

Serum 25-hydroxyvitamin D, calcium and parathyroid hormone levels in Native and European populations in Greenland

Ca homeostasis is important to human health and tightly controlled by powerful hormonal mechanisms that display ethnic variation. Ethnic variations could occur also in Arctic populations where the traditional Inuit diet is low in Ca and sun exposure is limited. We aimed to assess factors important to parathyroid hormone (PTH) and Ca in serum in Arctic populations. We included Inuit and Caucasians aged 50–69 years living in the capital city in West or in rural East Greenland. Lifestyle factors were assessed by questionnaires. The intake of Inuit diet was assessed from a FFQ. 25-Hydroxyvitamin D (25OHD2 and 25OHD3) levels were measured in serum as was albumin, Ca and PTH. The participation rate was 95 %, with 101 Caucasians and 434 Inuit. Median serum 25OHD (99.7 % was 25OHD3) in Caucasians/Inuit was 42/64 nmol/l (25, 75 percentiles 25, 54/51, 81) (P

Forfatter: Stig Andersen; Paneeraq Noahsen; Karsten Rex; I. Fleischer ; N. Albertsen ; Marit Eika Jørgensen; L.K. Schaebel ; M.B. Laursen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Parathyroid hormone; Calcium; Vitamin D; Ethnicity; Inuit; 25-hydroxyvitamin D; Parathyroid hormone **Titel på tidsskrift:** British Journal of Nutrition **Volume på tidsskrift:** 119 **Nummer på tidsskrift:** 4 **Udgiver:** Cambridge University Press **DOI nummer:** <https://doi.org/10.1017/S0007114517003944>

Genetic determinants of glycated hemoglobin levels in the Greenlandic Inuit population

We previously showed that a common genetic variant leads to a remarkably increased risk of type 2 diabetes (T2D) in the small and historically isolated Greenlandic population. Motivated by this, we aimed at discovering novel genetic determinants for glycated hemoglobin (HbA1C) and at estimating the effect of known HbA1C-associated loci in the Greenlandic population. We analyzed genotype data from 4049 Greenlanders generated using the Illumina Cardio-Metabochip. We performed the discovery association analysis by an additive linear mixed model. To estimate the effect of known HbA1C-associated loci, we modeled the effect in the European and Inuit ancestry proportions of the Greenlandic genome (EAPGG and IAPGG, respectively). After correcting for multiple testing, we found no novel significant associations. When we investigated loci known to associate with HbA1C levels, we found that the lead variant in the GCK locus associated significantly with HbA1C levels in the IAPGG ($PIAPGG=4.8 \times 10^{-6}$, $\beta IAPGG=0.13SD$). Furthermore, for 10 of 15 known HbA1C loci, the effects in IAPGG were similar to the previously reported effects. Interestingly, the ANK1 locus showed a statistically significant ancestral population differential effect, with opposing directions of effect in the two ancestral populations. In conclusion, we found only 1 of the 15 known HbA1C loci to be significantly associated with HbA1C levels in the IAPGG and that two-thirds of the loci showed similar effects in Inuit as previously found in European and East Asian populations. Our results shed light on the genetic effects across ethnicities.

Forfatter: E.V.R. Appel ; I. Moltke ; Marit Eika Jørgensen; Peter Bjerregaard; A. Linneberg ; O. Pedersen ; A. Albrechtsen ; T. Hansen ; N. Grarup **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Diabetes; Inuit; Arctic; Greenland **Titel på tidsskrift:** European Journal of Human Genetics **Volume på tidsskrift:** 26

[Åben publikation](#)

Measuring social inequality in health amongst indigenous peoples in the Arctic. A comparison of different indicators of social disparity among the Inuit in Greenland

