

11<sup>th</sup> Nordic Conference of Epidemiology and Register-based Health Research  
(NordicEpi 2024)

## **Abstract book**

**Poster presentations**  
**June 12, 2024**

## Overview

- 10** Health status or education levels in adulthood as proxy measures for unavailable childhood health status or parental education in survey data. **Juber N**, Ahmad A.
- 12** Associations between bioaerosols, lung function work-shift changes and inflammatory markers: A study of recycling workers. **Hansen KK**, Schlünssen V, Broberg K, Østergaard K, Frederiksen M, Sigsgaard T, Madsen AM, Kolstad H.
- 14** Identifying office workers from self-reported information about occupation in a large population-based Swedish study (LifeGene). **Lehtinen-Jacks S**, Tillander A, Singh N, Ullberg OH, Florin U, Bälter K.
- 16** 25-year trends in first-time hospitalizations for Parkinson's Disease and subsequent mortality: A Danish nationwide cohort study. **Osler M**, Okholm G, Jørgensen TSH, Roizing MP.
- 17** Disturbed glucose metabolism is associated with various functional somatic disorders. The DanFunD study. **Dantoft TM**, Bjerregaard AA, Wellnitz KB, Ørnbo E, Kårhus LL, Petersen MW, Schovsbo SU, Jørgensen T.
- 19** Contributions of injury deaths to the changes in sex gaps in life expectancy and life disparity in the Nordic countries. **Kiadaliri A**.
- 21** Depression among women with reproductive system disorders. **Bliddal M**, Wesselhoeft R, Rasmussen L, Janecka M, Zaks N, Petersen LK, Egsgaard SD, Bjødstrup PJensen, Munk-Olsen T.
- 23** Impact of elexacaftor/tezacaftor/ivacaftor on utilisation of maintenance therapies in cystic fibrosis: Danish nationwide register study. **Råket HK**, Jensen CB, Jensen-Fangel S, Petersen J, Jimenez-solem E.
- 24** Individual and population-level changes in sickness absence through potential achievable improvement in influence at work: A nationwide cohort study of 301,175 younger employees. **Craven LH**, Mathisen J, Pedersen J, Rugulies R, Christensen KB, Madsen IEH.
- 25** Design of a study to examine the interplay between genetic liability and psychosocial working conditions in the aetiology of major depressive disorder. **Larsson NP**, Musliner KL, Agerbo E, Plana-Ripoll O, Madsen IHE, Rugulies R.
- 28** A sustainable and healthy lifestyle index and its association with metabolic syndrome among Swedish Office Workers. **Ullberg OH**, Tillander A, Toivanen S, Singh N, Lehtinen-Jacks S, Bälter K.
- 32** Cause specific mortality among Norwegian military veterans from peacekeeping service in Kosovo during 1999–2017, **Strand LÅ**, Rudvin I, Fadum EA.
- 35** Did the COVID-19 pandemic influence well-being among Danish employees? A study with monthly measurements of well-being from 2018 to 2022. **Nielsen S**, Abildgaard JS, Karlsen IL, Rugulies R, Craven LH.
- 36** Excess mortality after lower extremity amputation in a Danish nationwide cohort: The mediating role of postoperative complications. **Brix ATH<sup>1</sup>**, Petersen TG, Lindberg-Larsen M, Rubin KH.
- 39** Body mass index and risk of over 100 cancer forms and subtypes in 4.1 million individuals in Sweden. **Sun M**, da Silva M, Bjørge T, Fritz J, Mboya I, Jerkeman M, Häggström C, Stocks T.
- 40** Identifying Individuals with Visual Impairment in Danish Registries. **Möller S**, Jakobsen KP, Ahrenfeldt LJ, Grauslund J, Stockholm L.

- 44** Homelessness, psychiatric disorders, and violence: A population-based cohort study. **Nilsson SF**, Laursen TM, Andersen LH, Nordentoft M, Fazel S.
- 51** Diabetic retinopathy and risk of prevalent and 5-year incident cardiovascular disorders in type 2 diabetes. **Stokholm L**, Möller S, Grauslund J.
- 58** The complex relationship between sleep and mood in young adults: Mapping the underlying biopsychosocial mechanisms in a causal loop diagram. **Uleman JF**, Zucco A, Rod NH
- 68** Febrile seizures and subsequent academic performance in standardized tests: A nation-wide cohort study in Danish School-aged Children. Dreier JW, **Trabjerg B**, Feenstra B, Christensen J.
- 79** Changes in characteristics for patients diagnosed with mental disorders during 2000-2022 in Denmark. **Lousdal ML**, Plana-Ripoll O.
- 81** Appraising the prognostic value of self-reported physical activity for lower-extremity complications of type 2 diabetes: a cohort study using Swedish national registers. **Vogt T**, Heiland E, Kennedy B, Byberg L, Michaëlsson K, Brooke HL.
- 84** Juvenile idiopathic arthritis does not affect school performance – a national register-based study. **Pedersen MJ**, Høst C, Hansen SN, Klotsche J, Minden K, Deleuran B, Bech BH.
- 85** Diabetic complications and risk of depression and anxiety among adults with type 2 diabetes. **Horsbøl TA**<sup>1</sup>, Hoffmann SH, Thorsted AB, Rosenkilde S, Lehn SF, Kofoed-Enevoldsen A, Santos M, Iversen PB, Thygesen LC.
- 88** Adjusting excess mortality in major depressive disorder for lifestyle factors using survey data to complement registers: propensity score calibration. **Bødkegaard K**, Lousdal ML, Lash TL, Plana-Ripoll O.
- 89** Childhood body mass index and risk of infertility in women. **Pedersen DC**, Hudda M, Jensen A, Kjær SK, Juliusson PB, Rasmussen KM, Baker JL.
- 94** Discovering the Determinants of Overweight and Obesity: an Exploratory Post Hoc Subgroup Analysis of the Kiel Obesity Prevention Study. **Mannion E**, Bihrmann K, Plachta-Danielzik S, Bosy-Westphal A, Müller M, Ritz C.
- 97** Changes in polygenic scores for psychiatric disorders for cohorts born between 1981-2008. **Lousdal ML**, Labianca S, Schork A, Agerbo E, McGrath J, Vilhjálmsson B, Plana-Ripoll O.
- 99** Genetic variants and social benefit receipt in premenopausal women with breast cancer treated with docetaxel: A Danish population-based cohort study. **Schmidt JA**, Hjorth CF, Farkas DK, Damkier P, Feddersen S, Hamilton-Dutoit S, Ejlersen B, Lash TL, Ahern TP, Cronin-Fenton D.
- 103** Ergonomic work demands during pregnancy and the risk of preterm birth – findings from a Danish register-based cohort study. **Sejbaek CS**, Flachs EM, Frankel H, Tøttenborg SS, Madsen IEH, Rugulies R, Hougaard KS, Bonde JP, Begtrup LM.
- 104** Evaluating the association between socioeconomic position and survival after a childhood CNS tumour in Sweden: a register-based cohort study. **Extrand E**, Mogensen H, Tettamanti G
- 111** Cause-Specific Mortality After Spousal Bereavement: A Danish Register-based Cohort Study of 223,500 Older Adults. **Brünnich Sloth MM**, Bhatt S, Mortensen LH, Katsiferis A.
- 113** Exposure to workplace violence and threats, and risk of antidepressant medication use. **Dalsager L**, Madsen IEH, Rugulies R.

- 116** Does the association between neighbour noise and sleep disturbances vary by socioeconomic status? **Kloster S**, Davidsen M, Christensen AI, Ersbøll AK.
- 120** Body mass index and metabolic syndrome phenotypes and the risk of major cardiovascular diseases: a combined analysis based on four Swedish cohorts. Lind L, Risérus U, Sölve Elmståhl S, Ärnlöv J, Michaelsson K, **Docent Olga E Titova DO**.
- 121** Characteristics associated with Non-initiation and Non-completion of Human Papillomavirus Vaccination Among Danish Girls: A Nationwide Register-based Cohort Study. **Algren MH**, Gazibara T, Valentiner-Branth P, Timmermann A, Thygesen LC, Tolstrup JS.
- 126** Association between social disconnectedness and subsequent medical conditions and the role of pre-existing mental disorders. **Laustsen LM**, Lasgaard M, Plana-Ripoll O.
- 128** Being a migrant women during disasters: A study of emergency department utilization during the COVID-19 pandemic. **Facci G**, Trentin M, Valente M, Brambilla AM, Vicenzi A, Ragazzoni L, Corte FD, Barone-Adesi F.
- 129** Alcohol consumption trajectories and risk of first primary malignant breast cancer among postmenopausal women: A Danish cohort study. **Antoniussen CS**, Proust-Lima C, Ibsen DB, Olsen A, Overvad K, Tjønneland A, Ferrari P, Dahm CC.
- 131** Change in psychiatric health care and antidepressant use in refugees during the COVID-19 pandemic in Sweden – interrupted time series analysis. **Gemes K**, Atarodi V, Bergström J, Mittendorfer-Rutz E.
- 132** Genomic Epidemiology and Antimicrobial Resistance Profile of Shigella isolated from Diarrhoea diseases from under-five children in Blantyre, Malawi. **Sibande GT**, Kate Baker K, Jennifer Cornick J.
- 133** Disentangling the relationship between cancer mortality and COVID-19. **Hansen C**, Viboud C, Simonsen L.
- 140** Association between living conditions and confirmed coronavirus infections during the first three waves of the COVID-19 pandemic: A Danish nationwide register-based cohort study. **Nielsen MB**, Kjærulff TM, Pedersen MT, Bihmann K, Tolstrup J, Ersbøll AK.
- 142** Antipsychotic Drug Exposure and Risk of Respiratory Infections: A Nationwide Cohort Study During the COVID-19 Pandemic. **Nersesjan V**, Christensen R, Kondziella D, Michael E. Benros ME.
- 146** Different excess mortality in subtypes of Multiple Sclerosis. **Magyari M**, Koch-Henriksen N.
- 148** Dietary changes during first and second trimester in the Danish National Birth Cohort. **Eberl EE**, Christiansen AMH, Bjerregaard AA, Olsen SF, Loos R.
- 151** Breastfeeding patterns did not influence maternal risk of developing breast cancer in the Copenhagen Perinatal Cohort. **Christensen SH**, Hameiri-Bowen D, Pedersen DC, Baker JL, Bjerregaard LG.
- 152** Defining the landscape of sleep problems in young adults using machine learning on nationwide register data from 2 million individuals. **Zucco AC**, Drews HJ<sup>1</sup>, Ulleman JF, Rod NH.
- 157** Adolescent loneliness affects weight trajectories through early adulthood: a prospective cohort study. **Just-Nørregaard V**, Hackett R, Bruun JM, Andersen JH, Winding TN.
- 159** Incident Metabolic Dysfunction-Associated Steatotic Liver Disease is inversely associated with risk of dementia: a registry based cohort study. **Bartholdy A**, Moseholm KF, Nielsen PY, Albrechtsen NJW, Gluud LL, Jensen MK.

- 161** Impact of RSV on hospital capacity: Age-specific time series estimates of RSV hospitalizations. Johannesen CK, Egeskov-Cavling AM, Fischer TK.
- 163** Effects of maternal BCG scars on neonatal sepsis in Guinea-Bissau: a vital tool to reduce the male-female mortality gap? Schaltz-Buchholzer F, Aaby P, Benn CS.
- 165** A nationwide register-based study of healthcare usage and psychiatric comorbidity in borderline personality disorder in Denmark. Hall ASH, Agerbo E, Østergaard SD, Plana-Ripoll O, Debost JCF, Musliner KL.
- 169** Association between comorbidity clusters and referral to cardiac rehabilitation and mortality in patients with heart failure: A Danish national register-based analysis. Thygesen LC, Sibilitz KL, Zinckernagel L, Holmberg T, Tolstrup J, Tang LH, Skou S, Jani B, Rod Taylor R.
- 170** Automated surveillance system for invasive Streptococcus pneumoniae infections. Nielsen RT, Slotved CH, Dalby T, Jacobsen LH, Ravn SF, Sørensen LF, Voldstedlund M.
- 173** Discrimination and mental illness among Syrian refugees in Lebanon. Gaifém FME, Wejse C, Eiset AH.
- 182** Emergency Medical Services dispatcher recognition of stroke – a systematic review. Wenstrup J, Hestoy BH, Sagar MV, Blomberg NF, Christensen H, Christensen HC, Kruuse C.
- 183** Cardiorespiratory fitness and physical performance in Multiple Chemical Sensitivity (MCS) - The Danish study of Functional Disorders (DanFunD). Bjerregaard AA, Petersen MW, Gormsen LK, Skovbjerg S, Cedeño-Laurent JG, Jørgensen T, Linneberg A, Dantoft TM.
- 189** Exploration of Crucial Lifestyle Variables: A Blueprint for Public Health Enhancement. Singh N, Bälter K, Tillander A, Abraham FJ.
- 190** Differences in acute myocardial infarction incidence rates among immigrant groups in Norway - updated analyses using data from the NCDNOR-project. Rabanal KS, Selmer RM, Dalen I, Iglund J, Ariansen IKH, Meyer HE.
- 194** Bipolar disorder and severe poisoning due to medicines or illicit substances: A register-based cohort study. Sillanpää M, Kärkkäinen O, Taipale H, Tiihonen J, Hamina A.
- 195** Item Response Analysis of a Patient-reported Outcome Measure for Self-perceived Health among Psychiatric Patients in Denmark. Valentin JB, Mainz J, Johnsen SP, Kristensen K, Kristensen S.
- 198** Does health anxiety and vaccine concern predict self-reported adverse events following COVID-19 vaccination? – A Danish national cohort study. Hansen KT, Povlsen FK, Bech BH, Hansen SN, Rask CU, Fink P, Nielsen H, Dantoft TM, Thyssen SM, Rytter D.
- 201** Does occupational forward bending of the back increase low back pain among childcare workers? A Compositional Data Analysis of accelerometer data. Frost AD, Kyriakidis S, Holtermann A, Gupta N, Rasmussen CDN.
- 203** Early identification of postpartum depression: Possibilities of using information on personal and family history of psychiatric disorders to identify at-risk women. Kjeldsen MMZ, Madsen KB, Liu X, Mægbaek ML, Robakis T, Bergink V, Munk-Olsen T.
- 204** Body Mass Index and risk of colorectal cancer recurrence. A population-based cohort study in Denmark. Hjorth CF, Olsen MH, Ulrichsen S, Nors J, Wheler J, Borgquist S, Iversen L, Dalton S, Cronin-Fenton D.

- 206** Exploring Regional Disparities: Prevalence of Endometriosis Symptoms and Related Consequences in Denmark. Tong Zhu<sup>1</sup>, Eeva-Liisa Johansen<sup>1</sup>, **Marie Josiasen**<sup>1</sup>, Andrew Horne<sup>2</sup>, Lucky Saraswat<sup>3</sup>, Dorte Rytter<sup>1</sup>
- 208** Disease-Modifying Antirheumatic Drug (DMARD) use in Sweden. Alexander Rieem Dun<sup>1</sup>, Christoph Abé<sup>1,2</sup>, **Alexandra Cooper**<sup>1</sup>
- 214** Are there differences in physical activity patterns and fitness levels in adolescents with and without impairments? Kjellenberg K, Kwok Ng K, Bjerkefors A, Ohlsson ML, Ekblom Ö, Nyberg G, **Helgadóttir B.**
- 215** A comprehensive analysis of age of onset and cumulative incidence of mental disorders: a Danish register study. **Beck C**, Pedersen CB, Plana-Ripoll O, Dalsgaard S, Debost JC, Laursen TM, Musliner KL, Mortensen PB, Pedersen MG, Petersen LV, Yilmaz Z, McGarth J, Agerbo E.
- 217** Attention Deficit/Hyperactivity Disorder and non-persistence of Statins – a nationwide study. **Nielsen NPH**, Astrup A, Fosbøl EL, Böttger MTW, Dalsgaard S.
- 224** Adverse Childhood Experiences, Social Isolation, Job Strain, and Cardiovascular Disease Mortality in US Older Employees. **Matthews TA**, Li J.
- 227** Covid-19 infection and vaccination during first trimester and risk of congenital anomalies. **Magnus MC**, Örtqvist AK, Andersen AMN, Stephansson O, Håberg SE, Urhoj SK.
- 229** Long-term exposure to air pollution and Parkinson's Disease diagnosis - a Finnish register-based study. **Rumrich IK**, Korhonen A, Frohn LM, Brandt J, Geels C, Hartikainen S, Hänninen O, Tolppanen AM.
- 230** Urinary incontinence(UI), erectile dysfunction(ED), and health-related quality of life(HRQoL) after radical prostatectomy(RP), compared with age-similar men: A study from the Cancer Registry of Norway(CRN). **Nilsson MO**, Fosså SD, Myklebust TÅ, Gjelsvik YM, Johannesen TB, Aas K.
- 236** Healthcare utilization and redemption of psychotropic drug prescription following major organizational changes in a healthcare setting. **Sørensen LN**, Dalsgaard L, Jensen JH, Kyndi M, Willert MV.
- 237** Associations between weight status and mental well-being in childhood and adolescence: A systematic review of observational studies. Schramm S, **Heuck IR**, Geiker NRC, Wimmelmann CL.
- 238** Differences in causes of death and mortality risk among older people with and without diabetes in Norwegian home care services. A nationwide registry study. **Teigland T**, Igland J, Blytt KM, Haltbakk J, Graue M, Birkeland KI, Østbye T, Kirkevold M, Iversen MM.
- 240** Disease incidence and mortality among citizens in Grindsted – a Danish city with a large pollution. **Ersbøll AK.**
- 244** Genome-wide association analyses in family triads and dyads following assisted reproductive technology. **Skodvin SN**, Gjerdevik M, Jugessur A, Romanowska J, Håberg SE, Hanevik HI, Lyle R, Lie RT, Gjessing HK.
- 246** Hearing loss, sick leave, and disability pension: Findings from the HUNT follow-up study. **Jorgensen A**, Aarhus L, Engdahl B, Bratsberg B, Skirbekk VF, Mehlum IS.
- 250** Exploring small non-coding RNAs as blood-based biomarkers to predict Alzheimer's disease. **Gutierrez-tordera L**, Papandreou C, Novau-Ferré Nil, García-González P, Rojas-Criollo M, Marquié M, Chapado LA, Papagiannopoulos C, Fernandez-Castillo N, Valero S, Folch J, Ettcheto M, Camins A, Boada M, Ruiz A, Bulló M.

**253** Association of a high-protein and low-glycemic-index diet during pregnancy with offspring growth and obesity until the age of 18 years – a hypothetical trial. **Mogensen CS**, Mølgaard C, Magkos F, Geiker N, Bjerregaard AA, Granström C, Halldorsson TI, Olsen SF.

## Health status or education levels in adulthood as proxy measures for unavailable childhood health status or parental education in survey data

**Nirmin Juber**<sup>1</sup>, Amar Ahmad<sup>1</sup>

<sup>1</sup>*New York University Abu Dhabi*

**Background:** Epidemiological studies with life-course trajectories may require adjusting for relevant confounders within the timeframe to improve the validity. Studies involving child health and future health in adulthood, are required to control for demographic characteristics in both time frames. However, this is not quite feasible for many survey datasets due to the long interval time to recall for childhood variables. Therefore, this study aims to evaluate whether health status or education levels in adulthood can be used as proxy measures for unavailable childhood health status or parental education levels in survey data.

**Methods:** This is a study using The United Arab Emirates Healthy Future Study (UAEHFS) and the Indonesia Family Life Survey Fifth Wave (IFLS-5). We included 5705 from the UAEHFS and 31,397 individuals from the IFLS-5 with complete responses of child/adult health status (poor/fair vs. excellent/good) as well as parental education vs. education during adulthood. Spearman's rho correlations were used to examine correlations of health status or education levels in childhood and adulthood.

**Results:** Health status during childhood was statistically correlated with health status during adulthood 15% using UAEHFS, and 4% using IFLS-5. On the other hand, parental education was statistically correlated with adult education levels by 31% using IFLS-5.

**Conclusions:** Health status or education levels in adulthood may be used as a proxy measure for health status in childhood or parental education, respectively. Using available adult characteristics as proxies for child characteristics in survey data may be feasible to address the unavailability of important childhood characteristics as control variables.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Associations between bioaerosols, lung function work-shift changes and inflammatory markers: A study of recycling workers

**Karoline Kærgaard Hansen**<sup>1</sup>, Vivi Schlünssen<sup>2</sup>, Karin Broberg<sup>3</sup>, Kirsten Østergaard<sup>2</sup>, Margit Frederiksen<sup>4</sup>, Torben Sigsgaard<sup>2</sup>, Anne Mette Madsen<sup>4</sup>, Henrik Kolstad<sup>1</sup>

<sup>1</sup>*Department of Occupational Medicine, Danish Ramazzini Centre, Aarhus University Hospital,*

<sup>2</sup>*Department of Public Health, Research unit for Environment Occupation and Health, Danish Ramazzini Centre, Aarhus University,* <sup>3</sup>*Division of Occupational and Environmental Medicine, Lund University,* <sup>4</sup>*National Research Centre of the Working Environment*

**Background:** Domestic waste recycling and subsequent numbers of recycling workers are expected to increase. We aimed to investigate the association between current bioaerosol exposures and 1) work-shift change in lung function and 2) inflammatory markers among recycling workers.

**Methods:** Inhalable dust was measured with personal samplers that were analysed for endotoxin, bacteria, and fungi incubated at 25 °C and 37 °C. Lung function (FEV<sub>1</sub>, FVC) was measured pre- and post-shift. Inflammatory markers (CRP, SAA, CC16, IL1B, IL2, IL4, IL5, IL6, IL8, IL10, IL13, and TNF) were measured in serum collected post-shift. Associations between bioaerosols, lung function work-shift changes, and inflammatory markers were explored by linear mixed-effects models.

**Results:** In total, 88 production workers and 14 administrative workers participated with 170 measurements. No associations between bioaerosol exposures and lung function work-shift change were observed. IL2, IL6, IL10, and TNF levels were associated with exposure to inhalable dust, and a 1.40-fold (95% CI: 1.01;1.96) increase in TNF levels by a 10-fold increase to fungi was observed. However, only the association between fungi and TNF was statistically significant. Most of the 45 conducted analyses showed no associations between bioaerosol levels and inflammatory markers.

**Conclusions:** This study did not indicate any acute effect on lung function. Several inflammatory markers tended to increase with increasing exposure, however, it is unclear if this represents a systemic inflammatory effect. Future research should combine data from bioaerosol-exposed workers within and outside the recycling industry to assess exposure-response relations that may form the basis for health-based occupational exposure limits

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Identifying office workers from self-reported information about occupation in a large population-based Swedish study (LifeGene)

**Susanna Lehtinen-Jacks**<sup>1</sup>, Annika Tillander<sup>2</sup>, Nisha Singh<sup>1</sup>, Oskar Halling Ullberg<sup>1</sup>, Ulrika Florin<sup>1</sup>, Katarina Bälter<sup>1</sup>

<sup>1</sup>Mälardalen University, <sup>2</sup>Linköping University

**Background:** To enhance the usability of existing large population-based studies in epidemiologic research on office workers, we developed a procedure for a proxy variable on office worker in data with open-ended responses on occupation.

**Methods:** Self-reported open answers on occupation (n=3738) from the LifeGene pilot study were linked to a modified version of the Swedish Standard Classification of Occupation 2012 (SSYK12). The SSYK12 includes 8946 job titles with 4-digit codes which were categorized to managers, white-collar and blue-collar workers. Managers and white-collar workers were used as a proxy for office workers. We then used fuzzy string matching in R to calculate the Jaro-Winkler distance between the LifeGene pilot data answers on occupation and the modified SSYK12 job titles. Zero distance indicated a perfect match, whereas distances above zero were checked manually to assess various job titles as office worker or non-office worker. Thereafter, the resulting procedure was applied to the whole LifeGene study with data on occupation (n=23 525).

**Results:** We got perfect match against the modified SSYK12 job titles for 16 275 responses (69%) in the large LifeGene data. Another 1721 responses (7%) matched occupations that we had manually defined as office worker or non-office worker in the pilot data set, and the remaining 5529 (24%) were unmatched. Among the matched occupations, 15 159 (84%) were office-workers, 2493 (14%) non-office workers, and 344 (2%) nondistinctive.

**Conclusion:** The procedure for a proxy variable on office worker allowed us to classify three quarters of the open-ended responses on occupation.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## 25-year trends in first-time hospitalizations for Parkinson's Disease and subsequent mortality: A Danish nationwide cohort study

**Merete Osler**<sup>1,2</sup>, Gunhild Okholm<sup>1</sup>, Terese Sara Høj Jørgensen<sup>1,2</sup>, Maarten Pieter Rozing<sup>1,2</sup>

<sup>1</sup>Center for Clinical Research and Prevention, <sup>2</sup>Department of Public Health, University of Copenhagen

**Background:** In most countries incidence and mortality for Parkinson's disease (PD) have not been monitored by surveillance registries, although it could demonstrate the need for primary and tertiary prevention. The aim of this study was to examine 25-year trends in first-time hospitalizations for PD in Denmark and subsequent short and long-term mortality.

**Methods:** In a nationwide population-based cohort we identified all 34,947 individuals with a first-time hospitalization for PD from 1995 through 2019. We calculated standardized incidence rates of PD and 1 year and 5 year mortality by sex. Mortality rates were compared with a reference cohort randomly selected from the background population matched on sex, age and index-date.

**Results:** The annual standardized incidence rate of PD was relatively stable during the study period in both men and women. The incidence of PD was higher in men than in women, and with the highest incidence in those aged 70-79 years. One and 5 year mortality risk after first-time hospitalization for PD was similar for men and women, and decreased by around 30% and 20%, respectively, between 1995 and 2019. The matched reference cohort has a similar decline in mortality over time.

**Conclusion:** The rate of first-time hospitalization for PD was relatively stable between 1995 and 2019, whereas subsequent short and long-term mortality declined during the period as in the reference cohort.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Disturbed glucose metabolism is associated with various functional somatic disorders. The DanFunD study

**Thomas Meinertz Dantoft**<sup>1</sup>, Anne Ahrendt Bjerregaard<sup>1</sup>, Kaare Bro Wellnitz<sup>2</sup>, Eva Ørnbøl<sup>2</sup>, Line Lund Kårhus<sup>1</sup>, Marie Weinreich Petersen<sup>2</sup>, Signe Ulfbeck Schovsbo<sup>1</sup>, Torben Jørgensen<sup>1</sup>

<sup>1</sup>Center for Clinical Research and Prevention - Copenhagen University Hospital- Bispebjerg & Frederiksberg Hospital, <sup>2</sup>Research Clinic for Functional Disorders and Psychosomatics, Aarhus University Hospital,

**Background:** Functional Somatic Disorders (FSD) refers to clusters of recurrent physical symptoms (e.g. fatigue and pain) accompanied by impairment or disability. About 16% of the adult populations have an FSD, yet the epidemiology of FSD remains poorly described. An association between FSD and disturbed glucose metabolism has been reported, primarily in smaller case-controls settings only examining one type of FSD at a time.

