DEGs) and miRNA were identified between platinum-resistant (R) and -sensitive (S) patient. These genes were validated in 12 external cohorts from GEO and TCGA. The identified mRNA-miRNA pairs were validated in miRTarBase, ensuring robust validation of potential biomarkers linked to platinum-based chemotherapy resistance. Pathway enrichment analysis (PEA) was performed to get insight into specific biological pathways that might be altered in response to platinum-based treatments. Results: Preliminary findings from our comprehensive analysis identified potential mRNA-miRNA signatures associated with platinum resistance in OC patients. PEA revealed several biological pathways in which DEGs were involved. Conclusion: The discovery of integrated mRNA-microRNA signatures and biological pathways enables insights into the mechanisms of resistance and potential in identifying biomarkers for prediction of platinum-based chemotherapy resistance in OC patients. These biomarkers could aid in personalizing treatment strategies, sparing patients from ineffective therapies and add to precision medicine strategies. Further validation is required to ensure clinical applicability.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Center for Klinisk Metabolisk Forskning, Medicinsk Afdeling, Gentofte Hospital
Abstract title	The glucagonotropic effect of GIP in type 1 diabetes is abolished during insulin-induced hypoglycemia
Abstract text limited to 250 words (1800 symbols)	Introduction: The gut-derived hormone glucose-dependent insulintropic polypeptide (GIP[1-42]) has been shown to increase glucagon levels during normal-to-low plasma glucose concentrations in individuals with type 1 diabetes (T1D); potentially safeguarding against hypoglycaemia. Here, we evaluated the effects of exogenous GIP[1-42] and its truncated version GIP[1-30]NH₂, also shown to act glucagonotropically, on glucagon secretion during insulin-induced hypoglycaemia in individuals with T1D. Methods: Male individuals with T1D were recruited to a randomised, double-blind, placebo-controlled, crossover study involving five study days. Each day was initiated at euglycaemia and involved an iv infusion (time 0-135 min) of GIP[1-42] (4 or 8 pmol/kg/min), GIP[1-30]NH₂ (4 or 8 pmol/kg/min), or placebo (saline) and a 60-minute 1.5 mU/kg/min iv insulin infusion (time 30-90 min). When blood glucose reached 2.5 mmol/l, it was clamped until time 90 min after which recovery was monitored (time 90-135 min). The primary outcome was baseline-subtracted area under the curve (bsAUC) for plasma glucagon and secondary outcomes included amount of glucose infused. Results: Ten participants were included (age [mean±SD]: 31±10.1 years, BMI: 23.5±3.0 kg/m², HbA1c: 48.8±6.7 mmol/mol, stimulated C-peptide: 30.8 ±21.5 pmol/l). Both GIP variants increased plasma glucagon significantly before initiation of the insulin infusion, but no differences were found in bsAUC for glucagon between interventions. However, less glucose was required to maintain the hypoglycaemic clamp during high-dose GIP[1-42] compared to placebo (0.18±0.12 vs. 0.28±0.14 g/kg, p = 0.029). Conclusion: In persons with T1D, exogenous GIP increased plasma glucagon levels during euglycaemia, but insulin-induced hypoglycaemia eliminated this effect. Nevertheless, the highest dose of GIP[1-42] reduced the amount of glucose needed to maintain the hypoglycaemic clamp.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Clinical Biochemistry
Abstract title	Lipoprotein(a) associated risk of atherosclerotic cardiovascular disease is independent of C-reactive protein
Abstract text limited to 250 words (1800 symbols)	Background: Elevated lipoprotein(a) is considered a causal risk factor for atherosclerotic cardiovascular disease (ASCVD). Recent studies have reached contrasting conclusions on whether low-grade inflammation measured by elevated C-reactive protein (CRP) modifies the risk of ASCVD from high lipoprotein(a). We tested the hypothesis that high lipoprotein(a) associates with risk of recurrent ASCVD irrespective of elevated or low CRP. Methods: We included 3,543 individuals with prevalent ASCVD from the Copenhagen General Population Study (CGPS). Hazard ratios (HR) for ASCVD were examined stratified by CRP (<2 mg/L and $\geq$2 mg/L). Furthermore, random-effects meta-analyses in primary (incident events) and secondary (recurrent events) prevention were conducted separately, including studies on lipoprotein(a) and risk of ASCVD stratified by CRP. Results: In the CGPS, multivariable adjusted hazard ratios for ASCVD for high vs. low lipoprotein(a) were 1.41(1.19-1.67) and 1.31(1.08-1.59) in individuals with low or elevated CRP with no evidence of effect modification ($p=0.11$). When risk estimates for ASCVD were summarized in separate meta-analyses for primary and secondary prevention settings, a 50 mg/dL higher lipoprotein(a) was associated with increased risk of ASCVD irrespective of CRP levels. Conclusion: High lipoprotein(a) was associated with increased risk of ASCVD irrespective of CRP levels both in primary and secondary prevention settings.