The purpose of the article is to compare different indicators of social position as measures of social inequality in health in a population sample from an indigenous arctic people, the Inuit in Greenland. Data was collected during 2005–2015 and consisted of information from 3967 adult Inuit from towns and villages in all parts of Greenland. Social inequalities for smoking and central obesity were analysed in relation to seven indicators of social disparity in four dimensions, i.e. education and employment, economic status, sociocultural position, and

place of residence. For each indicator we calculated age-adjusted prevalence by social group, rate ratio and the concentration index. The indicators were correlated with Pearson's r ranging from 0.24 to 0.82. Concentration indices ranged from 0.01 to 0.17. We could not conclude that one indicator was superior to others. Most of the indicators were traditional socioeconomic indicators used extensively in research in western countries and these seemed to be useful among the Inuit too, in particular household assets and job. Two sociocultural indicators developed for use among the Inuit and which included parameters specific to the indigenous peoples in the transition from a traditional to a modern life style proved to be equally useful but not superior to the traditional socioeconomic indicators. The choice of indicator must depend on what it is realistic to collect in the actual research setting and the use of more than one indicator is recommended. It is suggested to further develop culture specific indicators of social position for indigenous peoples.

Forfatter: Peter Bjerregaard; I.K. Dahl-Petersen ; C.V.L. Larsen **Type:** Article | Artikel **Årstal:** 2018
Emner: Social inequality; Socioeconomic conditions; Cultural transition; Smoking; Obesity; Inuit **Titel på tidsskrift:** SSM Population Health **Volume på tidsskrift:** 6 **Udgiver:** Elsevier **DOI nummer:** <https://doi.org/10.1016/j.ssmph.2018.08.010>

Research | Forskning - peer review > Article | Artikel

Three lifestyle-related issues of major significance for public health among the Inuit in contemporary Greenland: a review of adverse childhood conditions, obesity, and smoking in a period of social transition

Greenland is a country in transition from a colonial past with subsistence hunting and fishing to an urban Nordic welfare state. Epidemiological transition from infectious to chronic diseases has been evident since the 1950s. Ninety percent of the population is Inuit.

We studied three public health issues based on published literature, namely adverse childhood experiences, addictive behavior, and suicide; diet and obesity; and smoking. Alcohol consumption was high in the 1970s and 1980s with accompanying family and social disruption. This is still a cause of poor mental health and suicides in the generations most affected. The diet is changing from a traditional diet of fish and marine mammals to imported food including food items rich in sugar and fat from domestic animals, and the level of physical activity is decreasing with an ensuing epidemic rise in obesity. The prevalence of smoking is high at around 60% among both men and women and is only slowly decreasing. Smoking shows large social variation, and tobacco-related diseases are widespread.

The diseases and conditions outlined above all contribute towards a low life expectancy at birth—69 years for men and 74 years for women in 2011–2015—compared with 78 and 84 years for men and women, respectively, on average in the European countries. The translation of government public health programs into local activities needs strengthening, and it must be realized that the improvement of public health is a long-term process.

Forfatter: Peter Bjerregaard; C.V.L. Larsen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Inuit; Greenland; Alcohol; Suicide; Diet; Obesity; Smoking **Titel på tidsskrift:** Public Health Reviews **Volume på tidsskrift:** 39 **Nummer på tidsskrift:** 5 **Udgiver:** BMC **DOI nummer:** <https://doi.org/10.1186/s40985-018-0085-8>

Research | Forskning - peer review > Article | Artikel

Associations between vitamin D status and atherosclerosis among Inuit in Greenland

Background and aims: Low levels of vitamin D are suspected to be a risk factor for cardiovascular disease and atherosclerosis. The aim of this study was to assess the prevalence of subclinical atherosclerosis among Inuit in Greenland, and to evaluate the association with vitamin D status. We hypothesized that low vitamin D status could be associated with higher carotid intima-media thickness (IMT) as a marker of atherosclerosis.