The aim of this study was to analyse associates between glucose metabolism and FSD in a large general population-based sample.

**Method:** Data was derived from the Danish Study of Functional Disorders (DanFunD), a population-based cohort study including a random sample of 9,656 adults, that completed a health examination. Self-reported FSD were assessed using international accepted classifications of bodily distress syndrome (BDS), irritable bowel (IB), chronic widespread pain (CWP) and chronic fatigue (CF). Associates between measures of fasting glucose, glycated haemoglobin A1c (HbA1C) and insulin levels and various FSD were analysed using logistic regression adjusted for sex & age (model 1), + lifestyle & socioeconomics (model 2), calculating odds ratios and 95% confidence intervals.

**Results:** Most delimitations of FSD were found to be associated with increased levels of both fasting glucose, HbA1c, insulin and insulin resistant after adjusting for sex and age. After further adjustment of lifestyle factors and socioeconomics, only increased levels of insulin and insulin resistance remained positively associated with FSD.

**Conclusion:** This cross-sectional study supports impaired glucose metabolism to be associated with FSD independent of lifestyle and socioeconomics. Prospective studies are needed to clarify causality

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Contributions of injury deaths to the changes in sex gaps in life expectancy and life disparity in the Nordic countries

**Ali Kiadaliri**<sup>1</sup>

<sup>1</sup>*Lund University*

**Background and aim:** Injuries are among leading causes of death. The study aimed to compare the contributions of injury deaths to the changes in sex gaps in life expectancy (SGLE) and life disparity (SGLD) across the Nordic countries.

**Methods:** Annual data on age-sex specific causes of death were obtained from the World Health Organization mortality database for two periods: 2000-2002 and 2016-2018 (2014-2016 for Norway). I decomposed the contributions of injury deaths to the changes in the SGLE and SGLD between these two periods by age and cause using a continuous-change model.

**Results:** While females had LE and LD advantages due to injury deaths in all countries in both periods, these sex gaps were narrowing over time. Among injury-specific causes, self-harm had almost always the greatest contributions to the SGLE/SGLD across all countries in each period. Self-harm in Finland and transport accidents in all other countries had the greatest contributions to the narrowing SGLE/SGLD. Widening SGLE due to self-harm in Iceland and due to falls in Sweden were unique to these countries. In all countries, injury deaths in age group 20-24 years had the greatest contributions to the narrowing SGLE/SGLD. Deaths due to falls in older ages and assault in younger ages generally contributed to the widening SGLE/SGLD.

**Conclusions:** While sex gaps in injury deaths had been shrinking in all Nordic countries, there were cross-country variations in age- and cause-specific patterns. The results suggest the need for injury prevention policies targeting self-harm in younger and falls in older males.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Depression among women with reproductive system disorders

**Associate Professor Mette Bliddal**<sup>1,2,3</sup>, Rikke Wesselhoeft<sup>2,3,4</sup>, Lotte Rasmussen<sup>2</sup>, Magdalena Janecka<sup>5</sup>, Nina Zaks<sup>5</sup>, Lone Kjeld Petersen<sup>6,7</sup>, Sofie Dyekær Egsgaard<sup>2,3</sup>, Peter Bjødstrup Jensen<sup>2</sup>, Trine Munk-Olsen<sup>3</sup>

<sup>1</sup>Research Unit OPEN, Department of Clinical Research, University of Southern Denmark, <sup>2</sup>Clinical Pharmacology, Pharmacy and Environmental Medicine, Department of Public Health, University of Southern Denmark, <sup>3</sup>Research Unit of Child and Adolescent Psychiatry, Department of Clinical Research, University of Southern Denmark, <sup>4</sup>Child and Adolescent Psychiatry Southern Denmark, Mental Health Services in the Region of Southern Denmark, <sup>5</sup>Department of Child and Adolescent Psychiatry, New York University Grossman School of Medicine, <sup>6</sup>Research Unit of Obstetrics and Gynecology, Department of Clinical Research, University of Southern Denmark, <sup>7</sup>Department of Obstetrics and Gynecology, University Hospital Odense

**Background:** Women have a two-fold higher risk of depression compared to men with the risk particularly high in periods of hormonal fluctuation. Reproductive system disorders (RSDs) affect hormonal fluctuation, yet little is known about how these affect and co-occur with depression.

**Methods:** Using Danish nationwide health registers (2005-2018), we examined depression in women aged 15-49 with 24 RSDs. Within each RSD, we formed an age-matched comparison group. We calculated the incidence rate, two-year incidence rate ratio ( $\pm 1$  year from RSD diagnosis), and prevalence proportion of a diagnosis of depression or use of antidepressants in the time period surrounding the diagnosis of RSD ( $\pm 3$  years).

**Results:** Of 2,295,824 Danish women, 289,674 (13%) were registered with  $\geq 1$  RSD. Women with any RSD had a higher incidence rate of depression  $\pm 3$  years from the diagnosis than comparators, peaking in the year following the RSD diagnosis. The two-year incidence rate ratios of depression for different RSDs ranged between 1.18 (95% CI 1.09-1.28) and 1.97 (95% CI 1.87-2.08). The prevalence proportion of depression was consistently higher in women with RSDs, and this was already observed three years before diagnosis.

**Conclusion:** Women diagnosed with RSDs are more likely to be diagnosed with depression than comparators. The difference in risk was present three years before the RSD diagnosis, and persisted up to three years after diagnosis. Since RSDs affect more than 10% of women, our findings underscore the need to modify clinical practice to address mental well-being along with the physical symptoms of women diagnosed with RSDs.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Impact of elexacaftor/tezacaftor/ivacaftor on utilisation of maintenance therapies in cystic fibrosis: Danish nationwide register study

**Hans Kristian Råket**<sup>1,2</sup>, Camilla Bjørn Jensen<sup>2</sup>, Søren Jensen-Fangel<sup>3</sup>, Janne Petersen<sup>2,4</sup>, Md, Ass Prof Espen Jimenez-solem<sup>1,2,5</sup>

<sup>1</sup>Department of Clinical Pharmacology, Copenhagen University Hospital – Bispebjerg and Frederiksberg, <sup>2</sup>Copenhagen Phase IV Unit, Department of Clinical Pharmacology and Centre for Clinical Research and Prevention, University Hospital of Copenhagen – Bispebjerg and Frederiksberg, DK, <sup>3</sup>Department of Infectious Diseases, Aarhus University Hospital, DK, <sup>4</sup>Section of Biostatistics, Department of Public Health, University of Copenhagen, DK, <sup>5</sup>Faculty of Health and Medical Sciences, University of Copenhagen, DK.

**Background:** Elexacaftor/tezacaftor/ivacaftor (ETI) has been shown to improve outcomes in people living with cystic fibrosis (pwCF). Despite guidelines recommending the continuation of maintenance therapies alongside ETI, its actual influence on these therapies is unclear. This study evaluates ETI's effect on maintenance therapy utilisation in Danish pwCF.

**Methods:** PwCF initiating ETI between 2018 and 2022 were included. Utilisation of maintenance therapies was analysed pre- and post-ETI initiation using National Prescription Registry data. Impact of ETI on use of maintenance therapies was reported as odds ratios (ORs) for prescription redemptions.

**Results:** The cohort comprised 386 individuals, 50 % female and 74% F508del homozygous. Median age was 24 years (IQR 14-33) and mean ppFEV1 at ETI initiation was 76 (SD 24.4). Two years post-ETI, prevalence of users decreased for three drug classes: airway therapies (from 88.8% [95% CI: 85.7-92.0] to 70.5% [65.4-75.6]), inhaled antibiotics (from 59.6% [54.7-64.5] to 38.8% [33.3-44.2]), and oral antibiotics (from 92.2% [89.5-94.9] to 84.0% [79.9-88.1]).

OR of redeeming a prescription 2-years post-ETI initiation (95% CI) was reduced for all drug classes: airway therapies (OR: 0.18 [0.15-0.22]), inhaled antibiotics (OR: 0.31 [0.25-0.39]), oral antibiotics (OR: 0.45 [0.38-0.53]), gastrointestinal medicines (OR: 0.58 [0.49-0.69]), and endocrine treatments (OR: 0.66 [0.49-0.88]).

**Conclusion:** This is the first study to assess the impact of ETI on use of maintenance therapies in a national cohort of pwCF. It shows a reduction two years after ETI initiation, with the largest declines observed in airway therapies and antibiotics. These findings highlight ETI's real-world effectiveness beyond conventional clinical metrics.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Individual and population-level changes in sickness absence through potential achievable improvement in influence at work: A nationwide cohort study of 301,175 younger employees

**Lucas Hillebert Craven**<sup>1</sup>, Jimmi Mathisen<sup>2</sup>, Jacob Pedersen<sup>1</sup>, Professor Reiner Rugulies<sup>1,2</sup>, Karl B Christensen<sup>3</sup>, Ida EH Madsen<sup>1,4</sup>

<sup>1</sup>The National Research Centre for the Working Environment, <sup>2</sup>Section of Epidemiology, Department of Public Health, University of Copenhagen, <sup>3</sup>Section of Biostatistics, Department of Public Health, University of Copenhagen, <sup>4</sup>) National Institute of Public Health, University of Southern Denmark

**Background and aim:** Workplace interventions that increase influence at work may reduce sickness absence. We aimed to quantify the predicted change in sickness absence through potentially achievable improvements in influence at work in a nationwide inception cohort of 301,185 younger employees in Denmark.

**Methods:** The parametric g-formula is an analytic tool that allows estimation of potential outcome changes under simulated interventions. Using the parametric g-formula, we quantified the predicted change in sickness absence days under a scenario where influence at work was improved by one standard deviation. Influence at work was measured at the occupational level with a job exposure matrix. We predicted annual sickness absence days using multi-level Poisson regressions adjusted for a range of covariates, including childhood socioeconomic status.

**Results:** During 788,527 person-years, we identified an association between occupational assessed influence at work and annual sickness absence days, with a rate ratio of 0.71 (95% CI: 0.66-0.77) for each one-point higher level of influence. The simulated improvement of influence at work corresponded to a 0.09-point increase and was associated with an average individual-level reduction of 0.16 (95% CI: 0.13-0.19) annual sickness absence days and a population-level total reduction of 2.9% (95% CI: 2.4%-3.3%). Across occupational groups, we found the highest reduction in education (4.2%), care (3.5%), and knowledge work (3.3%).

**Conclusion:** Influence at work was strongly associated with sickness absence. Potentially achievable interventions improving influence at work may have a small but important impact on sickness absence among younger employees and in most occupations.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Design of a study to examine the interplay between genetic liability and psychosocial working conditions in the aetiology of major depressive disorder

**Nanna P. Larsson**<sup>1</sup>, Katherine L. Musliner<sup>2,3</sup>, Esben Agerbo<sup>4,5</sup>, Oleguer Plana-Ripoll<sup>3,4,6</sup>, Ida E.H. Madsen<sup>1,7</sup>, Professor Reiner Rugulies<sup>1,8</sup>

<sup>1</sup>National Research Centre for the Working Environment, <sup>2</sup>Department of Affective Disorders, Aarhus University Hospital-Psychiatry, <sup>3</sup>Department of Clinical Medicine, Aarhus University, <sup>4</sup>National Centre for Register-based Research, Aarhus University, <sup>5</sup>Centre for Integrated Register-based Research, Aarhus University, <sup>6</sup>Department of Clinical Epidemiology, Aarhus University and Aarhus University Hospital, <sup>7</sup>National Institute of Public Health, University of Southern Denmark, <sup>8</sup>Section of Epidemiology, Department of Public Health, University of Copenhagen

**Background and Aim:** Major depressive disorder (MDD) is one of the most prevalent mental disorders worldwide, including in the Nordic countries. The aetiology is complex, involving multiple risk factors, and is only partly understood. In a research project commencing in spring 2024, we will examine whether (i) exposure to adverse working conditions is associated with onset of MDD; (ii) genetic liability modifies the association between working conditions and MDD; and (iii) working conditions affect labour market participation after diagnosis with MDD. We will further (iv) estimate the economic effects of reducing MDD risk due to improved working conditions.

**Methods:** The study population is derived from the iPSYCH2015 case-cohort sample that includes 24,213 individuals with MDD diagnosed in young adulthood. Genetic liability for MDD is estimated by polygenic scores using genome-wide single nucleotide polymorphisms derived from frozen blood spots. We measure exposure to adverse working conditions by linking job exposure matrices to the sample, estimating e.g., job strain, emotional demands, and workplace violence. Information on covariates (e.g., sex, age, education, parental psychiatric history) and labour market participation is retrieved from registers. Economic costs of MDD are calculated based on recently published estimates from Danish register studies. We will conduct Cox proportional hazard analyses, calculate additive and multiplicative interactions, and estimate simulated interventions for the hypothetical effects of improving working conditions.

**Results and Conclusion:** We expect first results by the end of 2024. Results will be published in peer-reviewed journal articles and summarized in a PhD thesis to be submitted in 2027.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## A sustainable and healthy lifestyle index and its association with metabolic syndrome among Swedish Office Workers

**Mr Oskar Halling Ullberg**<sup>1</sup>, Annika Tillander<sup>2</sup>, Susanna Toivanen<sup>1</sup>, Nisha Singh<sup>1</sup>, Susanna Lehtinen-Jacks<sup>1</sup>, Katarina Bälter<sup>1</sup>

<sup>1</sup>Mälardalen University, <sup>2</sup>Linköping University

**Background:** In response to societal challenges, particularly non-communicable diseases and the ongoing global climate change, the promotion of a sustainable lifestyle is urgent. For example, a healthy lifestyle goes hand in hand with foods with low climate impact and active transportation. Thus, this study aims to explore the associations between a sustainable and healthy lifestyle index and the metabolic syndrome among Swedish office workers.

**Method:** A lifestyle index was created, where each lifestyle factor, i.e. different aspects of physical activity, food habits, alcohol, tobacco use, and sleep, was graded and summarized into a score. The overall index score for each participant was thereafter related to the prevalence of having the metabolic syndrome or not. Open-ended answers in the LifeGene cohort study were matched to the Swedish Standard Classification of Occupation 2012 (SSYK12) using fuzzy string matching to identify office workers.

**Results:** Preliminary results from the pilot phase of LifeGene (n= 5,364) showed that the group with the highest index score had more than 50% reduced relative risk of the metabolic syndrome, as compared to the group with the lowest score. Now, this method will be scaled up to include the whole large LifeGene study with data on occupation (n=23 525) and using fuzzy string matching to identify office workers.

**Conclusion:** We propose a sustainable and healthy lifestyle index to be practically utilized in public health and workplace contexts, for both surveys and the implementation and evaluation of population-based interventions on healthy behaviors.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Cause specific mortality among Norwegian military veterans from peacekeeping service in Kosovo during 1999–2017

**Ph.D Leif Åge Strand**<sup>1</sup>, Inger Rudvin<sup>1</sup>, Elin Anita Fadum<sup>1,2</sup>

<sup>1</sup>Norwegian Armed Forces Joint Medical Services, <sup>2</sup>Institute for Studies of the Medical Profession

**Background and aim:** Peacekeeping service in conflict zones might increase the soldiers' risk of death, as a consequence of physical and psychological traumas that follows in the wake of actions of war. We aimed to investigate mortality among Norwegian men and women who participated in the NATO-led international peacekeeping operations in Kosovo from 1999 to 2017.

**Methods:** The cohort was established by the Norwegian Armed Forces Health Registry and consists of 5882 men and 274 women. Each cohort member was followed for the incident of death from their first day of service in Kosovo through 2021. We calculated standardized mortality ratios (SMRs) from national population rates in Norway.

**Results:** We observed 107 deaths in men and three in women. In men, SMR from all causes combined was lower than expected (0.62) and in line with a healthy soldier effect. Mortality from non-neoplastic diseases was one third of the expected values (SMR=0.35), while cancer mortality did not deviate from the national rates. External cause mortality was also lower than expected (SMR=0.71), due to few accidents (SMR=0.49), while risk of suicide was close to that in the general population. The three deaths in women, of which two were from external causes, yielded a non-statistically significant SMR of 0.73.

**Conclusion:** Peacekeeping service in Kosovo was not associated with increased risk of mortality. As the number of peacekeeping women in each mission is small, we aim to study mortality, inclusive of suicide, in all the 2300 women from peacekeeping missions back to 1978.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Did the COVID-19 pandemic influence well-being among Danish employees? A study with monthly measurements of well-being from 2018 to 2022.

**Research Assistant Sandra Nielsen**<sup>1</sup>, Johan Simonsen Abildgaard<sup>1,2</sup>, Iben Louise Karlsen<sup>1</sup>, Professor Reiner Rugulies<sup>1,3</sup>, Lucas Hillebert Craven<sup>1</sup>

<sup>1</sup>The National Research Centre For The Working Environment, <sup>2</sup>Department of Organization, Copenhagen Business School, <sup>3</sup>Section of Epidemiology, Department of Public Health, University of Copenhagen

**Background and Aim:** The COVID-19 pandemic substantially altered life for a large proportion of people around the world. We examined changes in well-being among employees in Denmark before, during and after the COVID-19 pandemic.

**Methods:** We used secondary survey data collected by a commercial company that had provided a smartphone app to monitor employees' well-being in several Danish workplaces. Well-being was measured every other week with the WHO-5 questionnaire. We included 6,578 employees from 77 workplaces that provided a total of 111,705 WHO-5 scores. We calculated time trends in well-being scores and compared mean well-being scores in the years before (2018, 2019), during (2020, 2021) and after (2022) the COVID-19 pandemic.

**Results:** In four of the five years, men had higher well-being scores than women, with 2018 being the exception. We observed a strong seasonal variation, with well-being scores peaking during the summer months (July and August) in each year, regardless of the COVID-19 situation. Mean well-being was lower during the COVID-19 period compared to both before- and after-COVID-19 periods in both men and women. However, although the differences were statistically significant (all p-values <0.003), the absolute differences were small. Among men, mean well-being scores were 68.9, 68.6 and 70.1 for pre-, during and post-COVID-19. Among women, the corresponding mean well-being scores were 69.3, 67.3 and 68.7, respectively.

**Conclusion:** The study results suggest that the COVID-19 pandemic was associated with a slight decrease in employees' well-being. Independent of the COVID-19 situation, well-being scores showed a strong seasonal variation.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Excess mortality after lower extremity amputation in a Danish nationwide cohort: The mediating role of postoperative complications

**Md Phd-student Anna Trier Heiberg Brix**<sup>1</sup>, Tanja Gram Petersen<sup>3</sup>, Martin Lindberg-Larsen<sup>1</sup>, Katrine Hass Rubin<sup>3</sup>

<sup>1</sup>*Department of Orthopedic Surgery and Traumatology, Odense University Hospital*, <sup>2</sup>*Department of Clinical Research, University of Southern Denmark*, <sup>3</sup>*OPEN - Open Patient Data Explorative Network, Odense University Hospital and University of Southern Denmark*

**Background and aim:** Patients who undergo major lower extremity amputation (MLEA) have the highest post-operative mortality among orthopedic patient groups. The co-morbidity profile for MLEA patients is often extensive and associated with elevated postoperative mortality. This study primarily aimed to investigate the risk of short and long-term mortality following first and subsequent major lower extremity amputation. Secondly, to examine the mediation role of post amputation complications.

**Patients and methods:** With data from the National Danish Patient Registry, 11,897 first-time MLEAs were identified between January 1, 2010 and December 31, 2021, along with 59,576 controls matched 1:5 by age, gender, and region of living. Mediators were identified through diagnosis codes (ICD-10) present in 6 months following MLEA.

**Results:** Excess mortality following MLEA was highest in the month following MLEA (HR 36.29 95%CI 28.74-45.82) in women and HR 53.99 (95%CI 42.23-66.51) in men). Subsequent amputation resulted in an increased mortality (overall HR 1.57 (95% CI 1.45-1.70) in women and HR 1.57 (95%CI 1.46-1.66) in men) the month after re-amputation and almost normalized after the first year. Sepsis mediated the largest proportion of mortality with a proportion of effect of 15.3% (10.7-19.8) in women and 16.5 (12.7-20.2) in men, although pneumonia also was a contributing factor.

**Conclusion:** The excess mortality remains high after MLEA, with the highest mortality risk in the month after initial amputation. A subsequent amputation results in excess mortality in the following year, but declines after. Sepsis and pneumonia were found to significantly mediate the association between MLEA and mortality.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Body mass index and risk of over 100 cancer forms and subtypes in 4.1 million individuals in Sweden

**Ming Sun**<sup>1</sup>, Marisa da Silva<sup>1</sup>, Tone Bjørge<sup>2,3</sup>, Josef Fritz<sup>1,4</sup>, Innocent Mboya<sup>1</sup>, Mats Jerkeman<sup>5</sup>, Christel Häggström<sup>6</sup>, Tanja Stocks<sup>1</sup>

<sup>1</sup>Department of Translational Medicine, Lund University, <sup>2</sup>Department of Global Public Health and Primary Care, University of Bergen, <sup>3</sup>Cancer Registry of Norway, Norwegian Institute of Public Health, <sup>4</sup>Institute of Medical Statistics, Medical University of Innsbruck, <sup>5</sup>Division of Oncology, <sup>6</sup>Northern Register Centre, Department of Public Health and Clinical Medicine, Umeå University

**Background:** Obesity, assessed by body mass index (BMI), is an established risk factor for 13 cancers. We aimed to identify further potential obesity-related cancers and to quantify their association with BMI relative to that of established obesity-related cancers.

**Methods:** We investigated BMI in 4,142,349 individuals in Sweden (mean age 27.1 years) with risks of 124 cancers grouped according to topography and morphology. We fitted Cox regression models to calculate hazard ratios (HRs) of cancer and regarded previously unestablished obesity-related cancers with a positive HR at an  $\alpha$ -level of 0.05 for either obesity vs. normal weight or per 5 kg/m<sup>2</sup> higher BMI level as potentially obesity-related.

**Results:** After 100.2 million person-years of follow-up, 332,501 cancer cases were recorded. We identified many potential obesity-related cancers: several head and neck cancers, gastrointestinal tract cancers (gastric gastrointestinal stromal, small intestine, biliary tract), melanoma, genital cancers (vulva, cervical adenocarcinoma, penis), several endocrine cancers, connective tissue cancer, and haematological cancers (Hodgkin lymphoma, non-Hodgkin lymphoma, leukemia). Amongst cancer subtypes, some were more strongly obesity-related such as small intestine neuroendocrine tumours and non-Hodgkin diffuse large B-cell lymphoma. The HR (95% confidence interval) of potential obesity-related cancers combined (n=51 037) per 5 kg/m<sup>2</sup> higher BMI level was 1.17 (1.15-1.20) in men and 1.13 (1.11-1.15) in women, as compared to 1.24 (1.22-1.26) and 1.12 (1.11-1.13), respectively, for established obesity-related cancers (n=84 384).

**Conclusion:** This study suggests a potentially large addition of obesity-related cancers to already established ones and provides further evidence for specific cancer subtypes driving some of the associations.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Identifying Individuals with Visual Impairment in Danish Registries

**Sören Möller**<sup>1,2</sup>, Katrine Prisaak Jakobsen<sup>1,2</sup>, Linda Juel Ahrenfeldt<sup>3</sup>, Jakob Grauslund<sup>4,5,6</sup>, Lonny Stokholm<sup>1,2</sup>

<sup>1</sup>Research Unit OPEN, Department of Clinical Research, University of Southern Denmark, <sup>2</sup>OPEN – Open Patient data Explorative Network, Odense University Hospital, <sup>3</sup>Research Unit for General Practice, University of Southern Denmark, <sup>4</sup>Department of Clinical Research, University of Southern Denmark, <sup>5</sup>Department of Ophthalmology, Odense University Hospital, <sup>6</sup>Steno Diabetes Center Odense, Odense University Hospital

**Background and aim:** The number of individuals living with blindness or severe visual impairments in Denmark is estimated to at least 20,000 and studies show that visually impaired individuals are disadvantaged with respect to both health and socioeconomic status compared to the general population. The Danish registries offer opportunities to investigate these disparities on a population level, but this requires, that visually impaired individuals can be identified in the registries. The aim of this study is to establish the most valid criteria for identifying individuals with blindness and severe visual impairment in Danish health registries.

**Methods:** The investigation is performed by combining data from the Danish National Patient Registry with a dataset provided by Dansk Blindesamfund, targeting individuals with clinically confirmed visual impairment, which is considered as a gold standard. Using these data, we establish robust criteria for identifying visually impaired individuals within the registry.

**Results:** We construct a hierarchical sequence of criteria for identifying visually impaired individuals in the Danish National Patient Registry, offering different trade-offs between false negative and false positive results.

**Conclusion:** While visually impaired individuals can be identified in registry data with reasonable precision, it is essential to consider systematic patterns in who can be identified.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Homelessness, psychiatric disorders, and violence: A population-based cohort study

**Dr. Sandra Feodor Nilsson**<sup>1</sup>, Thomas Munk Laursen<sup>2</sup>, Lars Højsgaard Andersen<sup>3</sup>, Merete Nordentoft<sup>1</sup>, Seena Fazel<sup>4</sup>

<sup>1</sup>*Copenhagen Research Center for Mental Health – CORE, Copenhagen University Hospital – Mental Health Services CPH*, <sup>2</sup>*The National Centre for Register-Based Research, Aarhus University*, <sup>3</sup>*ROCKWOOL Foundation Research Unit*, <sup>4</sup>*Department of Psychiatry, University of Oxford*

**Background:** Psychiatric disorders are linked to violence and prevalent in people experiencing homelessness. We aimed to study the association of homelessness, psychiatric disorders, and violence.

**Methods:** We did a nationwide, register-based cohort study of people living in Denmark 2001-2021, aged 15 years or older. The study population was obtained from the Danish Civil Registration System, which was linked to other population-based registers. The outcome was a first police-recorded violent offence leading to a conviction. We calculated incidence rates (IRs) per 10,000 person-years, incidence rate ratios (IRRs) using Poisson regression analysis, and probability of violent offending. Analyses were stratified by sex and adjusted for calendar year, age, other socio-demographic factors, and psychiatric disorders.

**Results:** The study cohort included 1,786,433 Danish residents aged 14-42 years living between Jan 1, 2001, and Dec 31, 2021, contributing with 21,336,322 person-years at risk. Overall, 57,084 (3.2%) individuals had committed a violent crime during follow-up. In people experiencing homelessness, after five years follow-up, the probability of perpetrating violent crime was: 15.8% (95% CI 14.8-16.8) in men and 5.1% (95% CI 4.4-5.9) in women. The adjusted IRR of violent offending was 4.8 (95% CI 4.5-5.1) in men and 6.3 (95% CI 5.6-7.2) in women with a history of homelessness compared with individuals without. Individuals with a history of homelessness and co-occurring psychiatric disorders had the highest risk of violent offending compared with individuals without.