Research Symposium 2024

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Pathology, Herlev Hospital
Abstract title	Transcriptome signature associated with chemotherapy resistance in BRCA wild-type patients with high-grade serous ovarian cancer
Abstract text limited to 250 words (1800 symbols)	Introduction: High-grade serous ovarian cancer (HGSOC) is characterized by the highest mortality rate among female malignancies, largely because of the absence of early screening routines along with non-specific symptoms. Moreover, 70% of patients experience a relapse within three years after receiving first-line platinum-based chemotherapy, which significantly reduces survival rates. Discovering and validating reliable biomarkers to predict chemotherapy resistance in clinical practice remain a crucial challenge for improving patient survival. The purpose of this study is to identify a transcriptomic signature predictive for resistance to chemotherapy in BRCA1/2 wild-type HGSOC patients. Methods: The study cohort consists of BRCA1/2 wild-type patients (80%) and BRCA1/2 mutated patients (20%). Patients are grouped into sensitive, partially sensitive, and resistant, determined by the platinum-free interval after first-line platinum-based treatment. RNA sequencing investigating 20.000 target genes is performed on patient tissues collected at the time of the surgery and stored as formalin-fixed, paraffin-embedded blocks. Results: A comprehensive analysis has been performed to unveil potential gene candidates that could serve as predictive signatures for chemotherapy resistance in BRCA1/2 wild-type patients. Furthermore, the validation of these gene candidates will be conducted using publicly available external datasets, ensuring the robustness and generalizability of our findings in a Danish study cohort. Conclusion: The identification of RNA-sequencing signatures predictive of patient's response to first-line chemotherapy holds the potential to greatly improve the strategies of personalized treatments, thereby improving overall patient survival.

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Research Symposium 2024

Department of main author/ presenter, no name of the author	Department of Clinical Biochemistry
Abstract title	Combination of cardioprotective glucose-lowering drugs and statins on all-cause mortality
Abstract text limited to 250 words (1800 symbols)	Background: Cardioprotective glucose-lowering drugs and lipid-lowering statins are both used to prevent morbidity and mortality in individuals with type 2 diabetes. We tested the hypothesis that a combination of cardioprotective glucose-lowering drug and statin is associated with lower risk of all-cause mortality than either drug alone. Methods: We identified individuals in Denmark with type 2 diabetes from December 2012 through December 2021, and categorized them into four groups according to treatment status: i) no cardioprotective treatment, ii) statin, iii) cardioprotective glucose-lowering drug, and iv) cardioprotective glucose-lowering drug and statin. Using a simple cohort design we followed 197,507 people with type 2 diabetes from January 2015 through December 2021, while using a time-varying cohort design we followed 354,979 people with type 2 diabetes and updated treatment and covariate status annually from 2013 through 2021. All-cause mortality was from the Danish Central Person Registry. Results: During mean follow-ups of 6.1 and 6.0 years, 50,571 and 80,712 died in the simple and time-varying cohorts. In the simple cohort compared with no cardioprotective treatment, adjusted hazard ratios for all-cause mortality were 0.60(95% confidence interval:0.57–0.63) for combination of cardioprotective glucose-lowering drug and statin, 0.76 (0.74–0.77) for statin alone, and 0.76(0.70–0.82) for cardioprotective glucose-lowering drug alone. Corresponding ratios in the time-varying cohort were 0.43(0.42–0.45), 0.63(0.62–0.64), and 0.61(0.58–0.64), respectively. Conclusions: In individuals with type 2 diabetes, treatment with a combination of cardioprotective glucose-lowering drug and statin was associated with a lower risk of all-cause mortality than using either drug alone.