Methods: 756 adults from the Inuit Health in Transition (IHIT) study carried out in Greenland in the period 2005–2010 were included. A blood sample donated in 1987 was available for a sub-sample of 102 individuals. Serum 25(OH)D3 from the IHIT study and the 1987 survey was used as a measure of vitamin D status. IMT measurements were conducted by ultrasound scanning. The prevalence of atherosclerosis was estimated, and the association between serum 25(OH)D3 and IMT measurements was examined by linear regression.

Results: The overall prevalence of subclinical atherosclerosis was 20.1% (n = 152). The linear regression analyses indicated a weak positive association between serum 25(OH)D3 level and IMT measurements from the IHIT study, though not statistically significant after adjustment for potential confounders ($\beta = 0.35\%$ per 10 nmol/L 25(OH)D3, $p = 0.06$). Linear regression analyses of the association between serum 25(OH)D3 level in the 1987 survey and IMT measurements also indicated a positive, though not statistically significant, association after adjustment ($\beta = 0.07\%$ per 10 nmol/L 25(OH)D3, $p = 0.86$).

Conclusions: Our findings did not support the hypothesis of an association between low vitamin D levels and risk of atherosclerosis.

Forfatter: CU Gjødesen ; Marit Eika Jørgensen; Peter Bjerregaard; IK Dahl-Petersen ; CVL Larsen ; M Noël ; M Melbye ; AS Cohen ; M Lundqvist ; DM Hougaard ; JW Helge ; NO Nielsen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Atherosclerosis; Carotid intima media thickness; Vitamin D; Inuit; Greenland **Titel på tidsskrift:** Atherosclerosis **Volume på tidsskrift:** 268 **Udgiver:** Elsevier **DOI nummer:** <https://doi.org/10.1016/j.atherosclerosis.2017.11.028>

Research | Forskning - peer review > Article | Artikel

Identification of novel high-impact recessively inherited type 2 diabetes risk variants in the Greenlandic population

Aims/hypothesis: In a recent study using a standard additive genetic model, we identified a TBC1D4 loss-of-function variant with a large recessive impact on risk of type 2 diabetes in Greenlanders. The aim of the current study was to identify additional genetic variation underlying type 2 diabetes using a recessive genetic model, thereby increasing the power to detect variants with recessive effects.

Methods: We investigated three cohorts of Greenlanders (B99, n = 1401; IHIT, n = 3115; and BBH, n = 547), which were genotyped using Illumina MetaboChip. Of the 4674 genotyped individuals passing quality control, 4648 had phenotype data available, and type 2 diabetes association analyses were performed for 317 individuals with type 2 diabetes and 2631 participants with normal glucose tolerance. Statistical association analyses were performed using a linear mixed model.

Results: Using a recessive genetic model, we identified two novel loci associated with type 2 diabetes in Greenlanders, namely rs870992 in ITGA1 on chromosome 5 (OR 2.79, $p = 1.8 \times 10^{-8}$), and rs16993330 upstream of LARGE1 on chromosome 22 (OR 3.52, $p = 1.3 \times 10^{-7}$). The LARGE1 variant did not reach the conventional threshold for genome-wide significance ($p 5 \times 10^{-8}$) but did withstand a study-wide Bonferroni-corrected significance threshold. Both variants were common in Greenlanders, with minor allele frequencies of 23% and 16%, respectively, and were estimated to have large recessive effects on risk of type 2 diabetes in Greenlanders, compared with additively inherited variants previously observed in European populations.

Conclusions/interpretation: We demonstrate the value of using a recessive genetic model in a historically small and isolated population to identify genetic risk variants. Our findings give new insights into the genetic architecture of type 2 diabetes, and further support the existence of high-effect genetic risk factors of potential clinical relevance, particularly in isolated populations.