**Conclusion:** Homelessness is associated with an increased risk of violent crimes. Improved efforts of violence prevention aimed at socially marginalised people are needed.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Diabetic retinopathy and risk of prevalent and 5-year incident cardiovascular disorders in type 2 diabetes

**Associated Professor Lonny Stokholm**<sup>1,2</sup>, Sören Möller<sup>1,2</sup>, Jakob Grauslund<sup>3,4,5</sup>

<sup>1</sup>Research Unit OPEN, Department of Clinical Research, University of Southern Denmark, <sup>2</sup>Open Patient data Explorative Network (OPEN), Odense University Hospital, <sup>3</sup>Department of Clinical Research, University of Southern Denmark, <sup>4</sup>Department of Ophthalmology, Odense University Hospital, <sup>5</sup>Steno Diabetes Center Odense, Odense University Hospital

**Background:** In earlier studies, type 2 diabetes (T2D) and diabetic retinopathy (DR) have been associated with cardiovascular disorders (CVD), but longitudinal data are sparse, and it is uncertain if correlations would also apply in an entire population of patients, many of whom do not attend hospital care.

**Methods:** This study is a nationwide, matched, register-based cohort study where cases (n=153,238) were identified in the Danish Registry of Diabetic Retinopathy (DiaBase) as patients with T2D participating in the national DR screening program between 2013 and 2018. Each case was matched 1:5 by sex and birth year with non-diabetes controls (n=746,148). Indexdate was defined as the date of first occurrence in DiaBase. CVD information was sourced from the Danish National Patient Register.

**Results:** We found that 31.9% of cases and 21.1% of controls were registered with CVD at indexdate. Those registered with CVD were more likely to be men and older of age than those without CVD. Overall, using multivariable logistic regression model cases had a higher risk of prevalent CVD (adjusted OR: 1.71, 95%CI 1.69-1.73) and using multivariable Cox models we estimated 5-year incident CVD (adjusted HR: 1.23 95% CI 1.21-1.26) with a trend of increased risk with higher level of DR (adjusted HR 1.20 vs 1.41 vs 1.69 vs 2.33 vs 2.38 for DR-level 0 to 4, respectively).

**Conclusion:** In Denmark, patients with T2D had a higher risk of prevalent and incident CVD. Further, we found a severity-response gradient between DR and CVD, suggesting an association between DR and CVD.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## The complex relationship between sleep and mood in young adults: Mapping the underlying biopsychosocial mechanisms in a causal loop diagram

**Jeroen Floris Uleman**<sup>1</sup>, Adrian Zucco<sup>1</sup>, Naja Hulvej Rod<sup>1</sup>

<sup>1</sup>*University Of Copenhagen*

**Background:** Sleep and mood problems are common among young adults and have significant implications for long-term health outcomes. Understanding the bidirectional feedback loops that keep individuals stuck in these problems is an evolving area of research. While current studies tend to emphasize a one-way interaction, a more holistic approach is warranted to comprehensively capture the underlying biopsychosocial mechanisms and interconnections.

**Methods:** We constructed a causal loop diagram (CLD) informed by two existing CLDs, a multidisciplinary team of domain experts, and a review of relevant scientific literature. We employed network and complexity science tools to visualize and analyze the CLD, enabling an exploration of potential intervention targets.

**Results:** The CLD provides novel insights into the complex feedback structures that underlie sleep and mood issues in young adults, highlighting several cross-scale feedback loops that likely play a role in their onset and persistence. Identifying these loops would be challenging from a monocausal or monodisciplinary perspective. Possible intervention strategies that might disrupt or prevent the vicious cycle were identified.

**Conclusion:** Our findings underscore the relevance and effectiveness of a complex systems perspective in addressing co-occurring sleep and mood issues among young adults. By identifying opportune intervention points within the biopsychosocial framework, our work provides a basis for targeted system interventions to promote both healthy sleep and mood. Future work will involve the development of a data-driven system dynamics model constructed from the CLD, promising a novel avenue for addressing these deeply intertwined public health challenges.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Febrile seizures and subsequent academic performance in standardized tests: A nation-wide cohort study in Danish School-aged Children

Julie W. Dreier<sup>1,2</sup>, **Betina Trabjerg**<sup>1,2</sup>, Bjarke Feenstra<sup>3,4</sup>, Jakob Christensen<sup>5,6</sup>

<sup>1</sup>National Centre for Register-Based Research, Business and Social Sciences, Aarhus University, <sup>2</sup>Centre for Integrated Register-based Research (CIRRAU), Aarhus University, <sup>3</sup>Department of Epidemiology Research, Statens Serum Institut, <sup>4</sup>Department of Clinical Immunology, Copenhagen University Hospital - Rigshospitalet, <sup>5</sup>Department of Neurology, Aarhus University Hospital, <sup>6</sup>Department of Clinical Medicine, Aarhus University

**Background:** Febrile seizures are usually considered a benign condition, but recurrent episodes may be associated with risk of epilepsy and psychiatric disorders and the long-term association with academic performance is not well described. We therefore examined this association.

**Methods:** We performed a nation-wide register-based cohort study of children born in Denmark 1997-2009, who participated in the Danish National School Test Program 2010-2019. Children with febrile seizures were identified through the registers and academic performance was assessed in reading (Danish) and mathematics across grades 2 through 8. Using linear regression we estimated the difference in standardized scores with robust standard errors, between children with and without febrile seizures, adjusted for potential confounders.

**Results:** Among 582,840 children, we identified 22,610 (3.9%) with febrile seizures. Academic performance was marginally lower in children with febrile seizures (mean score for children with febrile seizures [55.6] and children without [56.6]; adjusted difference, -0.4, 95% CI: -0.7; -0.2). In children with recurrent admissions with febrile seizures, the adjusted difference was -1.3 (-2.0; -0.6), -2.2 (-5.0; 0.5) and -15.9 (-22.2; -9.7) in children with respectively 2, 5 and 10 or more admissions. Subsequent epilepsy by the time of testing was likewise associated with poorer academic performance: -6.1 (-7.8; -4.5).

**Conclusion:** We found that academic performance among children with a history of febrile seizures is generally comparable to performance in children without febrile seizures. However, smaller subsets (e.g. children with many recurrences of febrile seizures or who subsequently develop epilepsy) are at risk of having impaired academic performance.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Changes in characteristics for patients diagnosed with mental disorders during 2000-2022 in Denmark

**Mette Lise Lousdal**<sup>1</sup>, Oleguer Plana-Ripoll<sup>1</sup>

<sup>1</sup>*Department of Clinical Epidemiology, Aarhus University and Aarhus University Hospital*

**Background:** The incidence of clinically diagnosed mental disorders has increased during the last decades. This may be due to increases in environmental risk factors or explained by other factors, such as a widening of diagnostic criteria, increased public and professional awareness, or changes in capacity and referrals. We aim to describe demographic, economic, social, and health-related changes for patients diagnosed with a mental disorder during 2000-2022.

**Methods:** In the Danish Psychiatric Central Research Register, we will identify patients with organic mental disorders (ICD-10 codes: F00-F09), substance-use disorders (F10-F19), schizophrenia spectrum disorder (F20-F29), mood disorders (F30-F39), neurotic disorders (F40-F48), or personality disorders (F60). Patient populations will be compared to a representative sample of the general population. From the Danish National Patient Registry and the Danish National Health Service Register, information on comorbidity and health service use will be obtained. From Statistics Denmark, information on income and education will be retrieved. Individuals will be categorized based on date of diagnosis and place of residence. First, age and sex distributions will be plotted for each calendar time period. Second, the subpopulations for each calendar period will be directly standardized according to age and sex before comparing other demographic, economic, social, and health-related characteristics.

**Results:** Analyses are ongoing (preliminary results expected to be available in June 2024).

**Conclusion:** In-depth knowledge about the characteristics of diagnosed individuals is a prerequisite to understand changes over time in the burden of psychiatric disorders. Outcome measures estimating changes over time should be adjusted for patient characteristics and severity.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Appraising the prognostic value of self-reported physical activity for lower-extremity complications of type 2 diabetes: a cohort study using Swedish national registers.

**Thomas Vogt**<sup>1</sup>, Emerald Heiland<sup>1</sup>, Beatrice Kennedy<sup>2</sup>, Liisa Byberg<sup>1</sup>, Karl Michaëlsson<sup>1</sup>, Hannah L Brooke<sup>1</sup>

<sup>1</sup>*Department of Surgical Sciences, Uppsala University,* <sup>2</sup>*Department of Medical Sciences, Uppsala University*

**Background:** Identifying variables that predict lower-extremity complications of type 2 diabetes could help find individuals at high risk. Here, we elucidate whether self-reported physical activity is a prognostic factor for these complications beyond current clinical indicators.

**Methods:** This cohort study included all adults with newly diagnosed type 2 diabetes in Sweden (2007-2019) with  $\geq 1$  record in the National Diabetes Register (NDR) ( $n=344,348$ ). Incident outcomes (peripheral neuropathy/peripheral vascular disease combined, foot ulceration, and amputation) were retrieved from the NDR and hospital-based Patient Register. Physical activity and covariates (sex, diabetes duration, BMI, glycated haemoglobin, smoking status, blood pressure, cholesterol, past cardiovascular event(s), time since last healthcare visit) were obtained from the NDR. We fitted Fine-Gray models at different landmark ages using repeatedly measured covariates, treating death as a competing event. Additional analyses will include using multiple imputed data, stratifying by sex, and comparing the performance of models with and without physical activity.

**Results:** Low levels of self-reported physical activity were associated with higher incidence of lower-extremity complications in adjusted complete-case analyses. For foot ulceration, the subdistribution hazard ratios (95% confidence intervals) comparing no physical activity to daily physical activity at age 50, 60, and 70, were 2.6 (1.2-5.8), 2.1 (1.2-3.6), and 2.2 (1.5-3.3). Estimates were similar for the other lower-extremity complications.

**Conclusion:** Initial results are compatible with self-reported physical activity being a prognostic factor for lower-extremity complications beyond current clinical indicators. Additional analyses will aid in evaluating whether this could enhance early identification and prevention of lower-extremity complications in diabetes care.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Juvenile idiopathic arthritis does not affect school performance – a national register-based study

**Malthe Jessen Pedersen**<sup>1</sup>, Christian Høst<sup>2</sup>, Stefan Nygaard Hansen<sup>1</sup>, Jens Klotsche<sup>3</sup>, Kirsten Minden<sup>3,4</sup>, Bent Deleuran<sup>5,6</sup>, Bodil Hammer Bech<sup>1</sup>

<sup>1</sup>Department of Public Health, Aarhus University, <sup>2</sup>Department of Paediatric and Adolescent Medicine, Aarhus University Hospital, <sup>3</sup>Epidemiology Unit, Deutsches Rheuma-Forschungszentrum, <sup>4</sup>Department of Pediatric Respiratory Medicine, Immunology and Critical Care Medicine, Charité Universitätsmedizin Berlin, <sup>5</sup>Department of Rheumatology, Aarhus University Hospital, <sup>6</sup>Department of Biomedicine, Aarhus University

**Background:** Previous studies have shown conflicting results on academic achievements among children with juvenile idiopathic arthritis (JIA). We aimed to compare the results of the National Danish School Testing (NDST) and final 9th grade exams in Danish and mathematics between children with and without JIA. Further to study possible differences across parental socioeconomic status (SES).

**Methods:** A population-, register-based cross-sectional study was performed. All children participating in NDST in reading or mathematics in 2nd to 8th grade from 2011 to 2019 or had final 9th grade marks from 2011-2020 available were included. Children with least five hospital contacts with a diagnosis code of JIA (ICD-10 codes DM08 and DM09) were included as having JIA. Data was analyzed using linear regression models. Further stratified analysis on SES was performed.

**Results:** We included 1,541 and 1,410 children with JIA in the study of the NDST and 9th grade final marks respectively. The results of the NDST showed no significant difference in scores between children with JIA and children without JIA in reading and only in 6th grade mathematics 2 points lower scores (coefficient -1.73 95% CI [-3.33; -0.13]) among children with JIA. The final 9th grade results of children with and without JIA did not differ in neither Danish nor mathematics. Family income was the only SES factor affecting the association between JIA and final exam marks.

**Conclusions:** Children with JIA perform as good as their peers in school. Family income was the only SES factor affecting the association.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Diabetic complications and risk of depression and anxiety among adults with type 2 diabetes

**Associate Professor Trine Allerslev Horsbøl**<sup>1</sup>, Sofie Have Hoffmann<sup>1</sup>, Anne Bonde Thorsted<sup>1</sup>, Siri Rosenkilde<sup>1</sup>, Sara Fokdal Lehn<sup>1,2</sup>, Allan Kofoed-Enevoldsen<sup>2,3</sup>, Monica Santos<sup>4</sup>, Peter Bindsløv Iversen<sup>2</sup>, Lau Caspar Thygesen<sup>1</sup>

<sup>1</sup>National Institute of Public Health, University of Southern Denmark, <sup>2</sup>Steno Diabetes Center Sjælland, <sup>3</sup>Department of Endocrinology, Nykøbing Falster Hospital, <sup>4</sup>Psychiatry West

**Background:** It is well known that individuals with type 2 diabetes are at increased risk for mental health issues, but the mechanisms behind needs further investigation. The aim of this study is to examine if diabetic complications increase the risk of depression and/or anxiety among adults with type 2 diabetes.

**Methods:** This register-based, prospective study included 265,799 adults diagnosed with type 2 diabetes between 1997 and 2017 without a recent history of depression or anxiety. Diabetic complications included cardiovascular disease, amputations, neuropathy, nephropathy, and retinopathy. Diabetic complications and depression and anxiety were defined by hospital contacts and prescription-based medication. All individuals were followed from the date of type 2 diabetes diagnosis until date of incident depression or anxiety, emigration, death, or 31 December 2018, whichever occurred first.

**Results:** The incidence rate of depression and/or anxiety was 3,368 per 100,000 person-years among individuals with diabetic complications, and 1,929 per 100,000 person-years among those without. Having or developing any diabetic complication was associated with increased risk of depression and/or anxiety (HR 1.77, 95% CI 1.73-1.80). The risk for depression and/or anxiety was increased for all types of diabetic complications. The strongest association was found for amputation of lower extremities (HR 2.16, 95% CI 2.01-2.31), and the weakest for retinopathy (HR 1.13, 95% CI 1.09-1.17).

**Conclusion:** Individuals with type 2 diabetes and diabetic complications are at increased risk of depression and anxiety. This points towards the importance of an increased clinical focus on mental well-being among individuals with type 2 diabetes and complications.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Adjusting excess mortality in major depressive disorder for lifestyle factors using survey data to complement registers: propensity score calibration

**PhD student Katrine Bødkergaard**<sup>1</sup>, Mette Lise Lousdal<sup>1</sup>, Timothy L. Lash<sup>1,2</sup>, Oleguer Plana-Ripoll<sup>1</sup>

<sup>1</sup>*Department of Clinical Epidemiology, Aarhus University Hospital and Aarhus University,* <sup>2</sup>*Department of Epidemiology, Rollins School of Public Health, Emory University*

**Background:** Major depressive disorder (MDD) is a leading contributor to the global burden of disease and associated with excess mortality. This might be partly explained by lifestyle factors such as smoking, alcohol consumption, and over- or underweight. Information on lifestyle factors is not available for the entire population in registers but sometimes for smaller subsamples using e.g. health surveys. We will investigate how lifestyle factors affect the MDD-mortality association by combining register and survey data using propensity score (PS) calibration.

**Methods:** We will conduct a cohort study including all individuals aged 16+ years living in Denmark on January 1st 2017 and follow them for 5 years or until emigration or death, whatever comes first. From Danish registries, we will obtain information on MDD, hospital contacts, socioeconomic position etc. To further adjust for lifestyle factors we will consider the subsample of the 2017 Danish National Health Survey participants and perform PS calibration. We will report PS-adjusted mortality rate ratios (MRRs) using a register-based PS for the entire population and a PS based on both registers and survey-reported lifestyle factors for the restricted subsample. Combining both PSs will result in a calibrated MRR for the entire population, taking account of lifestyle factors.

**Results:** Analyses are ongoing (preliminary results expected to be available in June 2024).

**Conclusion:** This study will provide more valid estimates of the MDD-mortality association by including survey information to adjust for lifestyle factors. We expect PS calibration provides similar estimates to restricting to survey participants but a higher precision.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Childhood body mass index and risk of infertility in women

**Dorthe Corfitzen Pedersen**<sup>1</sup>, Mohammed Hudda<sup>1,2</sup>, Allan Jensen<sup>3</sup>, Susanne K. Kjær<sup>3,4</sup>, Petur B. Juliusson<sup>5,6</sup>, Kathleen M. Rasmussen<sup>7</sup>, Jennifer L. Baker<sup>1</sup>

<sup>1</sup>Center for Clinical Research and Prevention, Copenhagen University Hospital - Bispebjerg and Frederiksberg, <sup>2</sup>Population Health Research Institute, St. George's, University of London, <sup>3</sup>Virus, Lifestyle and Genes, Danish Cancer Institute, <sup>4</sup>Department of Gynecology, Copenhagen University Hospital, Rigshospitalet, <sup>5</sup>Department of Health Registry Research and Development, National Institute of Public Health, <sup>6</sup>Department of Clinical Science, University of Bergen, <sup>7</sup>Division of Nutritional Sciences, Cornell University, Ithaca

**Background and aim:** Women with overweight or obesity are at greater risk of developing infertility than women with normal weight. As excess adiposity develops over time, we investigated whether body mass index (BMI) in childhood was associated with infertility in adulthood.

**Methods:** We studied 54,914 women born between 1955 and 1996 with information on measured height and weight at age 13 years from the Copenhagen School Health Records Register. Thinness, normal-weight, overweight, and obesity were defined according to the International Obesity Task Force (IOTF) BMI cut-offs. We identified women with infertility in the Danish National Patient Register from 1977-2017. Hazard ratios (HR) and 95% confidence intervals (CI) were estimated using Cox proportional hazards regression. Age was used as the underlying timescale, and the analyses were stratified by birth cohorts.

**Results:** At age 13 years, 5.4% of the women were classified as having thinness, 83.9% with normal-weight, 8.3% with overweight, and 2.4% with obesity. During follow-up, 3,880 women (5.0%) were diagnosed with infertility. When compared to women with normal-weight at age 13 years, having thinness or overweight was not associated with infertility (HR = 0.96 [95% CI: 0.86-1.06] and 0.97 [0.84-1.11], respectively), whereas women with obesity at age 13 years had a higher risk (HR = 1.47 [1.08-2.00]).

**Conclusion:** Our results suggest that childhood obesity is associated with an increased risk of female infertility in adulthood. Work is ongoing with more refined information about infertility from national studies and registers.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Discovering the Determinants of Overweight and Obesity: an Exploratory Post Hoc Subgroup Analysis of the Kiel Obesity Prevention Study

**Elizabeth Mannion**<sup>1</sup>, Kristine Bihrmann<sup>1</sup>, Sandra Plachta-Danielzik<sup>2</sup>, Anja Bosy-Westphal<sup>3</sup>, Manfred Müller<sup>3</sup>, Christian Ritz<sup>1</sup>

<sup>1</sup>University of Southern Denmark, <sup>2</sup>Competence network Intestinal Diseases, <sup>3</sup>Kiel University

**Background/ aim:** To investigate potential subgroups of children, within in the Kiel Obesity Prevention study (KOPS), with differing treatment effects for the outcome measure weight status at 4 years. The KOPS study delivered a multicomponent school intervention to cohorts of children in Kiel but found no overall effect on weight status outcome. However, KOPS authors suggested there may be subgroup variations in treatment effect.

**Methods:** Data were collected as part of the KOPS, for samples of 5 to 7 year olds between 1996 and 2001 with 4-year follow up measurements between 2000 and 2004 (n = 1772). The present study conducted a post hoc subgroup analysis of weight status outcome at 4 years follow up. A general linear model was used, including a treatment-subgroup interaction term, to estimate subgroups as a moderator of the treatment effects on weight status outcome.

**Results:** Results found significant subgroup – intervention interaction effects. Children who were a sports-club member and in the intervention group were less likely to be overweight at 4 years follow up (P = 0.02), while children whose parents reported that the TV/PC was one of their child's most frequent activities were more likely to be obese at follow up (P= 0.03). Grandparent's history of stroke (P < 0.01) and high socio-economic status (P= 0.02) also had significant interaction effects.

**Conclusion:** These data suggest that a child's physical activity may affect treatment effects on weight status outcome, giving arise to opportunities to increase the effect of interventions on weight status outcome.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Changes in polygenic scores for psychiatric disorders for cohorts born between 1981-2008

**Mette Lise Lousdal**<sup>1</sup>, Sonja Labianca<sup>2,3</sup>, Andrew Schork<sup>2,3,4</sup>, Esben Agerbo<sup>2,5,6</sup>, John McGrath<sup>5,7</sup>, Bjarni Vilhjálmsson<sup>2,5,8</sup>, Oleguer Plana-Ripoll<sup>1,5</sup>

<sup>1</sup>Department of Clinical Epidemiology, Aarhus University and Aarhus University Hospital, <sup>2</sup>Lundbeck Foundation Initiative for Integrative Psychiatric Research, iPSYCH, <sup>3</sup>Institute of Biological Psychiatry, Mental Health Services, Copenhagen University Hospital, <sup>4</sup>Lundbeck Foundation Center for GeoGenetics, GLOBE Institute, University of Copenhagen, <sup>5</sup>National Centre for Register-Based Research, Aarhus University, <sup>6</sup>Centre for Integrated Register-Based Research, Aarhus University, <sup>7</sup>Queensland Brain Institute, University of Queensland, <sup>8</sup>Bioinformatics Research Centre, Aarhus University

**Background:** We aimed to explore whether polygenic scores (PGS) for psychiatric disorders – which summarise genetic liability – have changed in the general population and in individuals diagnosed with psychiatric disorders in Denmark.

**Methods:** iPSYCH2015 is a population-based case-cohort sample selected from all singleton births between 1981-2008 (n=1,657,449). Diagnoses of schizophrenia spectrum disorder (SSD), major depressive disorder (MDD), autism spectrum disorder (ASD), and attention deficit hyperactivity disorder (ADHD) were obtained from hospital registers. We used linear regression to examine the change in PGS according to birth cohort and Cox regression to estimate hazard ratios for psychiatric disorders based on PGS, birth year, and their interaction.

**Results:** We included 40,501 controls and 61,232 cases (10,701 SSD, 28,216 MDD, 15,758 ASD, and 16,686 ADHD). In the random subcohort, PGS showed no linear trend, except for SSD with an average 10-year change of -0.013 (-0.025; -0.002). In patient cohorts, the average 10-year change was: SSD (-0.083 [-0.132; -0.034]), MDD (-0.046 [-0.078; -0.013]), ASD (-0.033 [-0.076; 0.011]), and ADHD (-0.003 [-0.049; 0.043]). We found an elevated risk of diagnosed psychiatric disorders for higher PGS and more recent birth cohorts. For SSD, the association between PGS and risk of psychiatric disorders was reduced with 9% (3%; 14%) and 11% (4%; 18%) for birth years 1990-1995 and 1996-2001, respectively, as compared to 1984-1989.

**Conclusion:** For SSD and MDD patient populations, the mean PGS decreased according to birth year. For SSD, the association between PGS and the risk of psychiatric disorders decreased in later birth cohorts.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Genetic variants and social benefit receipt in premenopausal women with breast cancer treated with docetaxel: A Danish population-based cohort study

**Julie Andersen Schmidt**<sup>1</sup>, Cathrine F Hjorth<sup>1</sup>, Dóra K Farkas<sup>1</sup>, Per Damkier<sup>2,3</sup>, Søren Feddersen<sup>3,4</sup>, Stephen Hamilton-Dutoit<sup>5</sup>, Bent Ejlersen<sup>6,7</sup>, Timothy L Lash<sup>1,8</sup>, Thomas P Ahern<sup>9</sup>, Deirdre Cronin-Fenton<sup>1</sup>

<sup>1</sup>Department of Clinical Epidemiology, Department of Clinical Medicine, Aarhus University and Aarhus University Hospital, <sup>2</sup>Department of Clinical Pharmacology, Odense University Hospital, <sup>3</sup>Department of Clinical Research, University of Southern Denmark, <sup>4</sup>Department of Clinical Biochemistry, Odense University Hospital, <sup>5</sup>Department of Clinical Medicine and Department of Pathology, Aarhus University Hospital, <sup>6</sup>Danish Breast Cancer Group, Department of Oncology, Rigshospitalet, University of Copenhagen, <sup>7</sup>Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, <sup>8</sup>Department of Epidemiology, Rollins School of Public Health, Emory University, <sup>9</sup>Department of Surgery, The Robert Larner, M.D. College of Medicine, The University of Vermont

**Background and Aim:** Breast cancer patients' need for social benefits may increase following taxane-based chemotherapy, due to long-lasting side effects impeding patients' ability to work. Specific single nucleotide polymorphisms (SNPs) may mediate the incidence and severity of side effects. We aimed to investigate the association between SNPs related to taxane metabolism, transport, toxicity, or DNA and neural repair, and the ability to work, using receipt of social benefits after breast cancer as a proxy.

**Methods:** From the Danish Breast Cancer Group, we identified premenopausal women diagnosed with stage I-III breast cancer during 2007–2011, treated with docetaxel-based chemotherapy. We genotyped 21 SNPs in archived breast tumor tissue using TaqMan assays. We ascertained social benefit payments from one year before to five years after breast cancer diagnosis, using nation-wide, administrative registry data. For each week, we categorized women as receiving health-related (including sick leave or disability pension), labor market-related benefits (including unemployment benefits), or as being self-supporting. We computed rate ratios (RRs) for variant carriers (heterozygotes and homozygotes combined) vs. non-carriers, using negative binomial regression with robust variance estimation.

**Results and Conclusion:** Among 2,430 women, 12% received health-related benefits before diagnosis, 80% at the time of diagnosis, and  $\approx$ 24% two to five years after diagnosis. Labor market-related benefits were uncommon (3–6%). All RRs were near-null and/or imprecise. In a setting with equal access to health care and social benefits, we found no clinically meaningful impact of taxane-related SNPs on social benefit receipt among premenopausal breast cancer survivors treated with docetaxel.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Ergonomic work demands during pregnancy and the risk of preterm birth – findings from a Danish register-based cohort study

**Camilla Sandal Sejbaek**<sup>1</sup>, Esben Meulengracht Flachs<sup>1</sup>, Hannah Frankel<sup>1</sup>, Sandra Sjøgaard Tøttenborg<sup>1,2</sup>, Ida Elisabeth Huitfeldt Madsen<sup>3,4</sup>, Professor Reiner Rugulies<sup>3</sup>, Karin Sørig Hougaard<sup>2,3</sup>, Jens Peter Bonde<sup>1,2</sup>, Luise Mølenberg Begtrup<sup>1,2</sup>

<sup>1</sup>RegionH, University Hospital, Bispebjerg, Department of Occupational and Environmental Medicine, <sup>2</sup>Department of Public Health, University of Copenhagen, <sup>3</sup>National Research Centre for the Working Environment, <sup>4</sup>National Institute of Public Health, University of Southern

**Background:** Single occupational ergonomic exposures during pregnancy might increase the risk of preterm birth. We aim to investigate if an overall maternal occupational physical demand will increase the risk of preterm birth.