Forfatter: N Grarup ; I Moltke ; MK Andersen ; Peter Bjerregaard; CVL Larsen ; IK Dahl-Petersen ; E Jørsboe ; HK Tiwari ; SE Hopkins ; HW Wiener ; BB Boyer ; A Linneberg ; O Pedersen ; Marit Eika Jørgensen; A Albrechtsen ; T Hansen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Genetic association; Genome-wide association

Research | Forskning - peer review > Article | Artikel

Growth of children in Greenland exceeds the World Health Organization growth charts

Aim: Previous studies have found high rates of stunted linear growth in Greenlandic children. We measured growth patterns in Greenland and compared them with international growth charts.

Methods: The study cohort comprised 279 healthy children aged 6–10 years in 2012. They participated in two pregnancy and birth cohorts in Greenland and longitudinal growth data as birth was extracted from their medical records. Growth reference ranges were estimated with the lambda-mu-sigma (LMS) method and compared with growth charts from Denmark and the World Health Organization (WHO).

Results: The children's mean length, weight and head circumference were significantly larger than the WHO growth charts ($p < 0.001$). We found that 21–28% of the children aged zero to one years exceeded the WHO growth chart for length by more than two standard deviations. For weight and head circumference, 9–16% of the children aged 0–10 years and 9–11% of the children from zero to two years exceeded the WHO charts by more than two standard deviations. The Danish references were exceeded to a lesser degree.

Conclusion: This study showed that the growth of Greenlandic children up to 10 years was no longer stunted. Major determining factors suggested are genetic admixture, maternal overweight, changes in nutrition and improved health.

Forfatter: M Kløvgaard ; NO Nielsen ; TL Sørensen ; Peter Bjerregaard; B Olsen ; PB Júlíusson ; M Roelants ; HT Chistesén **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Greenland; Growth references; Growth standards; Inuit; Linear growth **Titel på tidsskrift:** Acta Pædiatrica **Udgiver:** John Wiley & Sons Ltd **DOI nummer:** <https://doi.org/10.1111/apa.14369>

Research | Forskning - peer review > Article | Artikel

Whole blood mercury and the risk of cardiovascular disease among the Greenlandic population

Background: Studies have found mercury to be associated with cardiovascular disease (CVD), however, primarily in populations with low exposure. The highest levels, and variations in the levels, of whole blood mercury (WBM) worldwide have been found in Greenland. We prospectively assessed the association between WBM and the risk of developing CVD in the Greenlandic population.

Methods: We assessed the effects of WBM levels on incident CVD among 3083 Greenlandic Inuit, participating in a population-based cohort study conducted from 2005 to 2010. WBM was measured at baseline. Participants were followed in the National Patient Registries for Denmark and Greenland and in the causes of death register for CVD events from inclusion in the study until CVD event, emigration, death or end of follow-up (30/9–2013). Using Cox regression analyses, we calculated the incidence rates and the hazard ratio of CVD events according to WBM levels. Potential interactions with sex were also investigated.

Results: The highest levels of WBM were found in men, who had a significantly higher median level (19 $\mu\text{g/L}$ (IQR:1–44)), compared with women (15 $\mu\text{g/L}$ (IQR: 1–32), ($p < 0.001$)). The crude hazard ratio (HR) for incident CVD was 1.00 (95% CI 1.00–1.00) for 5 $\mu\text{g/L}$ increase in WBM. After adjusting for several potential confounders, there was still no association between WBM and incident CVD (HR 0.99; 95%CI:0.99–1.00). We found no interactions with sex.

Conclusions: In a population with high levels of WBM, we found no association between WBM and the risk of

developing CVD in Greenland.

Forfatter: TJ Larsen ; Marit Eika Jørgensen; CVL Larsen ; IK Dahl-Petersen ; PF Rønn ; Peter Bjerregaard; S Byberg **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Whole blood mercury; Cardiovascular disease; Inuit; Greenland **Titel på tidsskrift:** Environmental Research **Volume på tidsskrift:** 146 **Udgiver:** Elsevier **DOI nummer:** <https://doi.org/10.1016/j.envres.2018.03.003>

Research | Forskning - peer review > Article | Artikel

Improved survival of head and neck cancer patients in Greenland

Previously, head and neck cancer (HNC) patients in Greenland have had significant diagnostic delay and poor survival rates. From 2005–2009 several initiatives have been made to ensure faster diagnosis and better survival. The aim of this study was to compare the prognosis before and after these initiatives were introduced.

All Greenlandic patients diagnosed with HNC between 2005 and 2012 were included. Data were retrieved from medical records and national databases and compared with the period 1994–2003.

A total of 98 patients were identified. Diagnostic delay was significantly lower compared to the period 1994–2004 ($p=0.048$). The 3-year overall survival was 56% for all HNC and 47% for nasopharyngeal carcinomas. We found that patients with HNC between 1994 and 2003 had a higher risk of death from all reasons compared with the period 2005–2012 (HR 2.17; CI 1.46–3.23) after adjustments for stage and diagnostic delay.

Patients with head HNC in Greenland from 2005–2012 were diagnosed earlier and had a better overall survival compared to the period 1994–2003. The change in survival is more likely to be due to improvement in treatment rather than the initiated interventions. Although survival has improved in Greenland, demographic problems and lack of specialists remain a challenge.

Forfatter: M Lawaetz ; RG Jensen ; J Friberg ; L Herlow ; S Brofeldt ; JG Fleischer ; Preben Homøe **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Head and neck cancer; Inuit; Survival; Delay **Titel på tidsskrift:** Journal of Circumpolar Health **Volume på tidsskrift:** 77 **Udgiver:** Taylor & Francis **DOI nummer:** <https://doi.org/10.1080/22423982.2018.1536252>

Research | Forskning - peer review > Article | Artikel

Prevalence of patients treated with anti-diabetic medicine in Greenland and Denmark. A cross-sectional register study

Diabetes mellitus is a large and growing worldwide health issue. Prior to this publication, a direct comparison of the prevalence of persons treated with anti-diabetic medicine in Greenland and Denmark has not been found. Therefore, the aim of this study is to estimate and compare the age- and gender-specific prevalence of patients treated with anti-diabetic medicine comparing Greenland and Denmark. The study was performed as a cross-sectional register study using data from population and medical registers in Greenland and Denmark. A total of 784 Greenlandic and 215,580 Danish patients treated with anti-diabetic medicine were included. The prevalence of patients aged 20–79 years treated with anti-diabetic medicine in Greenland was 2.6% (95% CI 2.4–2.8), much lower ($p 0.001$) compared to Denmark with 5.2% (95% CI 5.2–5.2). The difference was less pronounced after excluding those treated with insulin and women below 45 years treated with metformin. In conclusion, this study showed a lower prevalence of patients treated with anti-diabetic medicine in Greenland than Denmark. The main reason may be a much higher prevalence of undiagnosed diabetes in Greenland, particularly among the middle-aged. Differences in awareness of diabetes and access to continued primary healthcare may be contributing factors.

Forfatter: I Meklenborg ; Michael Lyng Pedersen; Eva Cecilie Bonefeld-Jørgensen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Diabetes mellitus; Prevalence; Greenland; Inuit; Denmark **Titel på tidsskrift:** Journal of Circumpolar Health **Volume på tidsskrift:** 77 **Udgiver:** Taylor & Francis **DOI nummer:**

Gestational diabetes and macrosomia among Greenlanders. Time to change diagnostic strategy?