**Methods:** The register-based cohort DOC\*X-Generation (1977-2018) includes all pregnant women working and their liveborn children. The Medical Birth Register (Health Data Authority) contributes information with gestational age defining preterm (22-36 gestational week) and very and extremely preterm (22-28/29-32 gestational week, respectively) births. The Occupational and Industry Register provides occupational codes during pregnancy – DISCO-88 (DOC\*X, Bispebjerg Hospital). The Job exposure matrix (JEM) on ergonomic occupational demands (Work Environment and Health, Denmark) assigned women exposure values on occupational code (categorized: five groups). Register information (Statistics Denmark) provide confounders.

**Results:** The preliminary findings included 1,482,493 pregnancies among women working during pregnancy; of these 5.1% were preterm births (22-36 gestational week). Adjusted analyses of ergonomic occupational demands showed an increased risk of preterm birth (the highest exposure group OR=1.15 (95% CI 1.12-1.19)) and very/extreme preterm (the highest exposure group OR=1.22 (95% CI 1.15-1.31)/OR=1.25 (95% CI 1.09-1.43), respectively) births. There was a tendency to a dose-response relationship for both outcomes.

**Conclusion:** Advantages are a non-selected cohort of working women over 40 year-period and includes possible confounders, e.g., maternal country of origin and education. One limitation is the JEM only includes data from 2012 and 2014, therefore does not include changes over time. This study supports the previous findings of an increased risk of preterm birth due to ergonomic demanding work during pregnancy.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Evaluating the association between socioeconomic position and survival after a childhood CNS tumour in Sweden: a register-based cohort study

**Elena Extrand**<sup>1</sup>, Hanna Mogensen<sup>2,3</sup>, Giorgio Tettamanti<sup>3</sup>

<sup>1</sup>*Department of Surgical Sciences, Uppsala University,* <sup>2</sup>*Department of Immunology, Genetics and Pathology, Uppsala University,* <sup>3</sup>*Unit of Epidemiology, Institute of Environmental Medicine, Karolinska Institutet*

**Introduction:** Evidence suggests that survival after a central nervous tumour among children might be impacted by socioeconomic position, even in countries with universal healthcare. However, the mechanisms driving this association are unclear. The aims are (1) to learn about discrepancies that exist between the National Cancer Register and the National Quality Register for Childhood Cancer; (2) to determine if there is an association between parental socioeconomic position and central nervous system tumour survival among children in Sweden.

**Methods:** This is a register-based cohort study including all children ages 1-14 in Sweden diagnosed with CNS tumours from 1991-2014 identified in the National Cancer Register and the Swedish Childhood Cancer Registry. Chi-squared statistics were calculated to examine the association between register inclusion and socioeconomic position (parental education and income). Cox regression models were used to estimate HR and 95% CI of the association between parental socioeconomic position and survival.

**Results:** Socioeconomic position was not associated with register inclusion. From 1991-2014, there was a modest association between low parental education and higher mortality after a childhood CNS tumour (HR:1.29; 95% CI: 0.92-1.82), but not between income and mortality. From 1991-2004, results were similar; while in 2005-2014, low household income was associated with a higher mortality (HR:1.98; 95% CI: 0.97-4.03).

**Conclusion:** This study adds to existing evidence that there is an association between parental socioeconomic position and survival after a childhood CNS tumour in Sweden. Future research should explore both how this association is changing and the mechanisms driving these differences.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Cause-Specific Mortality After Spousal Bereavement: A Danish Register-based Cohort Study of 223,500 Older Adults

**Mathilde Marie Brünnich Sloth**<sup>1,2</sup>, Samir Bhatt<sup>1,3</sup>, Laust Hvas Mortensen<sup>1,2</sup>, Alexandros Katsiferis<sup>1,2</sup>

<sup>1</sup>*Section of Epidemiology, Department of Public Health, University of Copenhagen*, <sup>2</sup>*Data Science Lab, Statistics Denmark*, <sup>3</sup>*Department of Infectious Disease Epidemiology, Imperial College London*

**Background:** Spousal bereavement is a stressor associated with increased all-cause mortality. However, the association with specific causes of death has not been thoroughly investigated. The aim of this study was to estimate the average effect of bereavement on cause-specific mortality (I) and develop prognostic models predicting individualized mortality risks (II).

**Method:** The study leveraged nationwide registry data on 223,500 married Danish individuals aged  $\geq 65$  years. Each person bereaved in 2012 was matched at the date of bereavement (index date) with 20 non-bereaved. Individuals were followed from the index date until death, emigration, or 3-year end of follow-up. Deaths from cancer, cardiovascular diseases (CVD), dementia/Parkinson's, diabetes, digestive, psychiatric/suicide, and respiratory causes were analyzed. G-formula was used to estimate the average effect of bereavement on cause-specific mortality in a counterfactual framework. We developed Extreme Gradient Boosting models (XGBoost) utilizing information on sociodemographic factors and healthcare expenditures as potential predictors. Performance was assessed by discrimination and calibration.

**Results:** Bereavement was associated with increased mortality risk from psychiatric diseases/suicide (Risk ratio (RR):3.35 [95% confidence interval 2.34;4.36]), digestive diseases (RR:1.47 [1.20;1.74]), CVD (RR:1.18 [1.10;1.25]), and respiratory diseases (RR:1.16 [1.05;1.27]). XGBoost models were able to provide accurate predictions for most causes of death, with their Index of Prediction Accuracy (IPA) ranging from 6.5 to 11.1.

**Conclusion:** We found that spousal bereavement was associated with an increased risk of dying from CVD, psychiatric diseases/suicide, digestive and respiratory diseases. The proposed methodology can assist in a more efficient risk profiling and prognosis of individuals in high risk.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Exposure to workplace violence and threats, and risk of antidepressant medication use

**Louise Dalsager**<sup>1</sup>, Ida E. H. Madsen<sup>1,2</sup>, Professor Reiner Rugulies<sup>1,3</sup>

<sup>1</sup>*The National Research Centre For The Working Environment*, <sup>2</sup>*National Institute of Public Health, University of Southern Denmark*, <sup>3</sup>*Section of Epidemiology, Department of Public Health, University of Copenhagen*

**Background and Aim:** Previous studies have reported that exposure to workplace violence and threats is associated with risk of depression. However, results have been ambiguous, partly due to differences in methodology and low numbers of both exposed individuals and cases. We use repeated measures of exposure and outcome to increase power and apply a marginal model to take account of time-variance.

**Methods:** We used data from the Work Environment and Health in Denmark (WEHD) study, a biennial nationwide survey on working conditions and health (2012-2018). Participants were eligible if they had responded to the items on workplace threats and violence in two WEHD waves (WEHD-1 and WEHD-2) (N=19,883). Information on redeemed prescriptions of antidepressant medication was retrieved from The Danish National Prescription Registry. We applied a Marginal Structural Model with Inverse Probability of Treatment Weights to evaluate the impact of workplace threats/violence on use of antidepressants.

**Results:** Workplace violence or threats were reported by 2,132 and 2,057 participants in WEHD-1 and WEHD-2, respectively. A prescription for antidepressants was redeemed by 405 participants between WEHD-1 and WEHD-2, and 604 between WEHD-2 and end of the 2-year follow-up. Exposure to workplace threats/violence was associated with a 1.35 higher odds of redeeming a prescription for antidepressants (95% CI: 1.08;1.69).

**Conclusion:** Workplace violence or threats of violence are associated to an increase in the use of antidepressants among Danish employees. The estimate from the marginal approach was similar to the majority of estimates from conditional approaches reported in the literature.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Does the association between neighbour noise and sleep disturbances vary by socioeconomic status?

**Stine Kloster**<sup>1</sup>, Michael Davidsen<sup>1</sup>, Anne Illemann Christensen<sup>1</sup>, Annetter Kjær Ersbøll<sup>1</sup>

<sup>1</sup>*National Institute of Public Health, University Of Southern Denmark*

**Background:** Environmental health inequalities, across socioeconomic groups, may arise due to differences in vulnerability to negative health effects of noise. Hence, we aim to test whether the association between neighbor noise and sleep disturbances differ by educational level.

**Methods:** We used cross-sectional data from the Danish Health and Morbidity Surveys in 2010, 2013, 2017, and 2021 (n=42,690). Odds ratio (OR) of sleep disturbances was estimated using a logistic regression adjusted for sex, age, education, and calendar year. The possible effect-modification of educational level on the association between neighbor noise and sleep disturbances was tested by including the main effects and the interaction term in the adjusted model. The joint effect was examined by including the interaction term in the model without the main effects.

**Results:** A total of 14.9% reported neighbor noise, and 39.8% reported sleep disturbances. The OR of sleep disturbances among individuals reporting neighbor noise compared to individuals not reporting neighbor noise was 1.80 (95% CI 1.70-1.91). Education was strongly associated with sleep disturbances with OR of 1.51 (95% CI 1.41-1.63) for basic- and 1.16 (95% CI 1.11-1.21) for vocational- compared to higher education. Individuals reporting neighbor noise had a higher OR of sleep disturbances within all educational groups; 2.17 (95% CI 1.80-2.61), 1.81 (95% CI 1.166-1.98) and 1.74 (95% CI 1.60-1.88) within basic, vocational, and higher education (p-value of multiplicative interaction=0.09).

**Conclusion:** There was a tendency, that the association between neighbor noise and sleep disturbances varied by educational group with higher associations among individuals with basic education.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Body mass index and metabolic syndrome phenotypes and the risk of major cardiovascular diseases: a combined analysis based on four Swedish cohorts

Lars Lind<sup>1</sup>, Ulf Risérus<sup>2</sup>, Sölve Elmståhl<sup>3</sup>, Johan Ärnlöv<sup>4,5</sup>, Karl Michaelsson<sup>6</sup>, **Docent Olga E Titova**<sup>6</sup>

<sup>1</sup>*Department of Medical Sciences, Clinical Epidemiology, Uppsala University,* <sup>2</sup>*Department of Public Health and Caring Sciences, Clinical Nutrition and Metabolism, Uppsala University,* <sup>3</sup>*Department of Clinical Sciences in Malmö, division of Geriatric Medicine, Lund University,* <sup>4</sup>*Department of Neurobiology, Care Sciences and Society, division of Family Medicine and Primary Care, Karolinska Institutet,* <sup>5</sup>*Department of Medical Sciences, School of Health and Welfare, Dalarna University,* <sup>6</sup>*Department of Surgical Sciences, unit of Medical Epidemiology, Uppsala University*

**Background:** Cardiovascular disease (CVD) risk among individuals across different categories of body mass index (BMI) might depend on their metabolic health. It remains unclear to what extent uncommon phenotypes, e.g., metabolically healthy obesity and normal weight with metabolic syndrome (MetS), may be linked to specific CVDs, as the majority of existing evidence is related to composite CVD outcomes. We investigated how different combinations of BMI and MetS were linked to major CVDs in middle-aged and older individuals, and how the number of MetS components affected the risk of CVDs in obese individuals.

**Methods:** We conducted separate and combined analyses of 36,496 individuals from four population-based studies regarding the risk of incident CVDs in different combinations of BMI/MetS status (normal-weight, overweight or obese/MetS yes or no). Participants were followed up for CVDs and death through linkage to the Swedish National Registers.

**Results:** Compared to normal-weight without MetS, overweight and obesity without MetS showed a larger impact on the risk of heart failure than on the risk of myocardial infarction and stroke. Normal-weight individuals with MetS had an increased risk of myocardial infarction and stroke. In obese subjects, the risk of incident CVD (composite endpoint) increased with an increasing number MetS components.

**Conclusion:** Heterogeneous effects of different combinations of BMI and MetS on the risk of specific CVDs were observed in the present study. Overweight or obesity, regardless of MetS status, as well as normal weight with MetS, should be considered risk factors for CVDs.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Characteristics associated with Non-initiation and Non-completion of Human Papillomavirus Vaccination Among Danish Girls: A Nationwide Register-based Cohort Study

**Senior Advisor Maria Holst Algren**<sup>1</sup>, Tatjana Gazibara<sup>1,2</sup>, Palle Valentiner-Branth<sup>3</sup>, Associate Professor Amalie Timmermann<sup>1</sup>, Lau Caspar Thygesen<sup>1</sup>, Janne Schurmann Tolstrup<sup>1</sup>

<sup>1</sup>National Institute of Public Health, University of Southern Denmark, <sup>2</sup>Institute of Epidemiology, Faculty of Medicine, University of Belgrade, <sup>3</sup>Department of Infectious Disease Epidemiology and Prevention, Statens Serum Institut

**Aims:** The aim was to identify maternal and paternal socioeconomic and demographic characteristics for non-initiation and non-completion of the human papillomavirus (HPV) vaccination among Danish girls including time-trends.

**Methods:** This nationwide register-based cohort study included all girls residing in Denmark who were offered free-of-charge HPV vaccination as a part of the childhood vaccination program between 2009 and 2018 (birth cohorts 1996-2005). The study samples included 296,461 daughter-mother dyads and 291,025 daughter-father dyads.

Data from the Danish Vaccination Register were linked with socioeconomic and demographic data from Statistics Denmark. HPV vaccination status was classified as “non-initiation” for girls who received no HPV vaccine and as “non-completion” for girls who initiated the HPV vaccination program but did not receive all the scheduled HPV vaccines. Data were analyzed using logistic regression models.

**Results:** Non-initiation of HPV vaccination was 13.7%, and non-completion was 24.2% among girls who initiated the HPV vaccination program. Girls of parents who were descendants of immigrants (adjusted odds ratio: 1.50; 95% CI: 1.35-1.68), at least 35 years old at time of birth, had basic or no education, had a low income, were not in the labor market, and unmarried had the highest non-initiation and non-completion odds. The associations between socioeconomic and demographic characteristics and HPV vaccination uptake were similar for mothers and fathers.

**Conclusions:** Despite free-of-charge availability to HPV vaccination in Denmark, we found disparities in non-initiation and non-completion of HPV vaccination among Danish girls by both mothers’ and fathers’ socioeconomic and demographic characteristics.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Association between social disconnectedness and subsequent medical conditions and the role of pre-existing mental disorders

**Lisbeth Moelgaard Laustsen**<sup>1</sup>, Mathias Lasgaard<sup>2</sup>, Oleguer Plana-Ripoll<sup>1,3</sup>

<sup>1</sup>*Department of Clinical Epidemiology, Aarhus University and Aarhus University Hospital*, <sup>2</sup>*DEFACTUM – Public Health Research, Central Denmark Region*, <sup>3</sup>*National Centre for Register-based Research, Aarhus University*

**Background and aim:** Socially disconnected individuals are at increased risk of developing various medical conditions. However, the current evidence base is limited by a narrow focus on specific diseases, and limited sample sizes have hindered the investigation of sex differences and the role of pre-existing mental disorders.

**Methods:** We conducted a cohort study using data from the Danish National Health Survey in 2013 and 2017, with follow-up until 2021. Survey data on social disconnectedness (loneliness, social isolation, low social support, and a composite measure) was linked with register data on medical conditions (11 broad categories). Poisson regression was applied to estimate incidence rate ratios (IRRs) and incidence rate differences (IRDs) and explore interaction with pre-existing mental disorders.

**Results:** Among 162,497 survey participants, 7.6%, 3.5%, and 14.9% were identified as lonely, socially isolated, and with low social support. The median IRR for a subsequent medical condition was 1.31 (interquartile range, 1.23–1.48) for lonely individuals, 1.16 (interquartile range, 1.01–1.32) for socially isolated individuals, and 1.11 (interquartile range, 1.10–1.13) for individuals with low social support. Applying the composite measure, the highest IRR was 2.60 for a subsequent mental disorder (95% CI, 2.33–2.87), and the lowest was 1.03 for cancer (95% CI, 0.96–1.11). These trends were consistent across sex and after accounting for potential interaction with pre-existing mental disorders.

**Conclusion:** Both men and women who are socially disconnected are at increased risk of a range of subsequent medical conditions. This knowledge may be relevant to target the disease burden among socially disconnected individuals.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Being a migrant women during disasters: A study of emergency department utilization during the COVID-19 pandemic

**Giulia Facci**<sup>1,2</sup>, Monica Trentin<sup>1,2</sup>, Martina Valente<sup>1,3</sup>, Anna Maria Brambilla<sup>4</sup>, Andrea Vicenzi<sup>4</sup>, Luca Ragazzoni<sup>1,3</sup>, Francesco Della Corte<sup>1,2</sup>, Francesco Barone-Adesi<sup>1,2</sup>

<sup>1</sup>CRIMEDIM - Center for Research and Training in Disaster Medicine, Humanitarian Aid and Global Health, Università del Piemonte Orientale, <sup>2</sup>Department of Translational Medicine, Università del Piemonte Orientale, <sup>3</sup>Department for Sustainable Development and Ecological Transition, Università del Piemonte Orientale, <sup>4</sup>Emergency Medicine Unit, Luigi Sacco Hospital, ASST FBF Sacco

Migrants were significantly affected by the COVID-19 pandemic. It is expected that migrant women (MW) were at higher risk of negative consequences, including poorer access to healthcare and worse health outcomes as compared to migrant men (MM) and non-migrant women (N-MW). Emergency department (ED) data can be an effective tool to unveil inequalities and elaborate considerations regarding sub-optimal primary care and preventive services. Admissions for Ambulatory Care Sensitive Conditions (ACSC) are often used to measure potentially preventable ED visits. This retrospective observational study aims to explore the impact of COVID-19 on MW ED utilization, as compared to N-MW as well as MM.

This study analyzes 2017-2023 data from the ED of the Sacco Hospital (Milan, Italy). Alongside demographic information, groups were compared considering number of ED accesses, triage codes and outcomes, reasons for access, length of stay, etc. The following phases of this study will involve performing a Chi2 test to compare proportions of ACSC among groups, and an Interrupted Time Series Analysis to explore the influence of the COVID-19 pandemic on ED utilization trends.

In our sample, migrant women accounted for almost 19,000 accesses. Preliminary results showed that MW were hospitalized at a lesser extent than MM and N-MW, suggesting either an improper use of the ED or a tendency to under-diagnose this population, possibly due to language barriers.

Results will allow local policymakers and health providers to anticipate MW's health needs in normal times and during health emergencies, as well as to strengthen health equity for MW.

**The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.**

## Alcohol consumption trajectories and risk of first primary malignant breast cancer among postmenopausal women: A Danish cohort study

**PhD Fellow Christian S. Antoniussen**<sup>1</sup>, Cécile Proust-Lima<sup>2</sup>, Daniel B. Ibsen<sup>1,3,4,5</sup>, Anja Olsen<sup>1,6</sup>, Kim Overvad<sup>1</sup>, Anne Tjønneland<sup>6</sup>, Pietro Ferrari\*<sup>7</sup>, Christina C. Dahm\*<sup>1</sup>

<sup>1</sup>Department of Public Health, Aarhus University, <sup>2</sup>University of Bordeaux, Inserm, Bordeaux Population Health Research Center, <sup>3</sup>Steno Diabetes Center Aarhus, Aarhus University Hospital, <sup>4</sup>MRC Epidemiology Unit, University of Cambridge School of Clinical Medicine, <sup>5</sup>Department of Nutrition, Exercise and Sports, University of Copenhagen, <sup>6</sup>Danish Cancer Institute, <sup>7</sup>Nutrition and Metabolism Branch, International Agency for Research on Cancer, World Health Organization

**Background:** Despite alcohol consumption being an established risk factor for breast cancer (BC), few studies have evaluated how alcohol consumption trajectories during adulthood influence the risk of BC. This study aimed to investigate whether trajectory profiles of alcohol consumption across adulthood were associated with risk of first primary malignant BC in postmenopausal women.

**Methods:** At baseline, 28,720 pre- and postmenopausal women aged between 50-65 years from the Danish Diet, Cancer and Health Cohort reported their average alcohol intake the past 12 months and their average alcohol intake at the ages of 20, 30, 40, and 50 years. Alcohol consumption trajectories were estimated using latent class mixed models. BC cases were identified through record linkage to the Danish Cancer Registry. To examine associations between alcohol consumption trajectories and BC, we fitted a proportional hazard model adjusted for potential confounding factors using data from 24,543 postmenopausal women without missing covariate information.

**Results:** We identified 4 distinct alcohol consumption trajectory mean profiles. During a median follow-up of 16.5 years, 1,591 cases of BC occurred. A consistently high (>10 g/day) alcohol intake across adulthood was associated with a higher risk of BC (HR: 1.65, 95%CI: 1.12-2.42) compared to an alcohol intake consistently lower than 5 g/day. No association with BC was found for the remaining trajectories when compared to a consistently low intake of alcohol.

**Conclusion:** Postmenopausal women drinking consistently high amounts of alcohol throughout adulthood had a higher risk of BC compared to women with a consistently low intake of alcohol.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Change in psychiatric health care and antidepressant use in refugees during the COVID-19 pandemic in Sweden – interrupted time series analysis

**Katalin Gemes**<sup>1</sup>, Vera Atarodi<sup>1</sup>, Jakob Bergström<sup>1</sup>, Ellenor Mittendorfer-Rutz<sup>1</sup>

<sup>1</sup>*Karolinska Institutet*

**Background:** The effect of the coronavirus pandemic on mental ill-health and mental healthcare use, especially among vulnerable, marginalized populations is still unknown. Therefore, we conducted a register-based interrupted time series analysis to investigate how specialized psychiatric healthcare use due to common mental disorders (CMD, i.e., depression, anxiety, and stress-related disorders) and antidepressant prescriptions changed during the COVID-19 pandemic in refugees and Swedish-born.

**Methods:** All refugees and Swedish-born aged 19-64, residing in Sweden between 2018 and 2021 and were in Sweden at least one year before cohort entry were included. Incidence rate (IR) of specialized psychiatric healthcare use due to CMD, and dispensation of antidepressants by yearly quartiles were extracted from nationwide registers. Interrupted time series analysis was used to compare outcome trends before and during the COVID-19 pandemic in refugees and Swedish-born and relative changes in IR were calculated with 95% confidence intervals (CI).

**Results:** A total of 488,299 refugees and 4,444,617 Swedish-born were included. Specialized psychiatric health care use in refugees increased by 2.5% (95% CI: 0.7%-4.4%), while there was no change in Swedish-born. In refugees whose labor market position was marginalized and who had low education, the quarterly change in IR was (6%, (95% CI: 3%, 6%) and 4% (95% CI: 1%, 7%), respectively). There was no substantial change in antidepressant use in any of the groups.

**Conclusions:** Refugees, especially those already in a marginalized position, had increased CMD-related mental healthcare use during the pandemic. Strategies to meet the mental health care needs of marginalized populations is important.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Genomic Epidemiology and Antimicrobial Resistance Profile of Shigella isolated from Diarrhoea diseases from under-five children in Blantyre, Malawi.

**Dr. Grace Thandekire Sibande**<sup>1</sup>, Kate Baker<sup>2,3</sup>, Jennifer Cornick<sup>1,2</sup>

<sup>1</sup>Malawi-Liverpool-Wellcome Trust Clinical Research Programme, <sup>2</sup>University of Liverpool, <sup>3</sup>University of Cambridge

**Background and Aim:** Shigella is the leading bacterial cause of moderate-to-severe diarrhoea in under-five children in resource-poor settings. However, antimicrobial resistance (AMR) is increasing in Shigella bacteria globally, complicating shigellosis management. While Whole Genome Sequence Analysis (WGSA) has been effectively used to broaden our understanding of shigellosis epidemiology, AMR, and transmission, it has been under-utilised in sub-Saharan Africa. In this study, multiple Shigella isolates from the 2022-2023 Malawi Shigella surveillance study were characterised using WGSA.

**Methods:** 44 phenotypically confirmed Shigella isolates using a well-validated microbiological workflow were subjected to DNA extraction and Whole Genome Sequencing on the Illumina Miseq. Data was stored and analysed on the Centre for Genomic Research University of Liverpool server. Isolates were serotyped in silico with ShigEifinder and genotypic AMR and Virulence profiles was done. 27/44 genotypically confirmed as Shigella were included in this study. A maximum-likelihood phylogenetic tree was generated from a core single nucleotide polymorphism alignment (40075 SNPs) using quality trimmed reads mapped against the complete *S. flexneri* 2a strain 301 genome.

**Results:** 10/27 were identified as *S. Sonnei* (8 form I, 2 form II), 9/27 as *S. Flexneri* ( 5 SfXv, 4 Sf6) and 8/27 as *S. Boydii* (6 serotype 11, 2 serotype). Each serotype was found to be epidemiologically distinct in terms of geographical distributions, AMR and virulence profiles.

**Conclusion:** The results provide important baseline information for public health interventions including antibiotic treatment and deployment of the appropriate Shigella vaccine, the development of which is a World Health Organisation priority, currently underway in Malawi.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Disentangling the relationship between cancer mortality and COVID-19

**Chelsea Hansen**<sup>1,2</sup>, Cecile Viboud<sup>1</sup>, Lone Simonsen<sup>2</sup>

<sup>1</sup>Fogarty International Center, National Institutes of Health, <sup>2</sup>PandemiX Center, Dept of Science & Environment, Roskilde University

**Background:** Deaths with a primary code of cancer did not rise during COVID-19 pandemic waves compared to baseline pre-pandemic levels. This is in apparent conflict with findings from cohort studies where cancer has been identified as a risk factor for COVID-19 mortality. Here we further elucidate the relationship between cancer mortality and COVID-19 on a population level in the US.

**Methods:** We computed excess mortality from weekly deaths during 2014-2020. We compared pandemic-related mortality patterns from underlying and multiple causes (MC) death data for six types of cancer and high-risk chronic conditions such as diabetes and Alzheimer's.

**Results:** Nationally in 2020, we found only modest excess MC cancer mortality (~12,000 deaths), representing a 2% elevation over baseline. Mortality elevation was measurably higher for less deadly cancers (breast, colorectal, and hematologic, 2-5%) than cancers with a poor 5-year survival (lung and pancreatic, 0-1%). In comparison, there was substantial elevation in MC deaths from diabetes (39%) and Alzheimer's (31%). Simulations based on a demographic model indicate that differences in life expectancy for these conditions, along with the age and size of the at-risk populations, largely explain the observed differences in excess mortality during the COVID-19 pandemic.