Gestational diabetes mellitus (GDM) is a serious condition associated to both maternal and offspring complications. Yet, no globally accepted consensus exists on how to test and diagnose GDM. In Greenland, the clinical criteria for testing and diagnosing GDM are adapted from Danish guidelines. The aim of this study was to estimate the prevalence of GDM among Greenlanders using both the current clinical GDM criteria and the recent WHO 2013 criteria and, further, to study the association between GDM, pre-pregnant overweight or obesity and macrosomia. A cross-sectional study of all 450 Greenlandic women who gave birth to a singleton in Nuuk within 1 year was performed. Based on an oral glucose tolerance test measuring capillary whole blood glucose, 119 women were categorised as having clinical GDM, WHO 2013 GDM or not GDM. Macrosomia defined as birth weight above 4,000 g was used as outcome variable. The prevalence of clinical GDM and WHO 2013 GDM was 0.4% (95% CI; 0–1.1) and 6.9% (95% CI; 4.5–9.2). WHO 2013 GDM, fasting blood glucose, pre-pregnant maternal overweight and obesity were associated with macrosomia. WHO 2013 GDM criteria were superior to clinical criteria in predicting macrosomia indicating that it may be time to consider the diagnostic strategy used in Greenland. Pre-pregnant overweight may also need more intensified lifestyle-intervention.

Forfatter: Michael Lyng Pedersen; O Lind ; T Abelsen ; J Olesen ; Marit Eika Jørgensen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Gestational diabetes; Diagnostic; Prevalence; Macrosomia; Overweight; Inuit; Greenland **Titel på tidsskrift:** Journal of Circumpolar Health **Volume på tidsskrift:** 77 **Udgiver:** Taylor & Francis **DOI nummer:** <https://doi.org/10.1080/22423982.2018.1528126>

Microvascular complications in Nuuk, Greenland, among Greenlanders and non-Greenlanders diagnosed with type 2 diabetes

Aim: The objective of this study was to estimate and compare between Greenlanders and non-Greenlanders living in Nuuk the proportion of patients with type 2 diabetes with microvascular complications.

Methods: This study was performed as a cross-sectional register study based on information in the Electronic Medical Record (EMR). All patients diagnosed with type 2 diabetes and with permanent addresses in Nuuk were included. Patients born in Greenland were considered to be Greenlanders, while patients born outside Greenland were considered as non-Greenlanders. Proportions of patients with retinopathy, microalbuminuria, nephropathy and neuropathy were estimated based on information from the EMR.

Results: A total of 393 patients (295 Greenlanders and 98 non-Greenlanders) were included. In total 83.0% of all patients have been screened for retinopathy, while 66.4% were screened for microalbuminuria and 64.6% for neuropathy within a two year period. The most frequent microvascular complication was neuropathy, which was observed among half (49.6%) of all patients followed by microalbuminuria (28.4%), retinopathy (10.7%) and nephropathy (7.3%). Retinopathy was observed among 21.4% of the non-Greenlanders compared to only 7.0% of the Greenlanders ($p = .001$). Microalbuminuria was also observed more frequently ($p = .047$) among non-Greenlanders (37.5%) than among Greenlanders (24.9%).

Conclusion: Greenlanders seem to be less prone to especially retinopathy than are non-Greenlanders.

Forfatter: Michael Lyng Pedersen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Type 2 diabetes; Complications; Greenlanders; Inuit; Ethnicity **Titel på tidsskrift:** Diabetes Research and Clinical Practice **Volume på tidsskrift:** 136 **Udgiver:** Elsevier **DOI nummer:** <https://doi.org/10.1016/j.diabres.2017.11.030>

Validation of cardiovascular diagnoses in the Greenlandic Hospital Discharge Register for epidemiological use

Cardiovascular disease (CVD) is one of the leading causes of death worldwide. In Greenland, valid estimates of prevalence and incidence of CVD do not exist and can only be calculated if diagnoses of CVD in the Greenlandic Hospital Discharge Register (GHDR) are correct. Diagnoses of CVD in GHDR have not previously been validated specifically. The objective of the study was to validate diagnoses of CVD in GHDR. The study was conducted as a validation study with primary investigator comparing information in GHDR with information in medical records. Diagnoses in GHDR were considered correct and thus valid if they matched the diagnoses or the medical information in the medical records. A total of 432 online accessible medical records with a cardiovascular diagnosis according to GHDR from Queen Ingrid's Hospital from 2001 to 2013 (n=291) and from local health care centres from 2007 to 2013 (n=141) were reviewed. Ninety-nine and ninety-two percent of discharge diagnosis in GHDR from Queen Ingrid's Hospital and local health care centres were correct in comparison with diagnoses in the medical record indicating valid registration practice. The correctness of cardiovascular diagnoses in GHDR was considered high in terms of acceptable agreement between medical records and diagnoses in GHDR. Cardiovascular diagnoses are valid for epidemiological use.

Forfatter: M Tvermosegaard ; PF Rønn ; Michael Lyng Pedersen; Peter Bjerregaard; IK Dahl Pedersen ; CVL Larsen ; Marit Eika Jørgensen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Cardiovascular disease; Diagnoses; Inuit; Greenland; Register **Titel på tidsskrift:** International Journal of Circumpolar Health **Volume på tidsskrift:** 77 **Udgiver:** Taylor & Francis **DOI nummer:** <https://doi.org/10.1080/22423982.2017.1422668>

Cancer Incidence and Mortality in Greenland 1983–2014 – Including Comparison With the Other Nordic Countries

Background: During the last decades, social and life-style changes in Greenland have led to an increase in the incidence of several non-communicable diseases. Our aim is to present the cancer incidence and mortality in Greenland and compare the results with the other Nordic countries.

Methods: The data stems from The Danish Cancer Registry and The Danish Register of Causes of Death. Comparable data on cancer incidence and mortality in Denmark, Finland, Iceland, Norway, Sweden, and Greenland are available through collaboration between Nordic Cancer Registries (NORDCAN). We included all individuals residing in Greenland and diagnosed with or died of a cancer from 1983 to 2014.

Findings: The total number of cancer cases in Greenland for the study period was 4716 and there were 3231 cancer deaths. Respiratory and gastrointestinal cancers had the highest incidence as well as mortality in Greenland for the entire time period and for both sexes. Compared to the other Nordic countries, Greenland had significantly higher incidence and mortality rates for several cancers. Cancer of the lip, oral cavity, and pharynx, respiratory cancer, and cancer of unknown sites had the highest incidence rate ratios (2.3–3.9) and mortality rate ratios (2.7–9.9) for both sexes. The time trend from 1983 to 2014 showed a significant increase in cancer incidence in Greenland with nearly the same incidence level as the other Nordic countries. While the cancer mortality decreased in the other Nordic countries during the time period studied, there was no change in the cancer-specific mortality in Greenland.

Interpretations: The trends in cancer incidence and mortality in Greenland compared to the other Nordic countries have not been reported earlier. These data underline a need to focus on cancer-specific mortality in Greenland and prevention of high-incidence cancers related to well-established risk factors.

Forfatter: U Yousaf ; G Engholm ; H Storm ; N Christensen ; E Zetlitz ; H Trykker ; F Sejersen ; Peter Bjerregaard; LC Thygesen **Type:** Article | Artikel **Årstal:** 2018 **Emner:** Cancer incidence; Cancer mortality; Greenland;

Research | Forskning - peer review > Article | Artikel

Persistent organic pollutants and hematological markers in Greenlandic pregnant women: The ACCEPT sub-study