**Conclusion:** We found limited elevation in cancer mortality during COVID-19 waves, even after considering coding changes. Our demographic model predicted low excess mortality in populations living with certain types of cancer, even if cancer is a risk factor for COVID-19 fatality risk, due to competing mortality risk.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Association between living conditions and confirmed coronavirus infections during the first three waves of the COVID-19 pandemic: A Danish nationwide register-based cohort study.

**Research Assistant Mikkel Bukholt Nielsen**<sup>1</sup>, Thora Majlund Kjærulff<sup>1</sup>, Michelle Trabjerg Pedersen<sup>1</sup>, Kristine Bihrmann<sup>1</sup>, Janne Tolstrup<sup>1</sup>, Annette Kjær Ersbøll<sup>1</sup>

<sup>1</sup>*National Institute of Public Health, University of Southern Denmark*

**Background:** Different living conditions might have contributed to the unequal exposure to coronavirus during the pandemic leading to social inequality in COVID-19. The aim was to examine the association between living conditions and confirmed coronavirus infections.

**Methods:** Nationwide register data on the Danish population during the first three main waves (28.02.2020-15.05.2020, 01.09.2020-01.07.2021, and 01.09.2021-15.04.2022) of the pandemic were used for the analysis. Poisson regression model of incidence rates was used to estimate the association between confirmed coronavirus infection and living conditions (i.e., persons per household, m<sup>2</sup> per person, and type of residence) adjusted for age, sex, country of origin, vaccination status, and educational level.

**Results:** The study population comprised of 5,573,966, 5,537,046, and 5,463,630 individuals for the first, second, and third waves, respectively. Results showed that living with fewer m<sup>2</sup> per person and more persons per household was associated with an increased risk of confirmed coronavirus infections. Living in apartments was associated with an increased risk of confirmed coronavirus infections compared to living in single-family housing during the first and second waves, but not during the third wave with adjusted IRR of 1.60 (95% CI 1.53-1.67), 1.38 (95% CI 1.37-1.39) and 0.88 (95% CI 0.88-0.88), respectively.

**Conclusion:** More persons per household and living with fewer m<sup>2</sup> per person were associated with an increased risk of confirmed coronavirus infections during the first three waves of the pandemic. Living in apartments was associated with confirmed coronavirus infections only in the first two waves.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Antipsychotic Drug Exposure and Risk of Respiratory Infections: A Nationwide Cohort Study During the COVID-19 Pandemic

**Vardan Nersesjan**<sup>1,2</sup>, Rune Christensen<sup>1,2</sup>, Daniel Kondziella<sup>2,3</sup>, Michael E. Benros<sup>1,2</sup>

<sup>1</sup>*Copenhagen Research Center for Biological and Precision Psychiatry, Mental Health Centre Copenhagen, Copenhagen University Hospital*, <sup>2</sup>*Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen*, <sup>3</sup>*Departments of Neurology, Rigshospitalet, Copenhagen University Hospital*

**Background:** Pre-existing psychotic disorders have previously been associated with increased infection risk, now re-discovered during the COVID-19 pandemic. However, it is unclear if antipsychotic drug exposure imposes additional risk, which we aimed to investigate.

**Methods:** A nationwide register-based cohort study among all individuals  $\geq 18$  yrs of age with a psychotic disorder (ICD-10: F20-F29). A further subgroup was identified as incident-users comprising of individuals without antipsychotic prescriptions 5 years before observation start, March 1, 2020. Exposure to antipsychotics was calculated in a time-varying manner and compared to unexposed periods. Mild infection outcomes were positive SARS-CoV-2-PCR and anti-infective drug prescriptions. Severe infection outcomes were hospitalization or death due to COVID-19 or non-COVID respiratory infections. Outcomes were adjusted for sex, age, COVID-19-vaccination, prior hospital contacts and socio-economic-status.

**Results:** Of 85,083 individuals with pre-existing psychotic disorders, 30,984 were exposed to antipsychotics from 1/3-2020 to 31/12-2021. During antipsychotic exposure compared to non exposed periods, risk of acquiring a SARS-CoV-2 infection was lower (HRR, 0.91, 95% CI, 0.85-0.97) while risk of redeeming an anti-infective agent was not increased (HRR, 1.01, 95% CI, 0.97-1.06). Risk of COVID-19-related hospitalization was increased (HRR, 1.28, 95% CI, 1.07-1.52) but COVID-19-related death was not significantly different (HRR, 1.24, 95% CI, 0.82-1.86). Risk was increased for non-COVID respiratory infection-related hospitalization (HRR, 1.61, 95% CI, 1.44-1.79) and death (HRR, 1.61, 95% CI, 1.18-2.21). Results remained mostly unchanged in incident-users.

**Conclusion:** During antipsychotic drug exposure periods compared to unexposed periods, risk of severe infection outcomes increases. Therefore, we recommend infection countermeasures, in this at-risk population.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Different excess mortality in subtypes of Multiple Sclerosis

**Melinda Magyar**<sup>1</sup>, Nils Koch-Henriksen<sup>2</sup>

<sup>1</sup>Danish Multiple Sclerosis Registry, University Hospital Copenhagen, Rigshospitalet, <sup>2</sup>Department of Clinical Epidemiology, Aarhus University Hospital

**Background and objectives:** Patients with multiple sclerosis (MS) have higher mortality than the background population. We compared the extra mortality relative to the matched population mortality in primary progressive MS (PPMS), relapsing-remitting MS (RRMS), and its later phase, secondary-progressive MS (SPMS).

**Methods:** We included all patients from the nationwide and complete Danish MS Registry with onset 1994-2022. The matched background population mortality in one-year steps was obtained from Statistics Denmark. We analyzed extra mortality of the MS subtypes as the relative mortality ratio (RMR) using the multiplicative hazard model and the excess mortality ratio (EMR) using the additive hazard model, both with adjustment for sex and age at onset.

**Results:** We analyzed 1,334 cases with PPMS and 12,601 cases with RRMS. Of the patients 613 had died before follow-up at the end of 2022. Without adjustment, the RMR of PPMS/RRMS was 0.77 (95% CI 0.64-2.93), but the EMR was 2.36 (95% CI 1.81-2.65). After adjustment for sex and age at onset, both parameters came close to unity, indicating that the extra mortality was equal for PPMS and RRMS. From onset of progression both RMR and EMR were significantly higher in SPMS than in PPMS.

**Discussion:** The absolute mortality from onset is higher in PPMS than in RRMS, but in a life-time perspective, the absolute mortality is equal. Adjusted for sex and age at onset, the relative mortality and excess mortality are the same for the two phenotypes. From onset of progression, the relative and excess mortality is substantially higher in SPMS than in PPMS.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Dietary changes during first and second trimester in the Danish National Birth Cohort

**Erica Elizabeth Eberl**<sup>1,2</sup>, Ann-Marie Hellerung Christiansen<sup>2</sup>, Anne Ahrendt Bjerregaard<sup>2,3</sup>, Sjurdur Frodi Olsen<sup>2,4</sup>, Ruth Loos<sup>1,5,6</sup>

<sup>1</sup>*Novo Nordisk Foundation Center for Basic Metabolic Research, Faculty of Health and Medical Sciences, University of Copenhagen,* <sup>2</sup>*Department of Epidemiology Research, Statens Serum Institut,* <sup>3</sup>*Centre for Clinical Research and Prevention, Copenhagen University Hospital - Bispebjerg and Frederiksberg Hospital,* <sup>4</sup>*Department of Public Health, University of Copenhagen,* <sup>5</sup>*Department of Environmental Medicine and Public Health, Icahn School of Medicine at Mount Sinai,* <sup>6</sup>*The Charles Bronfman Institute for Personalized Medicine, Icahn School of Medicine at Mount Sinai*

Women often change their diet during pregnancy, yet these changes and their contributing factors have been understudied. The aim of this study was to examine responses that pregnant women had given on foods that they introduced and avoided during first and second trimester, and how their diet had changed since pre-pregnancy. Data was taken from the Danish National Birth Cohort (DNBC) whereby 71381 pregnant women answered questions regarding pregnancy-related dietary changes. Milk and fruit were among the top foods women added to their diet, while alcohol and caffeinated beverages were most commonly avoided. Exploring these eating behaviors and how they associate with different maternal characteristics enables a better understanding of food preferences during pregnancy and how they align with dietary recommendations.

**The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.**

## Breastfeeding patterns did not influence maternal risk of developing breast cancer in the Copenhagen Perinatal Cohort

**Sophie Hilario Christensen**<sup>1,2</sup>, Dan Hameiri-Bowen<sup>1</sup>, Dorte C. Pedersen<sup>1</sup>, Jennifer L. Baker<sup>1</sup>, Lise G. Bjerregaard<sup>1</sup>

<sup>1</sup>Center For Clinical Research And Prevention, Copenhagen University Hospital - Bispebjerg and Frederiksberg Hospital, <sup>2</sup>Department of Nutrition, Exercise and Sports, University of Copenhagen

**Background:** Women who have breastfed may have lower risks of breast cancer compared to women who have not breastfed, but evidence is still sparse especially due to a high risk of recall bias related to breastfeeding data. Therefore, we examined the association between breastfeeding patterns and maternal risk of breast cancer.

**Methods:** We included 6116 mothers from the Copenhagen Perinatal Cohort in Denmark who gave birth between 1959-61. Data on duration of exclusive and partial breastfeeding were obtained from interviews with the mothers at 1-year examinations. Breastfeeding trajectories were developed by latent class modelling using duration and intensity of breastfeeding. Breast cancer diagnoses were obtained from the Danish Cancer Registry (n=678) from 1968 to 2020. A Cox proportional hazard analysis was applied to estimate hazard ratios (HR) and 95% confidence intervals (CI) for the risk of developing breast cancer. Models were adjusted for pre-pregnancy body mass index (BMI), age at first birth, infant sex, socio-economic status (SES) and parity.

**Results:** Four breastfeeding trajectories were identified; no breastfeeding (38.5%), early weaning (26.4%), intermediate weaning (20.1%), and late weaning (14.9%). Compared to no breastfeeding, the risk of breast cancer was similar among women in the three other trajectory groups; HR (early) = 1.09 [CI: 0.90-1.33]; HR (intermediate) = 1.03 [0.84-1.27]; HR (late) = 1.00 [0.80-1.26].

**Conclusion:** Our findings do not support a protective effect of breastfeeding on maternal breast cancer risk. However, breastfeeding data were only available for one child, and ongoing work relates to using a woman's lifetime history of breastfeeding.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Defining the landscape of sleep problems in young adults using machine learning on nationwide register data from 2 million individuals.

**Dr. Adrian Gabriel Zucco**<sup>1</sup>, Henning Johannes Drews<sup>1</sup>, Jeroen F. Ulleman<sup>1</sup>, Naja Hulvej Rod<sup>1</sup>

<sup>1</sup>*Section of Epidemiology, Department of Public Health, University of Copenhagen*

**Background:** Sleep problems among young adults pose a major public health concern. To understand the patterns underlying the complexity of sleep in this population, we report trends in sleep problems and clusters of life-course factors using Machine Learning on nationwide surveys and registries.

**Methods:** We explored trends in the last decade using data from the Danish National Health Survey, MEDSTAT and the Danish National Patient Registry in self-reported sleep problems, medications such as melatonin and diagnoses for organic and non-organic sleep disorders. We used Natural Language Processing to learn life-course constellations based on registry data from the DANLIFE cohort of 2 million individuals. We then explored clusters of childhood adversity, diagnoses, medications and medical procedures centered around sleep-related medical terms to identify related factors.

**Results:** In the last decade, self-reported sleep problems and sleep medications have been increasing while diagnoses have remained steady. When looking at life-course constellations based on known sleep-related diagnoses, medications and medical procedures we found multiple clusters. Organic clusters involved factors related to respiratory issues, surgical interventions and fatigue from various causes while non-organic clusters were populated by mood and neurodevelopmental disorders. Interventions also differed among clusters where organic clusters had a higher prevalence of pharmacological and medical procedures while non-organic clusters reflected an enrichment in parental counselling and individual psychoeducation.

**Conclusion:** Sleep problems in young adults are increasing. By zooming out to identify clusters and life-course constellations of sleep problems, we provide a basis for zooming into the mechanisms and targeted interventions for young adults.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Adolescent loneliness affects weight trajectories through early adulthood: a prospective cohort study

**Phd Student Vivi Just-Nørregaard**<sup>1,2,3</sup>, Ruth Hackett<sup>4</sup>, Jens M Bruun<sup>5,6,3</sup>, Johan Hviid Andersen<sup>1,2,3</sup>, Trine Nøhr Winding<sup>1,2,3</sup>

<sup>1</sup>Department of Occupational Medicine, University Research Clinic, Goedstrup Hospital, <sup>2</sup>Danish Ramazzini Centre, <sup>3</sup>Department of Clinical Medicine, Faculty of Health, Aarhus University, <sup>4</sup>Health Psychology Section, Institute of Psychiatry, Psychology and Neuroscience, King's College, <sup>5</sup>Steno Diabetes Centre Aarhus, Aarhus University Hospital, <sup>6</sup>Danish National Centre for Obesity, Aarhus University Hospital

**Introduction:** Loneliness and obesity are increasing global concerns with potentially bidirectional links. Younger people report to feel lonelier than their middle-aged counterparts. It is well-known that individuals with obesity have higher risks of feeling lonely. However, a knowledge gap remains regarding the influence of loneliness on weight trajectories. The study aims to explore the impact of loneliness in adolescent peer and family relationships on weight trajectories into early adulthood.

**Method:** A Danish cohort of individuals born in 1989 participated in a prospective study (n=3,054), reporting loneliness at age 15. Information on body mass index was collected at ages 18, 21, and 28. Loneliness was assessed in peer and family relationships. Loneliness was divided into least, medium, and most lonely. Associations were examined using mixed-level linear regressions stratified by gender.

**Results:** Those who reported high loneliness in peer relationships at age 15 experienced statistically significant increases in weight from age 18-28, with a gain of 0.85 kg/m<sup>2</sup> for females and 0.79 kg/m<sup>2</sup> for males, compared to the least lonely. Loneliness in family relationships shows a borderline significant BMI increase (0.54[CI: -0.02; 1.11] kg/m<sup>2</sup>) in the loneliest females.

**Conclusion:** This study unveils novel insights into how adolescent loneliness may impact weight gain in early adulthood with special attention to peer and family relationships. Notably, peer loneliness at age 15 has stronger associations with adverse weight trajectories than family loneliness. Our results underline the need for focused interventions already in adolescence in battling loneliness and obesity.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Incident Metabolic Dysfunction-Associated Steatotic Liver Disease is inversely associated with risk of dementia: a registry based cohort study

**Andreas Bartholdy**<sup>1</sup>, Kristine Frøsig Moseholm<sup>1</sup>, Pernille Yde Nielsen<sup>1</sup>, Nicolai Jacob Wewer Albrechtsen<sup>2</sup>, Lise Lotte Gluud<sup>3</sup>, Majken Karoline Jensen<sup>1</sup>

<sup>1</sup>Department of Public Health, University of Copenhagen, <sup>2</sup>Novo Nordisk Foundation Center for Protein Research, Faculty of Health and Medical Sciences, University of Copenhagen, <sup>3</sup>Gastro Unit, Copenhagen University Hospital Hvidovre

**Background:** An association between Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) and cognitive decline has been proposed through the so called “liver-brain” axis.

**Methods:** We conducted a population-wide registry based study including all incident MASLD cases, defined as first registered hospital discharge ICD-10 code for MASLD or non-specified liver disease and no other ICD registered etiology of chronic liver disease (ICD-8, and ICD-10) between the year 1998 and 2019 in the Danish National Patient Registry. Incident dementia was defined as the first registered hospital discharge code (ICD-8 or ICD-10) for dementia or first registered purchase of dementia medication (ATC code) in the Danish National Prescription Registry. A reference group of five liver-healthy persons per MASLD individual was matched on birth year, sex and index date. We used cox proportional hazards model to estimate hazard ratios (HR) for the association between MASLD and dementia. Adjusted models were adjusted for hypertension, type 2 diabetes, income and educational level at baseline.

**Results:** A total of 17,135 persons with MASLD were matched to 85,675 free of MASLD. The crude hazard ratio showed a higher risk for dementia among patients with MASLD (HR=1.15, 95% Confidence Interval [CI]: 1.03 - 1.29) but this association was reversed when adjusting for confounders (HR=0.867, 95% CI: 0.77 - 0.97)

**Conclusions:** MASLD was not associated with an increased risk of dementia, but instead had a protective effect when accounting for confounding metabolic comorbidities and socioeconomic factors. This could be explained by MASLD being an indicator of absent preclinical dementia.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Impact of RSV on hospital capacity: Age-specific time series estimates of RSV hospitalizations

**PhD student Caroline Klint Johannesen**<sup>1</sup>, Amanda Marie Egeskov-Cavling<sup>1</sup>, Thea K. Fischer<sup>1,2</sup>

<sup>1</sup>Nordsjællands Hospital, <sup>2</sup>Department of Public Health, University of Copenhagen

**Background:** Our understanding of age-specific hospitalizations related to respiratory syncytial virus (RSV) infection is restricted due to limited testing, particularly in older children and adults where severe RSV infections are not anticipated. Estimations based solely on RSV coding in hospital admissions are acknowledged to underestimate the actual burden of RSV. Our objective was to offer accurate age-specific burden estimates for RSV-associated hospital admissions with respiratory tract infections (RTI), utilizing data from national health registers and confirmed laboratory cases of RSV-related respiratory infections.

**Method:** We performed a multiseason regression analysis, examining weekly hospitalizations for respiratory infection with RSV and influenza laboratory-confirmed cases as covariates. The data, spanning from 2017 to 2023, were sourced from national health-care registers. To estimate the burden of RSV-associated hospitalizations within all respiratory tract infections, age-specific calculations were conducted using time series analysis. We employed a linear regression model with penalized splines.

**Results:** We identified 277,065 admissions to hospital with RTI. The overall fraction of hospital admissions with RTI attributional to RSV was 10.2%, corresponding to app. 28,240 admissions to hospital. The highest proportions were in young children (29.7% age 0-2 months, 20.9% age 3-5 months). In the age group 75-84 our model found no correlation between RSV and hospital admissions with RTI.

**Conclusion:** Our findings highlight the substantial proportion of RSV infections among hospital admissions across different ages. These can assist policymakers in formulating effective prevention- and control-strategies. Additionally, they offer valuable insights for healthcare professionals attending to both children and adults with viral respiratory infections.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Effects of maternal BCG scars on neonatal sepsis in Guinea-Bissau: a vital tool to reduce the male-female mortality gap?

**Assistant Professor Frederik Scholtz-buchholzer**<sup>1,2</sup>, Peter Aaby<sup>1</sup>, Christine Stabell Benn<sup>1,2,3</sup>

<sup>1</sup>Bandim Health Project, INDEPTH Network, <sup>2</sup>Bandim Health Project, OPEN, Department of Clinical Research, Uni. Southern Denmark and Odense University Hospital, <sup>3</sup>Danish Institute of Advanced Study, Uni. Southern Denmark

**Background:** Males have higher mortality than females during infancy. Randomized trials have demonstrated that Bacillus Calmette-Guérin (BCG) vaccine have beneficial non-specific effects that lowers the all-cause mortality risk, especially for male newborns. Novel data indicates that the maternal vaccination status might affect offspring health. In a series of cohort studies, we therefore investigated the association between maternal BCG vaccine scar status and offspring health outcomes.

**Methods:** At the Maternity Ward of the main hospital in Guinea-Bissau's capital Bissau, we have conducted a series of randomized trials investigating the overall health effects of different BCG strains and vaccination schedules. Since 2016, the maternal BCG scar status has been captured routinely at trial enrollment, with follow-up for health outcomes subsequently gathered by telephone and home visits. We assessed pediatric admission risk and all-cause mortality risk by maternal BCG scar status in Cox Proportional Hazards models and case-fatality risk during hospital admission by binomial regression, adjusting all estimates for years of maternal schooling.

**Results:** Across four large cohorts totalling 29,785 neonate-mother pairs, 63% (18,635/29,785) of mothers presented a BCG scar, which was associated with decreased overall mortality risk for male newborns and no effect for female newborns. Maternal BCG scars did not affect the risk of hospital admission, but markedly reduced the risk of fatal sepsis during admission, an effect that was separately significant for male newborns.

**Conclusions:** Increasing the prevalence of maternal BCG vaccine scars may be a tool to prevent fatal infections during early-life in males, reducing the male-female mortality gap.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## A nationwide register-based study of healthcare usage and psychiatric comorbidity in borderline personality disorder in Denmark

**Alisha Silvia Mercedes Hall**<sup>1,2</sup>, Esben Agerbo<sup>3</sup>, Søren Dinesen Østergaard<sup>1,2</sup>, Oleguer Plana-Ripoll<sup>1,4</sup>, Jean-Christophe Philippe Debost<sup>1,2</sup>, Katherine Louise Musliner<sup>1,2</sup>

<sup>1</sup>*Department of Clinical Medicine, Aarhus University*, <sup>2</sup>*Department of Affective Disorders, Aarhus University Hospital - Psychiatry*, <sup>3</sup>*National Centre for Register-Based Research, Aarhus University*, <sup>4</sup>*Department of Clinical Epidemiology, Aarhus University and Aarhus University Hospital*

Borderline Personality Disorder (BPD) is a psychiatric illness characterized by persistent instability in emotions, identity/self-image, and interpersonal relationships that usually manifest in adolescence/early adulthood. High rates of self-harm, suicide, and somatic and psychiatric comorbidity are typical. In addition, BPD is associated with intensive treatment utilization: direct somatic and psychiatric healthcare costs and lost productivity exceed those associated with depressive or anxiety disorders. To identify areas of improvement for the timely diagnosis and effective treatment of BPD, we will investigate the healthcare utilization of individuals diagnosed with BPD in Denmark as well as patterns of psychiatric comorbidity.

We will ascertain incident cases of BPD (ICD-10: F60.3x “emotionally unstable personality disorder”) in Denmark between 1998–2015 using discharge diagnoses from inpatient, outpatient, and emergency contacts with public psychiatric hospitals recorded in the Danish Psychiatric Central Research Register (PCRR). We will calculate the yearly average number contacts with both somatic (National Patient Register) and psychiatric (PCRR) hospitals for incident BPD cases in the 3 years prior to and after the initial diagnosis and compare them with those of: 1) incident cases of any other specific personality disorder, 2) a depressive disorder, and 3) any psychiatric disorder. We will also stratify by treatment setting and sex. In addition, we will describe the patterns of psychiatric comorbidity before and after BPD diagnosis.

This study will help characterize the patterns of healthcare utilization and psychiatric comorbidities of individuals with BPD using the Danish national registers that have only been broadly explored in previous studies.

**The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.**

## Association between comorbidity clusters and referral to cardiac rehabilitation and mortality in patients with heart failure: A Danish national register-based analysis

**Lau Caspar Thygesen**<sup>1</sup>, Kirstine Lærum Sibilitz<sup>2</sup>, Line Zinckernagel<sup>1</sup>, Teresa Holmberg<sup>1</sup>, Janne Tolstrup<sup>1</sup>, Lars Hermann Tang<sup>3</sup>, Søren Skou<sup>3</sup>, Bhautesh Jani<sup>4</sup>, Rod Taylor<sup>5</sup>

<sup>1</sup>National Institute of Public Health, University of Southern Denmark, <sup>2</sup>Department of Cardiology, Amager Hvidovre Hospital, <sup>3</sup>The Research and Implementation Unit PROgrez, Department of Physiotherapy and Occupational Therapy, Næstved-Slagelse-Ringsted Hospitals, <sup>4</sup>School of Health and Wellbeing, University of Glasgow, <sup>5</sup>MRC/CSO Social and Public Health Sciences Unit & Robertson Centre for Biostatistics, School of Health and Well Being, University of Glasgow

**Background:** Comorbidities are highly prevalent among HF patients. Whilst cardiac rehabilitation (CR) improves patient outcomes referral remains poor and the association with comorbidity unclear. The aims of this study were to characterise comorbidity clusters of HF patients and to examine their associations with CR referral and mortality following CR.

**Methods:** This national register-based cohort study included all adult HF patients admitted to a Danish hospital 2010-2018. Information on comorbidities, CR referral and demographic covariates were obtained through registry and clinical database linkage. Latent class analysis (LCA) was used to identify comorbidity clusters and their association with CR referral and mortality following CR assessed using adjusted logistic and Cox regression.

**Results:** The study population included 35,052 patients with incident HF diagnosis. We included 76 comorbidities with prevalence above 2%. LCA analysis identified five comorbidity clusters: metabolic, cerebrovascular, ischemic, high-burden, and low-burden. Compared to the low-burden cluster there was evidence of reduced or similar risk of CR referral in the metabolic (adjusted odds ratio (aOR): 0.89, 95% CI: 0.79 to 1.00), high-burden (1.08, 0.98 to 1.18), and cerebrovascular (0.97, 0.86 to 1.09) clusters. In contrast there was increased risk of mortality following CR in metabolic, high-burden, and cerebrovascular clusters. There was increased OR of CR referral in the ischemic cluster.

**Conclusion:** This study showed that HF patients with clusters of comorbidity experience both a reduced likelihood of CR referral and an increased risk of all-cause mortality. Our findings underscore the importance of understanding patterns of comorbidity in the management of HF patients.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Automated surveillance system for invasive *Streptococcus pneumoniae* infections

**Rikke Thoft Nielsen**<sup>1</sup>, Hans-Christian Slotved<sup>1</sup>, Tine Dalby<sup>1</sup>, Lars Hervig Jacobsen<sup>1</sup>, Signe Fischer Ravn<sup>1</sup>, Lotte Flink Sørensen<sup>1</sup>, Marianne Voldstedlund<sup>1</sup>

<sup>1</sup>*Statens Serum Institut*

**Background:** Denmark is transforming the surveillance of infectious diseases towards an automated and real-time surveillance, based on machine-to-machine reporting using data from the Danish microbiology database (MiBa). This is supported by a new legal executive order. The surveillance system is based on data-algorithms adapted to case definitions generated by relevant specialists in microbiology and epidemiology. Additionally, this data can be linked to different registries e.g. with demographic data and hospital information. The aim is to describe the surveillance system using invasive *Streptococcus pneumoniae* infections (IPD) as an example.

**Method:** An IPD episode is defined when *S. pneumoniae* has been found, by culture or nucleic acid amplification tests, in one or more invasive samples over a 30-day rolling window. A standard algorithm defines invasive samples by using information on sample type. Episodes are grouped in a hierarchy in the following order; Infections in the central nervous system, blood, and “other invasive infections”. This standard algorithm for invasive infections is applicable across species.

**Results:** We will explain the algorithms used and show surveillance data on IPD for the period 2013 to 2023. The data will amongst others be validated by comparing data on *S. pneumoniae* isolates to the data in the reference laboratory as submission of *S. pneumoniae* isolates causing IPD is mandatory.

**Conclusions:** The automated surveillance of IPD is complete on a national level and ensures real-time and correct data, which furthermore is possible to process and analyze automatically, including coupling to data from other sources, data sharing and visualization.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Discrimination and mental illness among Syrian refugees in Lebanon

**Francisca Manuela Faria Gaifém**<sup>1</sup>, Christian Wejse<sup>1,2</sup>, Andreas Halgreen Eiset<sup>1,3,4</sup>

<sup>1</sup>Center of Global Health (GloHAU), Department of Public Health, Aarhus University, <sup>2</sup>Department of Infectious Diseases, Aarhus University Hospital, <sup>3</sup>Clinic for PTSD and Anxiety, Aarhus University Hospital, <sup>4</sup>Department of Clinical Pharmacology, Aarhus University Hospital

Research has reported higher prevalence of mental illnesses, among forcibly displaced persons when compared to other populations. However, while prevalence estimates vary considerably, few studies explore how social determinants present in hosting environments might relate to mental illness. Particularly, experiences of discrimination in post-migration environments may be among the factors negatively impacting the mental health of forced migrants.

This study investigates the association between experiences of discrimination and symptoms of depression and anxiety among Syrian refugees in Lebanon.

Data has been previously collected as part of the ARCH Project. Participants were Syrian adults who fled Syria after 2011, had been living in Lebanon for up to 12 months and were residing in a settlement. Self-reported experiences of discrimination were measured using the Everyday Discrimination Scale. Symptoms of depression and anxiety were assessed using the HSCL-25.

Results from the final analysis are pending and will be presented at the conference. A total of 599 refugees were included in the study – 73% were female and the mean age was 35 years old. Previous work from the ARCH Project suggests that data are missing at random. During data analysis, multiple imputation is used to account for missing data. Propensity score-weighting is used to adjust for confounding.

In a time where forcibly displacement keeps rising, this research has the potential to identify risk factors for refugee's mental health present in their hosting environment: a fundamental step to ensure that forced migrants are hosted in environments that do not harm their mental health state.

**The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.**

## Emergency Medical Services dispatcher recognition of stroke – a systematic review

**MD & Ph.d.-Fellow Jonathan Wenstrup**<sup>1,2,3,4</sup>, Bartal Hofgaard Hestoy<sup>2</sup>, Malini Vendela Sagar<sup>2,3</sup>, Nikolaj Fasmer Blomberg<sup>1</sup>, Hanne Christensen<sup>5,6</sup>, Helle Collatz Christensen<sup>1,5</sup>, Christina Kruuse<sup>2,3,5</sup>  
<sup>1</sup>Prehospital Center, Region Zealand, <sup>2</sup>Department of Neurology, University Hospital Copenhagen - Herlev and Gentofte, <sup>3</sup>Department of Brain and Spinal Cord Injury, Rigshospitalet Glostrup, <sup>4</sup>Akutberedskabet, Region Hovedstaden, <sup>5</sup>Department of Clinical Medicine, University of Copenhagen, <sup>6</sup>Department of Neurology, Copenhagen University Hospital - Bispebjerg and Frederiksberg

**Background and aim:** Stroke treatments are time-sensitive, and thus early and correct recognition of stroke by Emergency Medical Services is essential for outcomes. This is particularly important with the adaption of mobile stroke units. In this systematic review, we therefore aimed to provide a comprehensive overview of Emergency Medical Services dispatcher recognition of stroke.

**Methods:** The review was registered on PROSPERO and the PRISMA guidelines were applied. We searched PubMed, Embase, and Cochrane Review Library. Screening and data extraction were performed by two observers. Risk of bias was assessed using the QUADAS-2 instrument.

**Results:** Of 1200 papers screened, 24 fulfilled the inclusion criteria. Data on sensitivity was reported in 22 papers and varied from 17.9% to 83.0%. Positive predictive values were reported in 12 papers and ranged from 24.0% to 87.7%. Seven papers reported specificity, which ranged from 20.0% to 99.1%. Six papers reported negative predictive value, ranging from 28.0% to 99.4%. In general, the risk of bias was low.

**Conclusion:** Stroke recognition by dispatchers varied greatly, but overall many patients with stroke are not recognized, despite the initiatives taken to improve stroke literacy. The available data are of high quality, however Asian, African, and South American populations are underrepresented. While the data are heterogenous, this review can serve as a reference for future research in emergency medical dispatcher stroke recognition and initiatives to improve prehospital stroke recognition.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Cardiorespiratory fitness and physical performance in Multiple Chemical Sensitivity (MCS)

### - The Danish study of Functional Disorders (DanFunD)

**Anne Ahrendt Bjerregaard**<sup>1</sup>, Marie W. Petersen<sup>2</sup>, Lise K. Gormsen<sup>2</sup>, Sine Skovbjerg<sup>3</sup>, Jose G. Cedeño-Laurent<sup>4</sup>, Torben Jørgensen<sup>1</sup>, Allan Linneberg<sup>1</sup>, Thomas M. Dantoft<sup>1</sup>

<sup>1</sup>Center for Clinical Research and Prevention, Bispebjerg and Frederiksberg Hospital, <sup>2</sup>Research Clinic for Functional Disorders and Psychosomatics, Aarhus University Hospital, <sup>3</sup>Department of Clinical Medicine, The Danish Center for Mindfulness, Aarhus University, <sup>4</sup>Environmental and Occupational Health Science Institute, Rutgers University

**Objective:** MCS is a multisystem, poly-symptomatic disorder affecting 0.5-6.5% of the population. MCS individuals have physical reactions to various odors which can involve several organ systems e.g., the respiratory or cardio-vascular system. Symptoms often overlap with those of other functional somatic disorders (FSD), thus an overlap between MCS and other FSD exists.

From DanFunD, we investigated body composition, cardiorespiratory fitness, and physical performance in persons with MCS compared with persons without any FSD.

**Methods:** From 9,656 participants (18-76 years), 1.95% fulfilled criteria for MCS (n=188), and of those, 109 persons did not have other FSD (MCS÷FSD, 1.13%). N=7,791 participants had no FSD (controls). With adjusted multiple linear regression, associations between MCS and waist circumference (WC), % body fat, BMI, lung function, blood pressure (BP), hand grip strength, and physical activity assessed at a step test was evaluated. Adjusted logistic regression was applied to test odds of overweight (BMI≥25kg/m<sup>2</sup>).

**Results:** Compared with controls, MCS had significantly higher WC, % body fat, and BMI; and significantly increased odds of overweight. We found decreased lung function, systolic BP, performance in the hand grip strength and step test among MCS individuals compared with controls. Differences were not observed for the MCS÷FSD except for significantly decreased systolic BP and step test.

**Conclusion:** In this cross-sectional study, MCS had less optimal body composition and decreased cardiorespiratory fitness and physical performance mainly driven by the coexistence of other FSD. Up to ¼ of participants were unable to complete the step test, which may have attenuated observed associations.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Exploration of Crucial Lifestyle Variables: A Blueprint for Public Health Enhancement

**Nisha Singh**<sup>1</sup>, Katarina Bälter<sup>1</sup>, Annika Tillander<sup>2</sup>, Feben Javan Abraham<sup>1</sup>

<sup>1</sup>*Department of Public Health, Mälardalen University,* <sup>2</sup>*Department of Computer and Information Science, Linköping University*

**Background:** The risk factors contributing to mortality in middle- and high-income countries demand targeted interventions. Public health professionals, in collaboration with societal and global entities, play a pivotal role in promoting healthier behaviors.

**Method:** The data from LifeGene; a population-based cohort study in Sweden (n=5,364) were used. The lifestyle variables associated with physical activity, food habits, smoking, alcohol, and sleep from LifeGene were studied in association with the metabolic syndrome, defined by specific risk variables, through correlation and logistic regression analyses to identify the most significant lifestyle variables.

**Results:** The study has identified 14 lifestyle variables in the preliminary analysis. The identified lifestyle variables most strongly associated with metabolic syndrome underscore their critical role in influencing health outcomes.

**Conclusions:** This study proposes a practical set of health-promoting lifestyle variables, emphasizing physical activity, diet, alcohol consumption, sleep, and smoking. These variables are recommended for application in public health contexts, facilitating surveys and implementation and evaluation of population-based interventions. Additionally, these identified lifestyle variables offer the foundation for a comprehensive lifestyle index, promoting sustainable and healthy life choices.

**The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.**

## Differences in acute myocardial infarction incidence rates among immigrant groups in Norway - updated analyses using data from the NCDNOR-project

**Mrs. Kjersti Stormark Rabanal**<sup>1</sup>, Randi Marie Selmer<sup>2</sup>, Ingvild Dalen<sup>1</sup>, Jannicke Igland<sup>3,4</sup>, Inger Kristine Holtermann Ariansen<sup>2</sup>, Haakon Eduard Meyer<sup>5,6</sup>

<sup>1</sup>Research Department, Stavanger University Hospital, <sup>2</sup>Department of Chronic Diseases, Norwegian Institute of Public Health, <sup>3</sup>Department of Global Public Health and Primary Care, University of Bergen, <sup>4</sup>Department of Health and Caring Sciences, Western Norway University of Applied Sciences, <sup>5</sup>Department of Physical Health and Ageing, Norwegian Institute of Public Health, <sup>6</sup>Department of Community Medicine and Global Health, University of Oslo

**Background and aim:** Using data from 1994-2009 we previously found that immigrants from South Asia and Former Yugoslavia had higher risk of acute myocardial infarction (AMI) than Norwegian-born. East Asians and Sub-Saharan Africans had lower risk. The incidence rate of AMI is decreasing in the Norwegian population, but it is unknown whether immigrant groups experience similar trends. We aimed to reexamine differences in incidence rates of AMI between immigrant groups and the Norwegian-born population for the period 2010-2019.

**Methods:** All incident AMIs were identified in Norwegian residents aged 35-79 years in 1996-2019 using hospital and cause of death registry data in the NCDNOR project. A three-year wash-out period was used to identify incident events. Poisson regression was used to calculate incidence rate ratios (IRR) with Norwegian-born as reference group adjusted for age and calendar year. IRRs for 2010-2019 were compared with previously published analyses covering 1994-2009. Annual age-standardized incidence rates were calculated to additionally look at trends.

**Results:** Immigrants from South Asia still had twice the incidence of AMI compared to Norwegian-born men and women. Immigrants from Former Yugoslavia also had increased risk of AMI (IRR 1.43, 95% CI 1.28-1.60 in men and IRR 1.32, 95% CI 1.14-1.54 in women), while East Asians and Sub-Saharan Africans had lower risk. Trend-analyses supported our findings of continuing excess risk in South Asian and Former Yugoslavian immigrants.

**Conclusion:** The magnitude and direction of the differences in risk of AMI between immigrant groups and Norwegian-born remained in updated analyses.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Bipolar disorder and severe poisoning due to medicines or illicit substances: A register-based cohort study

Mikko Sillanpää<sup>2</sup>, Olli Kärkkäinen<sup>2</sup>, Heidi Taipale<sup>1,2,3</sup>, Jari Tiihonen<sup>1,2,3</sup>, **Researcher Aleksi Hamina**<sup>1</sup>  
<sup>1</sup>*Niuvanniemi Hospital*, <sup>2</sup>*University of Eastern Finland*, <sup>3</sup>*Karolinska Institutet*

**Introduction:** Poisoning is suspected to cause excess mortality among individuals with bipolar disorder (BPD), but detailed studies on the subject are rare. We aimed to investigate hospitalizations and deaths by poisonings due to pharmaceuticals and illicit drugs among individuals with bipolar disorder (BPD).

**Methods:** Utilizing national health registries, we included data on all individuals aged 15-65 diagnosed with BPD (ICD-10: F30–F31) between the years 1987 and 2018 in Finland to this study. For these individuals, we extracted data on hospitalizations and fatalities due to poisoning from the nationwide hospital discharge and cause of death register. These data were linked to other national registries with data on comorbidities and socioeconomic variables.

**Results:** The study cohort included 60,045 individuals (56.4% female; mean age 41.7 years, SD=15.8) with BPD. During a mean follow-up of 9.3 years, 13.8% (n=8272) of the cohort experienced poisoning at least once. There were 0.84 fatal and 14.0 non-fatal poisonings per 1000 person-years. Most hospitalizations (59.7%) and deaths (56.4%) were deemed intentional. Previous poisonings (adjusted odds ratio 3.60, 3.39-3.83), younger age (15-24 vs. ≥55 years: 2.92, 2.65-3.22), substance use disorders (2.47, 2.33-2.62), and borderline personality disorder (1.29, 1.21-1.38) had the strongest association with any poisoning.

**Conclusion:** Especially intentional poisonings by medicines or illicit substances are frequent among individuals with BPD. Clinical treatment, including suicide prevention plans, should therefore be adjusted considering the patient's risk for poisoning.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Item Response Analysis of a Patient-reported Outcome Measure for Self-perceived Health among Psychiatric Patients in Denmark

**Jan Brink Valentin**<sup>1</sup>, Jan Mainz<sup>1,2,3,4</sup>, Søren Paaske Johnsen<sup>1</sup>, Klaudia Kristensen<sup>2</sup>, Solvejg Kristensen<sup>2</sup>

<sup>1</sup>Danish Center for Health Services Research, Department of Clinical Medicine, Aalborg University,

<sup>2</sup>Psychiatry, Aalborg University Hospital, <sup>3</sup>Department for Community Mental Health, University of Haifa, <sup>4</sup>Department of Health Economics, University of Southern Denmark

**Background:** Patient reported outcomes (PRO) form the basis for patient-perceived quality of care and may guide psychiatric treatment towards a patient centered health care. A PRO instrument measuring self-perceived mental and physical health has been developed for the national psychiatric clinical databases in Denmark. We aimed to validate this instrument in terms of internal consistency and criterion validity. The study concludes the development, subjective validation, and nationwide implementation of the PRO-psychiatry instrument.

**Methods:** The instrument consisted of 17 items; well-being (7 items), lack of well-being (5 items) and social functioning (5 items). For internal consistency we calculated McDonald's omega and average inter-item correlation (AIIC), while for criterion validity we applied differential item functioning (DIF) using the graded response model. For the DIF we compared males and females, educational levels, disease severities, baseline and follow-up, etc.

**Results:** We included 2,476 responses from 1,132 unique patients. McDonald's omega was found to be 0.92 (95% CI: 0.92;0.93), while the AIIC was 0.42 (95% CI: 0.39;0.44). The largest systematic variation was found when comparing baseline with follow-up and resulted in a maximum difference of 2.3 points on the total score when adjusting for the latent trait. Item 1 (I have felt cheerful and in good spirits) displayed the most systematic variation and was subject of scrutiny for most comparisons.

**Conclusion:** The scale showed high consistency and little systematic variation between the comparison groups. Thus, the instrument exhibited sufficient psychometric properties.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Does health anxiety and vaccine concern predict self-reported adverse events following COVID-19 vaccination? – A Danish national cohort study.

**Kristoffer Torp Hansen**<sup>1</sup>, Fiona Kusk Povlsen<sup>1,2</sup>, Bodil Hammer Bech<sup>1</sup>, Stefan Nygaard Hansen<sup>1</sup>, Charlotte Ulrikka Rask<sup>3,4</sup>, Per Fink<sup>3,5</sup>, Henrik Nielsen<sup>6,7</sup>, Thomas Meinertz Dantoft<sup>8</sup>, Sanne Marie Thysen<sup>8,9</sup>, Dorte Rytter<sup>1</sup>

<sup>1</sup>Department of Public Health, Aarhus University, <sup>2</sup>Department of Quality and Patient Involvement, Aarhus University Hospital, <sup>3</sup>Department of Clinical Medicine, Aarhus University, <sup>4</sup>Department of Child and Adolescent Psychiatry, Aarhus University Hospital Psychiatry, <sup>5</sup>Research Clinic for Functional Disorders and Psychosomatics, Aarhus University Hospital, <sup>6</sup>Department of Infectious Diseases, Aalborg University Hospital, <sup>7</sup>Department of Clinical Medicine, Aalborg University, <sup>8</sup>Center for Clinical Research and Prevention, Copenhagen University Hospital – Bispebjerg and Frederiksberg, <sup>9</sup>Department of Clinical Pharmacology, Copenhagen University Hospital – Bispebjerg and Frederiksberg

**Background:** Studies have found COVID-19 vaccines to be associated with the nocebo effect. However, the literature in this field is sparse and existing studies measuring expectations of adverse events (AE) have small sample sizes.

**Method:** This study used data from the Danish national cohort “BiCoVac”, which contains self-reported information on both health anxiety and specific COVID-19 vaccine concern, as well as 19 systemic AEs following COVID-19 vaccination. Simple and multiple logistic regression was used to estimate the association between health anxiety and specific COVID-19 vaccine concern with having one or more systemic AEs following COVID-19 vaccination. Inverse probability weights were used to compensate for the initial dropout and loss to follow-up.

**Results:** Of the 85,080 participants in the study, 30% reported specific COVID-19 vaccine concern, 4% reported health anxiety, and 26% one or more systemic AEs following vaccination. After adjusting for covariates, participants reporting specific COVID-19 vaccine concern had higher odds of reporting one or more systemic AEs following vaccination compared with those not concerned (OR, 1.51 CI 95% [1.45;1.58]). For health anxiety, the OR was 1.21 CI 95% [1.10;1.33].

**Conclusion:** Participants with specific COVID-19 vaccine concern had higher odds of reporting one or more systemic AEs following vaccination compared with those who had no specific COVID-19 vaccine concern. Reporting of AEs was also associated with health anxiety, but to a lesser degree.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Does occupational forward bending of the back increase low back pain among childcare workers? A Compositional Data Analysis of accelerometer data.

**Phd Student Anders Dreyer Frost**<sup>1,2</sup>, Stavros Kyriakidis<sup>1,2</sup>, Andreas Holtermann<sup>1,2</sup>, Nidhi Gupta<sup>1</sup>, Charlotte Diana Nørregaard Rasmussen<sup>1</sup>

<sup>1</sup>*Department of Musculoskeletal Disorders and Physical Workload, National Research Centre for the Working Environment, Copenhagen, Denmark,* <sup>2</sup>*Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark*

**Background:** Low back pain is the dominant cause of years lived with disability worldwide. Many work tasks of childcare workers requires forward bending of the back. However, to date dose-response association between device-measured forward bending of the back and low back pain is not known among childcare workers. Therefore, we investigated if device-measured time spent on occupational forward bending increases the risk on number of days with low back pain among childcare workers.

**Methods:** We included 222 childcare workers from 16 Danish childcare institutions in this prospective study. Forward bending during upright position was measured for four working days using thigh- and trunk-worn accelerometry. Days with low back pain was reported every 4 weeks (0-28 days) over 10 months. We regressed occupational forward bending against low back pain, adjusted for confounders using Generalized Linear Mixed Model. We used the regression coefficients to predict risks of low back pain days due to increasing/decreasing time spent on forward bending.

**Results:** Results shows that during a mean worktime of 7.4 hours, the workers spent on average 36 and 15 min on forward bending  $>30^\circ$  and  $>60^\circ$  in an upright position, respectively. Five more minutes of forward bending  $>30^\circ$  and  $>60^\circ$  at work were not significantly associated with low back pain risk (i.e. 0.97 [95% CI: 0.86–1.08] for  $>30^\circ$  and 0.97 (95% CI: 0.85–1.09) for  $>60^\circ$  of forward bending).

**Conclusion:** Our findings suggest that device-measured duration of forward bending during work is not associated with low back pain in childcare workers.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Early identification of postpartum depression: Possibilities of using information on personal and family history of psychiatric disorders to identify at-risk women

**Ph.d.-student Mette-Marie Zacher Kjeldsen**<sup>1,2</sup>, Kathrine Bang Madsen<sup>1,3</sup>, Xiaoqin Liu<sup>1</sup>, Merete Lund Mægbæk<sup>1</sup>, Thalia Robakis<sup>4</sup>, Veerle Bergink<sup>4,5</sup>, Trine Munk-Olsen<sup>1,6</sup>

<sup>1</sup>*NCRR - National Centre for Register-based Research, School of Business and Social Sciences, Aarhus University*, <sup>2</sup>*Department of Public Health, Aarhus University*, <sup>3</sup>*CIRRAU - Centre for Integrated Register-based Research, Aarhus University*, <sup>4</sup>*Department of Psychiatry, Icahn School of Medicine at Mount Sinai*, <sup>5</sup>*Department of Psychiatry, Erasmus Medical Center*, <sup>6</sup>*Department of Clinical Research, University of Southern Denmark*

**Background:** Postpartum depression (PPD) affects 10-15% of new mothers with negative consequences when untreated; thus, early identification is essential. Personal (PH) and family (FH) history of psychiatry are two of the most significant risk factors, often co-existing due to shared genes and environment. The aim of this study was to disentangle the contribution to PPD risk by PH and FH and to assess the potential of systematically using this information to identify women at risk.

**Methods:** Utilizing Danish registers and the HOPE cohort, we conducted a cohort study. From a total of 170,218 childbirths in the HOPE cohort, we included a subset of 161,810 childbirths. Women with depression one year prior to delivery were excluded (n=5,840). The exposures were defined as any psychiatric disorders (ICD-10: F00-99) or psychotropic medication use (ATC: N05-06) in the index mother (PH) and the index mothers' parents (FH) prior to delivery. The outcome was defined using two measures: PPD symptoms (PPD screenings from the HOPE cohort) within 12 weeks postpartum and PPD diagnosis (ICD-10: F32-33 or ATC: N06A) within 6 months postpartum. First, the distribution of participants in relation to PPD diagnosis and PPD symptoms was calculated. Second, proportions with 95% Wald confidence intervals (CI) of PH and FH among cases were estimated. Third, logistic regression analyses were computed to estimate odds ratios (OR) with 95% CI for the association between a) PH and PPD, b) FH and PPD, and c) combination of PH and FH and PPD.

**Results:** Expected at the presentation.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Body Mass Index and risk of colorectal cancer recurrence. A population-based cohort study in Denmark.

**Cathrine Fønnesbech Hjorth**<sup>1</sup>, Maja Halgren Olsen<sup>2</sup>, Sinna Ulrichsen<sup>1</sup>, Jesper Nors<sup>3,6</sup>, Jannik Wheler<sup>1</sup>, Signe Borgquist<sup>4,5</sup>, Lene Iversen<sup>6,7</sup>, Susanne Dalton<sup>2,8,9</sup>, Deirdre Cronin-Fenton<sup>1</sup>

<sup>1</sup>Department of Clinical Epidemiology, Department of Clinical Medicine, Aarhus University Hospital, Aarhus University, <sup>2</sup>Cancer Survivorship, Danish Cancer Institute, <sup>3</sup>Department of Molecular Medicine, Aarhus University Hospital, <sup>4</sup>Department of Oncology, Department of Clinical Medicine, Aarhus University Hospital, Aarhus University, <sup>5</sup>Department of Oncology, Clinical Sciences, Lund University, <sup>6</sup>Department of Clinical Medicine, Aarhus University, <sup>7</sup>Department of Surgery, Aarhus University Hospital, <sup>8</sup>Department of Clinical Oncology and Palliative Care, Zealand University Hospital, <sup>9</sup>Institute of Clinical Medicine, Copenhagen University

**Background:** The prognosis of colorectal cancer (CRC) patients may be adversely impacted by obesity. We evaluated the impact of Body Mass Index (BMI) on CRC recurrence and mortality.

**Methods:** We conducted a Danish population-based cohort study of stage I-III CRC patients who underwent curatively intended surgery during 2001-2020. We ascertained data on BMI, tumor characteristics, surgery, comorbidities, socioeconomic position, lifestyle, and deaths from the Danish Colorectal Cancer Groups' clinical database and population-based registries, and a validated algorithm to identify CRC recurrence. We calculated 5-year cumulative incidences (CIF), age, sex, and calendar-year standardized incidence/mortality rates (SIR/SMR) per 100 person-years and used Cox regression to compute hazard ratios (HR) with 95% confidence intervals (95%CI) of CRC recurrence and mortality.

**Results:** In 33,828 CRC patients (median [IQR] age 70 years [62-77], 66.5% colon cancer, 45.2% females) 5,939 developed recurrences (CIF=19.5%), 6,681 died (CIF=37.2%). Compared with healthy weight (BMI=18.5-24.9kg/m<sup>2</sup>, SMR=6.04), underweight (BMI<18.5kg/m<sup>2</sup>) was associated with increased mortality (SMR=10.97, HR=1.57, 95%CI=1.36-1.80), overweight (BMI=25-29.9kg/m<sup>2</sup>) and obesity (BMI=30-34.9kg/m<sup>2</sup>) were associated with decreased mortality (SMR=5.30, HR=0.89, 95%CI=0.84-0.94 and SMR=5.42, HR=0.90, 95%CI=0.83-0.97). No association was seen in severe obesity (BMI≥35kg/m<sup>2</sup>). Recurrence rates were similar across BMI groups (SIRunderweight=5.87, SIRhealthy weight=5.52, SIRoverweight=5.17, SIRobesity=5.03, SIRsevere obesity=5.30).

**Conclusions:** Our findings suggest that underweight at time of surgery is associated with increased mortality among CRC patients, whereas overweight and obesity are associated with reduced mortality; a phenomenon recognized as the obesity paradox. Our next step is to evaluate how comorbidities, socioeconomic position, and lifestyle may influence BMI's association with CRC recurrence and mortality.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Exploring Regional Disparities: Prevalence of Endometriosis Symptoms and Related Consequences in Denmark

Tong Zhu<sup>1</sup>, Eeva-Liisa Johansen<sup>1</sup>, **Marie Josiasen**<sup>1</sup>, Andrew Horne<sup>2</sup>, Lucky Saraswat<sup>3</sup>, Dorte Rytter<sup>1</sup>  
<sup>1</sup>Aarhus University, <sup>2</sup>The University of Edinburgh, <sup>3</sup>University of Aberdeen

Endometriosis displays a diverse range of symptoms, often leading to underdiagnosis. Regional disparities in diagnosed endometriosis have been identified in a recent Danish study. This study aims to explore variations in regional prevalence of six specific symptoms (menstruation pain, pain during sexual intercourse, cyclic pain and cyclic pain during defecation) and consequences (infertility and high use of the healthcare system due to pelvic pain). The study also investigates how this prevalence varies across demographics, including age, ethnicity, household composition, education level, socioeconomic position, and parity.

This study used data from the CYKLUS survey which was conducted to study women's health in Denmark. This survey included 60,000 Danish women aged 16 to 51 in 2023. The Danish registry data was used to obtain the demographic information. The age-standardized prevalence of six specific symptoms and consequences was calculated for each demographic variable. We also used logistic regression to estimate the association between regions of residence and having the six specific symptoms/consequences.

Preliminary findings suggest younger women are more likely to have symptoms/consequences compared to women in the older age group. Our results indicate that the prevalence of endometriosis symptoms/consequences is not higher in northern Denmark, contrary to the region's reported high diagnosis rate. Certain demographic factors are shown to be associated with specific endometriosis symptoms.

These findings underscore the complexity of endometriosis symptoms/consequences and call for further investigation into factors causing regional disparities. The study suggests potential associations between demographics and specific symptoms, prompting the need for more in-depth analysis.

**The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.**

## Disease-Modifying Antirheumatic Drug (DMARD) use in Sweden

Alexander Rieem Dun<sup>1</sup>, Christoph Abé<sup>1,2</sup>, **Alexandra Cooper**<sup>1</sup>

<sup>1</sup>Quantify Research, <sup>2</sup>Karolinska Institutet

**Background:** Rheumatic diseases encompass a diverse array of debilitating conditions, characterized by inflammation, pain, and often irreversible joint damage, affecting millions of patients worldwide. Disease-Modifying Antirheumatic Drugs (DMARDs) represent a cornerstone in the management of these conditions. In this study, we aimed at providing an overview of DMARD use in Sweden, to highlight the role of DMARDs in the treatment of rheumatic diseases.

**Methods:** This observational cohort study utilised data from Swedish national administrative health care registers to describe the number of patients using DMARDs. The number of patients were reported by drug type and by mechanism of action. The study period ranged from 2005 to 2023.

**Results:** 94,651 patients were prescribed DMARDs in Sweden between 2005 and 2023. The TNF-inhibitors adalimumab (66%), etanercept (40%), and golimumab (7 %) were the DMARDs that had been prescribed to most patients. The interleukin inhibitors brodalumab (<1%), bimekizumab (<1%), and risankizumab (<1%) were the DMARDs that had been prescribed to least patients.

**Conclusion:** While these numbers depend on authorization dates, they underscore the importance of DMARDs in rheumatic disease management in Sweden. However, futures studies across the Nordics are warranted that provide detailed insights into unmet patient needs for a variety of indications and elucidate complex treatment patterns and associated patient characteristics. Such efforts are crucial as they can inform the pharmaceutical industry, policy makers, clinicians, and healthcare professionals to collaboratively improve patient outcomes.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Are there differences in physical activity patterns and fitness levels in adolescents with and without impairments?

Karin Kjellenberg<sup>1</sup>, Kwok Ng<sup>2,3,4</sup>, Anna Bjerkefors<sup>1,5</sup>, Marie Lund Ohlsson<sup>1,6</sup>, Örjan Ekblom<sup>1</sup>, Gisela Nyberg<sup>1,7</sup>, **Björg Helgadóttir**<sup>1,8</sup>

<sup>1</sup>The Swedish School Of Sport And Health Science, <sup>2</sup>University of Turku, Faculty of Education, <sup>3</sup>University of Limerick, Physical Activity for Health Research Cluster, Department of Physical Education and Sport Sciences, <sup>4</sup>University of Eastern Finland, School of Educational Sciences and Psychology, <sup>5</sup>Karolinska Institutet, Department of Neuroscience, <sup>6</sup>Mid Sweden University, The Swedish Winter Sports Research Centre, Department of Health Sciences, <sup>7</sup>Karolinska Institutet, Department of Global Public Health, <sup>8</sup>Karolinska Institutet, Department of Clinical Neuroscience, Division of Insurance Medicine

**Background and aim:** Many adolescents with impairments face participation restrictions in their daily lives. This study aimed to investigate the physical activity (PA), sedentary time and fitness levels of adolescents with and without impairments as well as stratified by type of impairment (motor, learning, vision, or hearing impairments).

**Methods:** A cross-sectional, convenience sample of adolescents (n=972, mean age 13.4 ± 0.3 years) and their parents/guardians were recruited from the general schools. Parents/guardians reported the adolescent's impairment status, and adolescent data were linked with self-reported organised sports participation. Time spent (min) in PA and sedentary was measured by accelerometers in different time domains; whole week, school time, leisure time on weekdays, and weekends. Fitness (mL/min/kg) was estimated using the Ekblom-Bak submaximal ergometer test. Multilevel mixed models were applied.

**Results:** Of the adolescents (n=972), those without impairments (69%) had higher levels of PA, met the PA recommendations to a greater degree (35% vs 19%), had better fitness, and participated to a greater extent in organised sports than those with impairments. Vigorous PA was consistently lower across learning and vision, impairment groups in all time domains. Fitness levels were lower among those with motor and learning impairments.

**Conclusions:** In almost all time domains, adolescents with impairments were less physically active, spent more time sedentary, and had lower fitness than peers without impairments. Public health strategies are needed to increase physical activity among all adolescents, with particular attention to adolescents with impairments, thus reducing the prevalence of secondary health conditions in the future.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## A comprehensive analysis of age of onset and cumulative incidence of mental disorders: a Danish register study

**Christoffer Beck**<sup>1</sup>, Carsten Bøcker Pedersen<sup>1,2,3,4</sup>, Oleguer Plana-Ripoll<sup>1,5</sup>, Søren Dalsgaard<sup>1,6,7</sup>, Jean-Christophe Debost<sup>1,8</sup>, Thomas Munk Laursen<sup>1</sup>, Katherine Lousie Musliner<sup>9,10</sup>, Preben Bo Mortensen<sup>1,2,3</sup>, Marianne Giørtz Pedersen<sup>1</sup>, Liselotte Vogdrup Petersen<sup>1</sup>, Zeynep Yilmaz<sup>1,11,12,13</sup>, John McGarh<sup>1,14</sup>, Esben Agerbo<sup>1,2</sup>

<sup>1</sup>National Centre for Register-Based Research, Aarhus University, <sup>2</sup>Centre for Integrated Register-based Research, Aarhus University, <sup>3</sup>Big Data Centre for Environment and Health, Aarhus University, <sup>4</sup>Hammel Neurorehabilitation Centre and University Research Clinic, Aarhus University, <sup>5</sup>Department of Clinical Epidemiology, Aarhus University and Aarhus University Hospital, <sup>6</sup>Department of Clinical Medicine, University of Copenhagen, <sup>7</sup>Center for Child and Adolescent Psychiatry, Mental Health Services of the Capital Region, <sup>8</sup>Aarhus University Hospital Skejby, Department of Affective Disorders, <sup>9</sup>Department of Affective Disorders, Aarhus University Hospital - Psychiatry, <sup>10</sup>Department of Clinical Medicine, Aarhus University, <sup>11</sup>Department of Biomedicine, Aarhus University, <sup>12</sup>Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, <sup>13</sup>Department of Psychiatry, University of North , <sup>14</sup>Queensland Centre for Mental Health Research, The Park Centre for Mental Health

**Background:** The age of onset, incidence and cumulative incidence of mental disorders are critical epidemiological measures, providing essential insights into the development and course of these disorders across the lifespan. This study aims to provide up-to-date estimates of the age of onset, age-specific incidence, and cumulative incidence for a comprehensive range of mental disorders using data from Danish registers.

**Methods:** We conducted a follow-up study encompassing all Danish residents from January 1, 2004, to December 31, 2021, totaling 91,613,465 person-years. Data were sourced from the Danish Psychiatric Central Research Register, identifying individuals treated in secondary care. We investigated specific categories of mental disorders, including substance abuse disorders, intellectual disabilities, pervasive developmental disorders, and behavioral and emotional disorders. Age-sex-specific incidence rates were estimated using Poisson regression, and cumulative incidence was calculated using Aalen-Johansen's competing risks model. The study provides estimates of age of onset incidence, and cumulative incidence for various mental disorders, including their age and sex distributions.

**Results:** The cumulative incidence by age 80 years for any mental disorder was 30.72% (95% confidence interval: 30.62-30.83%) for males and 34.46% (34.35-34.57%) for females. The most common types of mental disorders were anxiety-related disorders 16.27% (16.19-16.36%) for males and 23.39% (23.29-23.50%) for females. For those who develop mental disorders, half will have developed their disorder by approximately age 22.

**Conclusions:** Approximately one in three individuals will seek treatment for at least one mental disorder in a secondary care setting by age 80.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Attention Deficit/Hyperactivity Disorder and non-persistence of Statins – a nationwide study

**PhD student Nina Pil Hostrup Nielsen**<sup>1,2</sup>, Aske Astrup<sup>2</sup>, Emil Loldrup Fosbøl<sup>3</sup>, Maria Theresa Wimberley Böttger<sup>2</sup>, Professor Søren Dalsgaard<sup>1,2</sup>

<sup>1</sup>*Child and Adolescent Mental Health Center, Copenhagen University Hospital – Mental Health Services CPH, Copenhagen, Denmark; Dept of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark*, <sup>2</sup>*The National Centre for Register-based Research*, <sup>3</sup>*Department of Cardiology, Rigshospitalet*

**Background and aim:** Individuals with ADHD often have executive dysfunctions and prefer immediate rewards. Studies suggest an increased risk of cardiovascular diseases in ADHD. Statins, a blood lipid-lowering drug treatment, prevent major adverse cardiovascular events and reduce mortality. However, this benefit is not felt directly, which may reduce persistence. We aimed to estimate Statin non-persistence in individuals with and without ADHD.

**Methods:** Danish health registries provided data for a nationwide cohort study of individuals aged 18 – 63 years who initiated a Statin between 1996-2016. The cohort was followed from Statin initiation until non-persistence, emigration, death, or the end of a two-year follow-up period. ADHD at baseline was defined through clinical diagnosis and drug dispensations. In sub-analyses of individuals with acute myocardial infarction, we estimated associations between ADHD and Statin non-persistence. We used Cox regression to calculate hazard ratios and 95% confidence intervals, adjusted for age, sex, and calendar year. Cumulative incidences of Statin non-persistence were also calculated.

**Results:** Among 337,180 incident users of Statins, 2,290 had ADHD. Non-persistence to Statins was found in 59.0% of those with ADHD and in 48.8% of those without ADHD within a two-year follow-up period. Hazard ratios and cumulative incidences will be presented.

**Conclusion:** Understanding challenges in Statin persistence among ADHD individuals holds the potential for improving long-term cardiovascular outcomes and reducing healthcare system burdens.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Adverse Childhood Experiences, Social Isolation, Job Strain, and Cardiovascular Disease Mortality in US Older Employees

**Assistant Professor Timothy Alan Matthews**<sup>1</sup>, Jian Li<sup>2,3</sup>

<sup>1</sup>California State University, Northridge, <sup>2</sup>Fielding School of Public Health, University of California, Los Angeles, <sup>3</sup>School of Nursing, University of California, Los Angeles

**Background and aim:** Stress is a key driver of cardiovascular disease (CVD), yet the contribution of psychosocial stressors to the development of CVD has not been systematically examined in United States (U.S.) populations. The objective of this study was to assess prospective associations of adverse childhood experiences (ACEs), social isolation, and job strain with CVD mortality.

**Methods:** Data were from the large, nationally representative, population-based Health and Retirement Study (HRS). ACEs, social isolation and job strain were assessed using validated survey instruments at baseline between 2006–2008, and death information was followed up through 2018. Cox proportional hazards regression models were used to examine prospective associations of ACEs, social isolation, and job strain with CVD mortality among 4046 older employees free from CVD at baseline.

**Results:** During 42,149 person-years of follow-up time, 59 death cases of CVD were reported. After adjustment for covariates, ACEs and job strain were significantly associated with increased risk of CVD mortality (aHR and 95% CI = 3.67 [1.59, 8.48] and 2.24 [1.21, 4.11], respectively), whereas social isolation demonstrated an inflated but nonsignificant association (aHR and 95% CI = 1.62 [0.72, 3.66]).

**Conclusion:** These findings highlight the role of psychosocial exposures as novel and clinically relevant risk factors for CVD.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Covid-19 infection and vaccination during first trimester and risk of congenital anomalies

**Dr. Maria Christine Magnus**<sup>1</sup>, Anne K Örtqvist<sup>2,3</sup>, Anne-Marie Nybo Andersen<sup>4</sup>, Olof Stephansson<sup>2,5</sup>, Siri E. Håberg<sup>1,6</sup>, Stine Kjaer Urhoj<sup>4,7</sup>

<sup>1</sup>Norwegian Institute Of Public Health, <sup>2</sup>Karolinska Institutet, <sup>3</sup>Visby County Hospital, <sup>4</sup>University of Copenhagen, <sup>5</sup>Karolinska University Hospital, <sup>6</sup>University of Bergen, <sup>7</sup>Statistics Denmark

**Background:** Limited evidence exists regarding whether infection with or vaccination against Covid-19 during the first trimester might influence the risk of major congenital anomalies.

**Methods:** We conducted a registry-based study of the risk of congenital anomalies according to exposure to infection with and vaccination against Covid-19 among 343,066 liveborn singletons in Sweden, Denmark and Norway with an estimated start of pregnancy between March 1st, 2020, and February 14th, 2022. Major congenital anomalies were categorized according to the EUROCAT definitions. The risk after Covid-19 infection or vaccination during the first trimester was assessed using logistic regression, adjusting for maternal age, parity, education, income, country of origin, smoking, BMI, chronic conditions and estimated date of start of pregnancy.

**Results:** A total of 17,704 (5.2%) infants had a major congenital anomaly. Neither exposure to infection with Covid-19 (adjusted OR 0.99; 95% CI, 0.90 to 1.08), nor vaccination against Covid-19 (adjusted OR 1.04; 95% CI, 0.97 to 1.10), during the first trimester were associated with higher risk of major congenital anomalies overall. When evaluating subgroups of anomalies, the only subgroups with a suggestive association with vaccination was nervous system anomalies (adjusted OR 1.63; 95% CI, 0.99 to 2.66). No associations were seen with other subgroups.

**Conclusions:** Neither Covid-19 infection or vaccination during first trimester in pregnancy was associated with congenital anomalies. The risk of nervous system anomalies according to exposure to vaccination against Covid-19 should be further evaluated in future studies.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Long-term exposure to air pollution and Parkinson's Disease diagnosis - a Finnish register-based study

**Isabell Katharina Rumrich**<sup>1,2</sup>, Antti Korhonen<sup>2,3</sup>, Lise Marie Frohn<sup>4</sup>, Jørgen Brandt<sup>4</sup>, Camilla Geels<sup>4</sup>, Sirpa Hartikainen<sup>1</sup>, Otto Hänninen<sup>2</sup>, Anna-Maija Tolppanen<sup>1</sup>

<sup>1</sup>*School of Pharmacy, University Of Eastern Finland*, <sup>2</sup>*Department of Health Security, Finnish Institute for Health and Welfare*, <sup>3</sup>*Department of Environmental and Biological Sciences, University of Eastern Finland*, <sup>4</sup>*Aarhus University*

**Background and aim:** Air pollution is one of the most harmful environmental exposures globally. Investigations for an association with Parkinson's disease (PD) are increasing, still there is no conclusive evidence yet. We studied the association between long-term air pollution exposure and risk for PD.

**Methods:** A register-based nested case-control study of 22,189 PD cases diagnosed 1996-2015 and their age, sex, and region-matched controls (n= 148,009) was conducted. Exposure to nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>) was estimated for 6 to 16 years preceding the index date, accounting for move history. Conditional logistic regression adjusted for comorbidities and occupational social class was applied to quantify the association.

**Results:** The average exposure to NO<sub>2</sub> was 15.8 (SD 11.75) µg/m<sup>3</sup>, to O<sub>3</sub> 49.3 (SD 8.95) µg/m<sup>3</sup> and to PM<sub>2.5</sub> 7.7 (SD 3.22) µg/m<sup>3</sup>. We observed a borderline association between exposure O<sub>3</sub> during 6 to 16 years before index date (OR 1.03, 95% CI 1.00-1.06, per IQR of 12.1 µg/m<sup>3</sup>). NO<sub>2</sub> was inversely associated with PD risk (OR 0.95, 95% CI 0.92-0.99, per IQR of 16.8 µg/m<sup>3</sup>). No association between PM<sub>2.5</sub> and PD risk was observed (OR 1.0, 95% CI 0.96-1.01, per IQR of 16.8 µg/m<sup>3</sup>).

**Conclusion:** A weak association between long-term O<sub>3</sub> exposure and PD risk was observed. A strong correlation (Pearson correlation coefficient -0.92) between O<sub>3</sub> and NO<sub>2</sub> may explain the inverse association between NO<sub>2</sub> and PD. More high-quality studies with long-term exposure and appropriate exposure assessment period are needed to strengthen the evidence for air pollution as PD risk factor.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Urinary incontinence(UI), erectile dysfunction(ED), and health-related quality of life(HRQoL) after radical prostatectomy(RP), compared with age-similar men: A study from the Cancer Registry of Norway(CRN).

**Phd Student Mona Otrebski Nilsson**<sup>1,2</sup>, Sophie Dorothea Fosså<sup>3</sup>, Tor Åge Myklebust<sup>2,4</sup>, Ylva Maria Gjelsvik<sup>2</sup>, Tom Børge Johannesen<sup>2</sup>, Kirsti Aas<sup>1,5</sup>

<sup>1</sup>Faculty of Medicine, University of Oslo, <sup>2</sup>Cancer Registry of Norway, Norwegian Institute of public health, <sup>3</sup>National Advisory Unit on Late Effects after Cancer Treatment, Oslo University Hospital Department of Research, Møre and Romsdal Hospital Trust, <sup>4</sup>Department of Research, Møre and Romsdal Hospital Trust, <sup>5</sup>Departement of Urology, Akershus University Hospital

**Background and aim:** More post-RP population-based data on UI, ED and HRQoL is needed, comparing prostate cancer patients with age-similar men from the general population (Norms). The aim of this study was to compare post-RP UI, ED, and HRQoL in patients and Norms, and explore associated factors.

**Methods:** At least 24 months after RP, 1513 CRN registered patients (2017-2019) and 1891 Norms responded to EPIC-26 and the EORTC-QLQ-C30 (Item#30; Global QoL, Good/ Fair: 5-7). EPIC-26 outcomes: Daily use of  $\geq 1$  pad (Item#3) and quality of erections (Item#9, Poor:  $\geq 3$ ), and related moderate/big problems (Items#4a/12). Multivariable logistic regressions evaluated associations between covariates and the selected outcomes.

**Results:** After RP, 635 patients (41%) reported UI, and 929 patients (61%) experienced ED. (Norms: 5% and 25%, respectively). Among patients with UI, 24% described problems, compared to 57% of those who reported ED. In the multivariable analyses, increasing age and performance of non-nerve sparing RP significantly increased the risk of UI (OR=1.9) and ED (OR=6.2). ED (OR=0.5), but not UI, was significantly associated with reduced HRQoL in patients and Norms, together with self-reported comorbidity and limited social activity. No clinically relevant differences of HRQoL function scores were observed between patients and Norms.

**Conclusion:** Nerve-sparing emerged as the only modifiable variable affecting UI and ED. Minimal differences of HRQoL were observed between patients and Norms, despite huge differences of UI and ED. Our study underlines the importance of improving nerve-sparing techniques. Further, functional aspects and problems should be reported separately.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Healthcare utilization and redemption of psychotropic drug prescription following major organizational changes in a healthcare setting.

**Lea Nørgaard Sørensen**<sup>1</sup>, Ligaya Dalgaard<sup>2</sup>, Johan Høy Jensen<sup>3</sup>, Marianne Kyndi<sup>4</sup>, Morten Vejs Willert<sup>4</sup>

<sup>1</sup>*Department of Occupational Medicine, Danish Ramazzini Centre, Aarhus University Hospital,*

<sup>2</sup>*Department of Psychology and Behavioral Sciences, Aarhus University,* <sup>3</sup>*Copenhagen Stress Research Center,* <sup>4</sup>*Department of Occupational Medicine, Danish Ramazzini Centre, Gødstrup Hospital*

**Background:** Organizational changes have previously been associated with decreased mental health. However, previous studies have not taken into account the timing of the events as well as general trends. In 2016-2019 five hospitals in Aarhus were united to one, posing an obvious natural experiment. The aims were to examine if employees increase healthcare utilization and redemption of psychotropic drug prescriptions after organizational changes and if specific types of change, employee groups or time windows show increased risk.

**Method:** The population was derived from organizational records, comprising individuals employed at one of five hospitals in the years from 2014-2020, including their job title and affiliation. Workplaces were assigned an index month corresponding to the month of relocation and an exposure category (e.g., relocation only, relocation and merger, relocation and reorganization, prolonged relocation, or no relocation (controls)). Organizational data were linked with national registries of healthcare utilizations (general practitioner, psychologist, or psychiatrist) and redemptions of psychotropic drug prescriptions (antidepressants, anxiolytics, and sedatives). Aligned on the index month data will be analyzed using interrupted times series.

**Results:** Final analyses are currently being carried out and will be presented at the conference. We expect to find delayed effects on psychotropic drug prescriptions and utilization of psychologist or psychiatrist of 3-9 months and 9-12 months, respectively.

**Conclusion:** This study will provide insight on the effects of organizational changes on healthcare workers and specific groups at risk. This knowledge is valuable when informing preventive actions in relation to future organizational changes.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Associations between weight status and mental well-being in childhood and adolescence: A systematic review of observational studies

Stine Schramm<sup>1</sup>, **Iben Rask Heuck**<sup>1</sup>, Nina Rica Wium Geiker<sup>1</sup>, Cathrine Lawaetz Wimmelmann<sup>1</sup>

<sup>1</sup>*Centre For Childhood Health*

**Background:** Unhealthy weight development and poor mental well-being in childhood and adolescence are major public health concerns. Several studies have shown an association between weight-status and different domains of mental well-being, however, no systematic review of the research has been conducted. Thus, several questions remain about the strength and the direction of the overall association, as well as questions concerning potential effect moderators. We aim to assess and summarize observational studies investigating associations of weight-status and mental well-being among children and adolescence.

**Methods:** Literature searches were conducted in Pubmed, PsycINFO, Scopus, and Web of Science. Based on theoretical and empirical considerations, the following well-being domains were included: quality of life, life satisfaction, self-esteem, self-efficacy, body satisfaction/esteem, positive/negative affect, and socio-emotional difficulties. Likewise, the definition of weight-status included measures as body mass index (BMI), waist-circumference, body-composition, bodyfat percentage, and change in any weight status indicator. Cross-sectional, case-control and longitudinal studies were included. The inclusion criteria were studies with children and adolescents from 2-18 years, from the general population, and from western cultures.

**Results:** We reviewed 2422 studies for eligibility and 208 studies are currently being full text screened. The main findings will be presented at the conference. If data allow it, this will encompass an assessment of potential moderators such as age, sex, socioeconomic position, and, whether the association varies across specific weight and mental well-being measures.

**Conclusion:** Based on the results from this systematic review, we plan to conduct further studies using Danish survey and register-based data.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Differences in causes of death and mortality risk among older people with and without diabetes in Norwegian home care services. A nationwide registry study.

**Tonje Teigland**<sup>1,2</sup>, Jannicke Igland<sup>1,2</sup>, Kjersti M. Blytt<sup>1</sup>, Johannes Haltbakk<sup>1</sup>, Marit Graue<sup>1</sup>, Kåre I. Birkeland<sup>3,4</sup>, Truls Østbye<sup>5</sup>, Marit Kirkevold<sup>6</sup>, Marjolein Iversen M<sup>1</sup>

<sup>1</sup>*Department of Health and Caring Sciences, Western Norway University of Applied Sciences,*

<sup>2</sup>*Department of Global Public Health and Primary Care, University of Bergen,* <sup>3</sup>*Institute of Clinical Medicine, University of Oslo,* <sup>4</sup>*Department of Transplantation Medicine, Oslo University Hospital,*

<sup>5</sup>*Department of Family Medicine and Community Health, Duke University,* <sup>6</sup>*Department of Nursing and Health Promotion, Oslo Metropolitan University*

**Background:** With a rising elderly population, the importance of home care services (HCS) has increased, necessitating epidemiological insights on mortality in recipients of HCS. This study aimed to investigate causes of death and estimate all-cause mortality risk among persons with and without diabetes (pharmacologically treated) in HCS.

**Methods:** Data was obtained from the Norwegian Information System for the Nursing and Care Sector (IPLOS), Norwegian Prescription Database (NorPD) and Cause of Death Registry (CDR). The study population includes all persons receiving HCS (aged 65-90 years at start of follow-up) in Norway between 2009-2014. Based on ATC-codes, we defined individuals as having diabetes ( $\geq 1$  prescriptions of GLD in current half-year or the year before) and treatment sub-groups; “non-insulin GLD only”, “insulin and non-insulin GLD” or “insulin only”. Persons not prescribed GLD were considered not having diabetes. Mortality risks were calculated by using cox proportional hazards regression, with age as time scale.

**Results:** Among 256,400 individuals, 14.5% had diabetes at start of follow-up. Cancer and cardiovascular diseases were the most common causes of death. In analyses of cause-specific mortality, all three diabetes groups had higher risk of cardiovascular mortality compared to persons without diabetes, while risk of cancer death was highest among persons without diabetes. Persons using “insulin only” had higher all-cause mortality risk compared to those without diabetes, among both women (HR 1.44 (CI 1.37-1.52)) and men (HR 1.22 (CI 1.16-1.28)).

**Conclusion:** Mortality was higher in “insulin-only” users in HCS, compared to those without diabetes, emphasizing their vulnerability to adverse outcomes.

The poster will be displayed on June 12<sup>th</sup>, 2014, during “Coffee and poster viewing” at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Disease incidence and mortality among citizens in Grindsted – a Danish city with a large pollution

**Professor Annette Kjær Ersbøll**<sup>1</sup>

<sup>1</sup>*SIF, SDU*

**Background:** During 1924-1970, a chemical factory in Grindsted in Denmark deposited solid and liquid waste in the neighborhood and a local stream resulting in pollution of the city.

**Methods:** An open cohort study was used to compare the disease incidence and mortality among citizens in Grindsted with citizens in 12 comparable cities. Exposure was defined as ever lived in Grindsted, number of years in Grindsted, period of life living in Grindsted and periods living in Grindsted and/or comparable cities. Diseases included cancer, autoimmune, cardiovascular, neurological, psychological, and respiratory diseases. The association was examined using Poisson regression of incidence rates and presented as incidence rate ratio (IRR) with 95% confidence interval.

**Results:** A total of 606,269 citizens in Grindsted and/or comparable cities were included. In total, 51% of the citizens were men in both Grindsted and comparable cities, whereas the mean age at inclusion was 1 year lower in Grindsted. Educational level was slightly lower among citizens in Grindsted. Overall, very few differences in disease incidence were seen between citizens in Grindsted and comparable cities. Mortality was significantly lower among citizens in Grindsted (IRR=0.95 [0.93; 0.97]). A significantly higher incidence of prostate cancer (IRR=1.12 [1.03; 1.23]) and asthma (IRR=1.06 [1.01; 1.11]) was seen in Grindsted and a significantly lower incidence of kidney cancer (IRR=0.74 [0.59; 0.92]) was seen in Grindsted.

**Conclusion:** Overall, disease incidence among citizens in Grindsted was similar to disease incidence among citizens in comparable cities except for a few diseases.

Presenting author: Professor Annette Kjær Ersbøll, ake@sdu.dk

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Genome-wide association analyses in family triads and dyads following assisted reproductive technology

**Siri Nærland Skodvin**<sup>1,2</sup>, Miriam Gjerdevik<sup>1,3</sup>, Astanand Jugessur<sup>1,2</sup>, Julia Romanowska<sup>1,2</sup>, Siri E. Håberg<sup>1,2</sup>, Hans Ivar Hanevik<sup>1,4</sup>, Robert Lyle<sup>1,5</sup>, Rolv Terje Lie<sup>1,2</sup>, Håkon K. Gjessing<sup>1,2</sup>

<sup>1</sup>Centre for Fertility and Health, Norwegian Institute of Public Health, <sup>2</sup>Department of Global Public Health and Primary Care, University of Bergen, <sup>3</sup>Department of Computer Science, Electrical Engineering and Mathematical Sciences, Western Norway University of Applied Sciences, <sup>4</sup>Department of Fertility, Telemark Hospital Trust, <sup>5</sup>Department of Medical Genetics, Oslo University Hospital and University of Oslo

**Background:** Several stages of genetic selection are at play prior to the successful birth of a child. Genome-wide association analyses may unravel whether the allele distributions in offspring conceived by assisted reproductive technology (ART) differ from what would be expected under Mendel's law of segregation, as well as from those of offspring conceived without ART. If so, this is informative regarding the timing of genetic selection events in human reproduction.

**Methods:** Genome-wide genotype data were available for 40,000 child-parent triads and dyads in the Norwegian Mother, Father, and Child Cohort Study. Among the children, 1,336 were conceived by ART. Applying family-based log-linear models implemented in the R package Haplin, we estimated fetal effects in ART and non-ART offspring.

**Results:** We identified fetal effects in ART offspring for SNPs located in fertility-related genes, such as DYNLRB2-AS1. Repeated analyses in a non-ART sample did not identify the same effects.

**Conclusion:** A fetal effect in the current context indicates a change in allele frequencies from what would be expected under Mendel's law of segregation. As the fetal effect identified in ART offspring was not observed in non-ART offspring, it is less likely that the effect is linked to genetic selection prior to conception. Further studies are needed to elucidate the mechanisms influencing genetic selection, such as the role of ART procedures relative to early viability.

### References:

Magnus et al., PMID: 27063603, 2016

Gjessing & Lie, PMID: 16674560, 2006

### Grants:

Norwegian Research Council (#262700)

ERC Synergy grant BIOSFER (#101071773)

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Hearing loss, sick leave, and disability pension: Findings from the HUNT follow-up study

**Astrid Jorgensen**<sup>1</sup>, Lisa Aarhus<sup>1</sup>, Bo Engdahl<sup>2</sup>, Bernt Bratsberg<sup>3</sup>, Vegard Fykse Skirbekk<sup>2</sup>, Ingrid Sivesind Mehlum<sup>1</sup>

<sup>1</sup>STAMI - National Institute of Occupational Health, <sup>2</sup>FHI - Norwegian Institute of Public Health, <sup>3</sup>The Ragnar Frisch Centre for Economic Research

**Background and aim:** Evidence on the association between hearing loss and sick leave or disability pension is to a great extent based on few cross-sectional studies and remains unclear. We aim to assess the associations in a long-term follow-up population study.

**Methods:** We used baseline data from a large population-based hearing study in Norway, the HUNT Hearing study (1996-1998). The sample included 21 754 adults (48.5% men, mean age at baseline 36.6 years). We used register data on sick leave and disability pension (1996-2011). Cox regression was used to assess the association between hearing loss at baseline (Pure tone average/PTA 0.5-4 kHz >20 dB) and time to first physician-certified sick leave episode, as well as time to first disability pension payment.

**Results:** Hearing loss at baseline (yes/no) was weakly associated with time to first physician-certified sick leave episode: Hazard ratio (HR) 1.2 (95% confidence interval (CI) 1.1-1.3). Restricting the exposed group to people with both hearing loss and tinnitus, the HR was slightly increased: 1.3 (95% CI 1.1-1.6). The association did not depend on age, sex, education, or occupational class. Hearing loss in 1996-1998 was also associated with time to first received disability pension: HR 1.5 (95% CI 1.3-1.8). Stronger associations were found for disabling hearing loss (PTA >35).

**Conclusions:** This large population-based cohort study indicates that hearing loss is associated with increased risk of receiving disability pension, especially among younger adults, low educated and white-collar workers. Hearing loss was weakly associated with sick leave.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.



## Exploring small non-coding RNAs as blood-based biomarkers to predict Alzheimer's disease

**Laia Gutierrez-tordera**<sup>1,2,3</sup>, Christopher Papandreou<sup>1,2,3</sup>, Nil Novau-Ferré<sup>1,2,3</sup>, Pablo García-González<sup>4,5</sup>, Melina Rojas-Criollo<sup>1,2,3</sup>, Marta Marquí<sup>4,5</sup>, Luis A Chapado<sup>6</sup>, Christos Papagiannopoulos<sup>7</sup>, Noèlia Fernandez-Castillo<sup>8</sup>, Sergi Valero<sup>4,5</sup>, Jaume Folch<sup>1,2,3,5</sup>, Miren Ettcheto<sup>9,10</sup>, Antoni Camins<sup>9,10</sup>, Mercè Boada<sup>4,5</sup>, Agustín Ruiz<sup>4,5</sup>, Mònica Bulló<sup>1,2,3,11</sup>

<sup>1</sup>Nutrition and Metabolic Health Research Group, Department of Biochemistry and Biotechnology, Rovira i Virgili University (URV), <sup>2</sup>Institute of Health Pere Virgili (IISPV), <sup>3</sup>Center of Environmental, Food and Toxicological Technology-TecnATox, Universitat Rovira i Virgili (URV), <sup>4</sup>ACE Alzheimer Center Barcelona, Universitat Internacional de Catalunya (UIC), <sup>5</sup>Biomedical Research Networking Centre in Neurodegenerative Diseases (CIBERNED), Carlos III Health Institute, <sup>6</sup>Laboratory of Epigenetics of Lipid Metabolism, Instituto Madrileño de Estudios Avanzados (IMDEA)-Alimentación, CEI UAM+CSIC, <sup>7</sup>Department of Hygiene and Epidemiology, University of Ioannina School of Medicine, <sup>8</sup>Department de Genetics, Microbiology and Statistics, Faculty of Biology, Universitat de Barcelona, <sup>9</sup>Department of Pharmacology, Toxicology and Therapeutic Chemistry, Faculty of Pharmacy and Food Science, Universitat de Barcelona, <sup>10</sup>Institute of Neuroscience, Universitat de Barcelona, <sup>11</sup>CIBER Physiology of Obesity and Nutrition (CIBEROBN), Carlos III Health Institute

Alzheimer's disease (AD) diagnosis relies on clinical symptoms complemented with biological biomarkers, the Amyloid-Tau-Neurodegeneration (ATN) framework. Small non-coding RNA (sncRNA) in the blood are potential predictors of AD. We identified sncRNA signatures specific to ATN and AD, and evaluated their contribution to AD conversion prediction beyond ATN alone. MCI patients within the ACE cohort underwent cerebrospinal fluid and plasma collection and were followed-up for a median of 2.45-years. Plasma sncRNAs were sequenced. Conditional logistic and Cox regression analyses with elastic net penalties were performed to identify sncRNA signatures for A+(T|N)+ and AD. Weighted scores were computed and their association with AD risk was assessed. Gene ontology (GO) and KEGG enrichment analysis were performed. The study sample consisted of 96 A+(T|N)+ and 96 A-T-N- participants. We constructed a 6-miRNAs signature for ATN that could classify MCI patients into A-T-N- and A+(T|N)+ groups (AUC of 0.7335 [0.7327 to 0.7342]). However, the addition of the model to conventional risk factors did not improve the prediction of AD beyond the conventional model plus ATN status. The AD-related 15-sncRNAs signature exhibited better predictive performance than the conventional model plus ATN status (C-statistic: 0.849 [0.808 to 0.890]). When ATN was included in this model, the prediction further improved to 0.875 (0.840 to 0.910). The miRNA-target interaction network and functional analysis suggested that the miRNAs in both signatures are involved in neuronal pathways associated with AD. The AD-related sncRNA signature holds promise in predicting AD conversion, providing insights into early AD development and potential targets for prevention.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## Association of a high-protein and low-glycemic-index diet during pregnancy with offspring growth and obesity until the age of 18 years – a hypothetical trial

**Christina Sonne Mogensen**<sup>1</sup>, Christian Mølgaard<sup>1</sup>, Faidon Magkos<sup>1</sup>, Nina Geiker<sup>2</sup>, Anne Ahrendt Bjerregaard<sup>3,5</sup>, Charlotta Granström<sup>3</sup>, Thorhallur I. Halldorsson<sup>3,4</sup>, Sjurður Frodi Olsen<sup>3,6,7,8</sup>

<sup>1</sup>Department of Nutrition, Exercise and Sports, Faculty of Science, University of Copenhagen, <sup>2</sup>Centre for Childhood Health, <sup>3</sup>Department of Epidemiology Research, Statens Serum Institut, <sup>4</sup>Faculty of Food Science and Nutrition, School of Health Sciences, University of Iceland, <sup>5</sup>Frederiksberg Hospital Center for Klinisk Forskning og Forebyggelse, <sup>6</sup>Department of Public Health, University of Copenhagen, <sup>7</sup>Harvard TH Chan School of Public Health, <sup>8</sup>University of the Faroe Islands

**Background:** Maternal pre-pregnancy BMI and excessive gestational weight gain (GWG) are associated with offspring obesity. Moreover, maternal dietary patterns, particularly protein intake and glycemic index, influence GWG and fetal development. This study aimed to investigate the association of a high-protein, low-glycemic-index (HPLGI) diet during pregnancy with offspring growth and obesity.

**Methods:** Using data from the Danish National Birth Cohort (DNBC), a hypothetical trial was conducted to investigate the association of an HPLGI diet during pregnancy on offspring growth up to 18 years of age. A cohort of 17,551 women met the inclusion criteria and exposure groups were defined based on their protein intake and glycemic index to mimic the APPROACH trial. Offspring outcomes were assessed at various ages and a linear mixed model was used including potential confounders.

**Results:** Offspring born to women following an HPLGI diet during pregnancy had 2.59 kg higher body weight and 0.72 kg/m<sup>2</sup> higher BMI at 18 years compared to those from the moderate-protein, moderate-glycemic-index (MPMGI) group. Maternal characteristics varied between the exposure groups, with the HPLGI women exhibiting 1.67 kg higher pre-pregnancy weight and 0.49 kg/m<sup>2</sup> BMI, with no differences in GWG.

**Conclusion:** Offspring born to women consuming an HPLGI diet during pregnancy had higher body weight and BMI at 18 years compared to offspring born to women on an MPMGI diet. These findings raise questions about the long-term implications of maternal dietary patterns on offspring health. Further research is needed to elucidate the mechanisms underlying these associations.

The poster will be displayed on June 12<sup>th</sup>, 2014, during "Coffee and poster viewing" at 13:30 - 14:20, Chr. Hansen Auditorium, building 34.

## A

Abé, Christoph	208	Andersen, Johan Hviid	157
Abildgaard, Johan Simonsen	35	Andersen, Lars Højsgaard	44
Agerbo, Esben	25, 97, 165, 215	Antoniussen, Christian S.	129
Ahern, Thomas P	99	Ariansen, Inger Kristine Holtermann	190
Ahmad, Amar	10	Astrup, Aske	217
Ahrendt	17	Atarodi, Vera	131
Bjerregaard, Anne			
Ahrenfeldt, Linda Juel	40	Aaby, Peter	163
Albrechtsen, Nicolai Jacob Wewer	159	Aarhus, Lisa	246
Algren, Maria Holst	121	Aas, Kirsti	230

## B

Baker, Jennifer L.	89, 151	Bliddal, Mette	21
Baker, Kate	132	Blomberg, Nikolaj Fasmer	182
Bang Madsen, Kathrine	203	Blytt, Kjersti M.	238
Barone-Adesi, Francesco	128	Boada, Mercè	250
Bartholdy, Andreas	159	Bonde, Jens Peter	103
Bech, Bodil Hammer	84, 198	Borgquist, Signe	204
Beck, Christoffer	215	Bosy-Westphal, Anja	94
Begtrup, Luise Mølenberg	103	Brambilla, Anna Maria	128
Benros, Michael E.	142	Brandt, Jørgen	229
Bergink, Veerle	203	Bratsberg, Bernt	246
Bergström, Jakob	131	Brix, Anna Trier Heiberg	36
Bhatt, Samir	111	Broberg, Karin	12
Bihrmann, Kristine	94, 140	Brooke, Hannah L	81
Birkeland, Kåre I.	238	Bruun, Jens M	157
Bjerkefors, Anna	214	Bulló, Mònica	250
Bjerregaard, Anne Ahrendt	148, 183, 253	Byberg, Liisa	81
Bjerregaard, Lise G.	151	Bälter, Katarina	14, 28, 189
Bjødstrup Jensen, Peter	21	Bødkegaard, Katrine	88

Bjørge, Tone 39

## C

Camins, Antoni 250

Cedeño-Laurent, Jose G. 183

Chapado, Luis A 250

Christensen, Anne Illemann 116

Christensen, Hanne 182

Christensen, Helle 182

Collatz

Christensen, Jakob 68

Christensen, Karl B 24

## D

Dahm\*, Christina C. 129

Dalby, Tine 170

Dalen, Ingvild 190

Dalgaard, Ligaya 236

Dalsager, Louise 113

Dalsgaard, Søren 215, 217

Dalton, Susanne 204

Damkier, Per 99

Dantoft, Thomas M. 183

## E

Eberl, Erica Elizabeth 148

Egeskov-Cavling, Amanda Marie 161

Egsgaard, Sofie Dyekær 21

Ejlertsen, Bent 99

Ekblom, Örjan 214

Elmståhl, Sölve 120

## F

Facci, Giulia 128

Fadum, Elin Anita 32

Farkas, Dóra K 99

Christensen, Rune 142

Christensen, Sophie Hilario 151

Christiansen, Ann-Marie 148

Hellerung

Cooper, Alexandra 208

Cornick, Jennifer 132

Craven, Lucas 24, 35

Hillebert

Cronin-Fenton, Deirdre 99, 204

Deirdre

Dantoft, Thomas Meinertz 17, 198

Daidsen, Michael 116

Debost, Jean-Christophe 215

Debost, Jean-Christophe 165

Philippe

Deleuran, Bent 84

Della Corte, Francesco 128

Dreier, Julie W. 68

Drews, Henning Johannes 152

Engdahl, Bo 246

Ersbøll, Annette Kjær 140, 240

Ersbøll, Annetter Kjær 116

Ettcheto, Miren 250

Extrand, Elena 104

Flachs, Esben Meulengracht 103

Florin, Ulrika 14

Folch, Jaume 250

Fazel, Seena	44
Feddersen, Søren	99
Feenstra, Bjarke	68
Fernandez- Castillo, Noèlia	250
Ferrari*, Pietro	129
Fink, Per	198
Fischer, Thea K.	161

## G

Gaifém, Francisca Manuela Faria	173
García-González, Pablo	250
Gazibara, Tatjana	121
Geels, Camilla	229
Geiker, Nina	253
Geiker, Nina Rica Wium	237
Gemes, Katalin	131
Giørtz Pedersen, Marianne	215
Gjelsvik, Ylva Maria	230

## H

Hackett, Ruth	157
Halgreen Eiset, Andreas	173
Hall, Alisha Silvia Mercedes	165
Halldorsson, Thorhallur I.	253
Halling Ullberg, Oskar	14, 28
Haltbakk, Johannes	238
Hameiri-Bowen, Dan	151
Hamilton-Dutoit, Stephen	99
Hamina, Aleks	194
Hanevik, Hans Ivar	244
Hansen, Chelsea	133
Hansen, Karoline Kærgaard	12

Fosbøl, Emil Loldrup	217
Fosså, Sophie Dorothea	230
Frankel, Hannah	103
Frederiksen, Margit	12
Fritz, Josef	39
Frohn, Lise Marie	229
Frost, Anders Dreyer	201

Gjerdevik, Miriam	244
Gjessing, Håkon K.	244
Gluud, Lise Lotte	159
Gormsen, Lise K.	183
Granström, Charlotta	253
Graue, Marit	238
Grauslund, Jakob	40, 51
Gupta, Nidhi	201
Gutierrez- tordera, Laia	250
Hestoy, Bartal Hofgaard	182
Heuck, Iben Rask	237
Hjorth, Cathrine F	99
Hjorth, Cathrine Fonnesbech	204
Hoffmann, Sofie	85
Have Holmberg, Teresa	169
Holtermann, Andreas	201
Horne, Andrew	206
Horsbøl, Trine Allerslev	85
Hougaard, Karin Sørig	103
Hudda, Mohammed	89
Hulvej Rod, Naja	58, 152

Hansen, Kristoffer Torp	198	Häggström, Christel	39
Hansen, Stefan Nygaard	84, 198	Hänninen, Otto	229
Hartikainen, Sirpa	229	Høst, Christian	84
Heiland, Emerald	81	Håberg, Siri E.	227, 244
Helgadóttir, Björg	214		

## I

Ibsen, Daniel B.	129	Iversen, Peter Bindslev	85
Igland, Jannicke	190, 238	Iversen M, Marjolein	238
Iversen, Lene	204		

## J

Jacobsen, Lars Hervig	170	Johannesen, Caroline Klint	161
Jakobsen, Katrine Prisak	40	Johannesen, Tom Børge	230
Janecka, Magdalena	21	Johansen, Eeva- Liisa	206
Jani, Bhautesh	169	Johnsen, Søren Paaske	195
Javan Abraham, Feben	189	Jorgensen, Astrid	246
Jensen, Allan	89	Josiasen, Marie	206
Jensen, Camilla Bjørn	23	Juber, Nirmin	10
Jensen, Johan Høy	236	Jugessur, Astanand	244
Jensen, Majken Karoline	159	Juliusson, Petur B.	89
Jensen-Fangel, Søren	23	Just-Nørregaard, Vivi	157
Jerkeman, Mats	39	Jørgensen, Terese Sara Høj	16
Jimenez-solem, Espen	23	Jørgensen, Torben	17, 183

## K

Karlsen, Iben Louise	35	Koch-Henriksen, Nils	146
Katsiferis, Alexandros	111	Kofoed- Enevoldsen, Allan	85
Kennedy, Beatrice	81	Kolstad, Henrik	12
Kiadaliri, Ali	19	Kondziella, Daniel	142
Kirkevold, Marit	238	Korhonen, Antti	229
Kjaer Urhoj, Stine	227	Kristensen, Klaudia	195
Kjellenberg, Karin	214	Kristensen, Solvejg	195
Kjær, Susanne K.	89	Kruuse, Christina	182

Kjærulff, Thora Majlund	140	Kyndi, Marianne	236
Kloster, Stine	116	Kyriakidis, Stavros	201
Klotsche, Jens	84	Kärkkäinen, Olli	194
<b>L</b>			
Labianca, Sonja	97	Lie, Rolv Terje	244
Larsson, Nanna P.	25	Lind, Lars	120
Lasgaard, Mathias	126	Lindberg-Larsen, Martin	36
Lash, Timothy L	99	Linneberg, Allan	183
Lash, Timothy L.	88	Liu, Xiaoqin	203
Laursen, Thomas Munk	44	Loos, Ruth	148
Laustsen, Lisbeth Moelgaard	126	Lousdal, Mette Lise	79, 88, 97
Lehn, Sara Fokdal	85	Lund Kårhus, Line	17
Lehtinen-Jacks, Susanna	14, 28	Lund Ohlsson, Marie	214
Li, Jian	224	Lyle, Robert	244
<b>M</b>			
Madsen, Anne Mette	12	Michaëlsson, Karl	81
Madsen, Ida E. H.	113	Minden, Kirsten	84
Madsen, Ida E.H.	25	Mittendorfer-Rutz, Ellenor	131
Madsen, Ida EH	24	Mogensen, Christina Sonne	253
Madsen, Ida Elisabeth Huitfeldt	103	Mogensen, Hanna	104
Magkos, Faidon	253	Mortensen, Laust Hvas	111
Magnus, Maria Christine	227	Mortensen, Preben Bo	215
Magyari, Melinda	146	Moseholm, Kristine Frøsig	159
Mainz, Jan	195	Munk Laursen, Thomas	215
Mannion, Elizabeth	94	Munk-Olsen, Trine	21, 203
Marquié, Marta	250	Musliner, Katherine L.	25
Mathisen, Jimmi	24	Musliner, Katherine Louise	165
Matthews, Timothy Alan	224	Musliner, Katherine Lousie	215
Mboya, Innocent	39	Myklebust, Tor Åge	230
McGarth, John	215	Müller, Manfred	94
McGrath, John	97	Mægback, Merete Lund	203
Mehlum, Ingrid Sivesind	246	Mølgaard, Christian	253

Meyer, Haakon	190	Möller, Sören	40, 51
Eduard			
Michaelsson, Karl	120		

## N

Nersesjan,	142	Nilsson, Mona	230
Vardan		Otrebski	
Ng, Kwok	214	Nilsson, Sandra	44
		Feodor	
Nielsen, Henrik	198	Nordentoft,	44
		Merete	
Nielsen, Mikkel	140	Nors, Jesper	204
Bukholt			
Nielsen, Nina Pil	217	Novau-Ferré, Nil	250
Hostrup			
Nielsen, Pernille	159	Nyberg, Gisela	214
Yde			
Nielsen, Rikke	170	Nybo Andersen,	227
Thoft		Anne-Marie	
Nielsen, Sandra	35		

## O

Okholm, Gunhild	16	Olsen, Sjurdur	148, 253
		Frodi	
Olsen, Anja	129	Osler, Merete	16
Olsen, Maja	204	Overvad, Kim	129
Halgren			

## P

Papagiannopoulos,	250	Petersen, Janne	23
Christos			
Papandreou,	250	Petersen, Lone	21
Christopher		Kjeld	
Pedersen, Carsten	215	Petersen, Marie	183
Bøcker		W.	
Pedersen, Dorte	151	Petersen, Tanja	36
C.		Gram	
Pedersen, Dorte	89	Plachta-Danielzik,	94
Corfitzen		Sandra	
Pedersen, Jacob	24	Plana-Ripoll,	25, 79, 88, 97,
		Oleguer	126, 165, 215
Pedersen, Malthe	84	Povlsen, Fiona	198
Jessen		Kusk	
Pedersen,	140	Proust-Lima,	129
Michelle Trabjerg		Cécile	

## R

Rabanal, Kjersti	190	Rojas-Criollo,	250
Stormark		Melina	
Ragazzoni, Luca	128	Romanowska,	244
		Julia	
Rask, Charlotte	198	Rosenkilde, Siri	85
Ulrikka			
Rasmussen,	201	Rozing, Maarten	16
Charlotte Diana		Pieter	
Nørregaard			



Rasmussen, Kathleen M.	89
Rasmussen, Lotte	21
Ravn, Signe Fischer	170
Rieem Dun, Alexander	208
Risérus, Ulf	120
Ritz, Christian	94
Robakis, Thalia	203

## S

Sagar, Malini Vendela	182
Santos, Monica	85
Saraswat, Lucky	206
Schaltzbuchholzer, Frederik	163
Schlünssen, Vivi	12
Schmidt, Julie Andersen	99
Schork, Andrew	97
Schovsbo, Signe Ulfbeck	17
Schramm, Stine	237
Sejbaek, Camilla Sandal	103
Selmer, Randi Marie	190
Sibande, Grace Thandekire	132
Sibilitz, Kirstine Lærum	169
Sigsgaard, Torben	12
Sillanpää, Mikko	194
Silva, Marisa da	39

## T

Taipale, Heidi	194
Tang, Lars Hermann	169
Taylor, Rod	169
Teigland, Tonje	238
Tettamanti, Giorgio	104

Rubin, Katrine Hass	36
Rudvin, Inger	32
Rugulies, Reiner	24, 25, 35, 103, 113
Ruiz, Agustín	250
Rumrich, Isabell Katharina	229
Rytter, Dorte	198, 206
Råket, Hans Kristian	23

Simonsen, Lone	133
Singh, Nisha	14, 28, 189
Skirbekk, Vegard Fykse	246
Skodvin, Siri Nærland	244
Skou, Søren	169
Skovbjerg, Sine	183
Sloth, Mathilde Marie Brünnich	111
Slotved, Hans-Christian	170
Stabell Benn, Christine	163
Stephansson, Olof	227
Stocks, Tanja	39
Stokholm, Lonny	40, 51
Strand, Leif Åge	32
Sun, Ming	39
Sørensen, Lea Nørgaard	236
Sørensen, Lotte Flink	170

Timmermann, Amalie	121
Titova, Olga E	120
Tjønneland, Anne	129
Toivanen, Susanna	28
Tolppanen, Anna-Maija	229

Thorsted, Anne Bonde	85	Tolstrup, Janne	140, 169
Thygesen, Lau Caspar	85, 121, 169	Tolstrup, Janne Schurmann	121
Thysen, Sanne Marie	198	Trabjerg, Betina	68
Tiihonen, Jari	194	Trentin, Monica	128
Tillander, Annika	14, 28, 189	Tøttenborg, Sandra Søgaard	103

## U

Uleman, Jeroen Floris	58	Ulrichsen, Sinna	204
Ulleman, Jeroen F.	152		

## V

Valente, Martina	128	Vicenzi, Andrea	128
Valentin, Jan Brink	195	Vilhjálmsson, Bjarni	97
Valentiner- Branth, Palle	121	Vogdrup	215
		Petersen, Liselotte	
Valero, Sergi	250	Vogt, Thomas	81
Viboud, Cecile	133	Voldstedlund, Marianne	170

## W

Weinreich	17	Wheler, Jannik	204
Petersen, Marie			
Wejse, Christian	173	Willert, Morten	236
		Vejs	
Wellnitz, Kaare Bro	17	Wimberley	217
		Böttger, Maria Theresa	
Wenstrup, Jonathan	182	Wimmelmann,	237
Wesselhoeft, Rikke	21	Cathrine Lawaetz	
		Winding, Trine	157
		Nøhr	

## Y

Yilmaz, Zeynep	215		
----------------	-----	--	--

## Z

Zacher Kjeldsen, Mette-Marie	203	Zinckernagel, Line	169
Zaks, Nina	21	Zucco, Adrian	58
Zhu, Tong	206	Zucco, Adrian Gabriel	152

## Ä

Ärnlöv, Johan	120		
---------------	-----	--	--

## Ø

Ørnbøl, Eva	17	Østergaard, Kirsten	12
-------------	----	------------------------	----

Østbye, Truls 238

Østergaard, 165  
Søren Dinesen

## Ö

Örtqvist, Anne K 227