The Arctic populations have high blood concentrations of persistent organic pollutants (POPs). Exposure to POPs was related to adverse health effects e.g. immune, neurological and reproductive systems. This study investigates associations between serum POP levels and haematological markers in Greenlandic pregnant women. This cross-sectional study included 189 women enrolled in 2010–2011 at the Greenlandic West coast by the inclusion criteria ≥ 18 years of age and had lived for 50% or more of their life in Greenland. The associations between the sum of the POP variables polychlorinated biphenyls (sumPCBs), organochlorine pesticides (sumOCPs), perfluoroalkylated substances (sumPFASs) and 24 haematological markers were analysed using linear regression adjusted for age, pre-pregnancy BMI, parity, gestation week, plasma-cotinine and alcohol intake. It showed a significantly inverse association between several haematological markers (eosinophil, lymphocyte, neutrophil and white blood cells) and sumPCBs, sumOCPs and sumPFASs. In addition, the monocyte, mean corpuscular haemoglobin concentration, plateletcrit and platelet count markers were significantly inversely associated with sumPFASs, but the haematocrit and mean erythrocyte corpuscular volume were positively associated with sumPFASs. In conclusion, exposure to POPs influenced several haematological markers, especially cell count parameters, suggesting immunosuppressive potential of POPs in Greenlandic pregnant women. The data need further investigations.

Forfatter: AKS Knudsen ; M Long ; H Sloth Pedersen ; Eva Cecilie Bonefeld-Jørgensen **Type:** Article | Artikel

Årstal: 2018 **Emner:** Persistent organic pollutants; Blood samples; Haematological markers; Inuit; Pregnancy

Titel på tidsskrift: International Journal of Circumpolar Health **Volume på tidsskrift:** 77 **Nummer på tidsskrift:** 1 **Udgiver:** Taylor & Francis **DOI nummer:** <https://doi.org/10.1080/22423982.2018.1456303>

Research | Forskning - peer review > Article | Artikel

Fra lukket til åben dialog: udviklingsmuligheder for socialt arbejde i Grønland

Artiklen peger – med fokus på børn og unge – på potentielle udviklingsmuligheder for community-baseret socialt arbejde i Grønland. Der er i øjeblikket et øget fokus på at vende interessen hen mod strukturelle og lokalsamfunds-orienterede metoder i det sociale arbejde. Nogle af disse metoder henter inspiration i oprindelige folks viden om og former for social støtte.

Forfatter: Peter Berliner; Mette Sonniks **Type:** Article | Artikel **Årstal:** 2016 **Emner:** Grønland; Socialt arbejde; Inuit; Community psykologi **Titel på tidsskrift:** Uden for Nummer **Nummer på tidsskrift:** 33

Udgivelsesland: Danmark **ISSN nummer:** 1600-888X

Research | Forskning - peer review > Book | Bog

Fremtiden tilhører os: om det smukke og forunderlige i Nanortalik og Tasiilaq

Bogen beskriver og diskuterer de historiske og videnskabsteoretiske baggrunde for at udforme en reflektiv baseline for interventioner, der støtter og styrker social resiliens i to byer i Kalaallit Nunaat/Grønland. Det vises og dokumenteres, hvordan en reflektiv baseline kan tilbyde en måde at forske på, der aktivt styrker sociale ressourcer og derved virker transformativ i sin udførelse.

Projektets forsknings-del, som specifikt omtales i kapitlerne 2 og 3, er central for en forståelse af hele projektet, er udført af professor, Peter Berliner og er blevet til på baggrund af Peter Berliners mange års forskning i grønlandske forhold og projekt Siunissaq's konkrete aktiviteter og udførelse.

Forfatter: Peter Berliner; Tina Enghoff ; Anette Molbech **Type:** Book | Bog **Årstal:** 2016 **Emner:** Social resiliens; Indigenous methods; Refleksiv baseline; Grønland; Community mobilisering; Lokalsamfund; Inuit; Oprindelige folks rettigheder; Social læring **Udgivelsessted:** København **Udgivelsesland:** Danmark
Forlag: Siunissaq **ISBN nummer:** 978-87-998583-3-0

Research | Forskning - peer review > Article | Artikel

Conceptualizing and contextualizing food insecurity among Greenlandic children

Objective: To review the context of food insecurity in Greenlandic children, to review and compare the outcomes related to food insecurity in Greenlandic children, in other Arctic child populations and in other western societies, and to explore the measure used by the Health Behaviour in School-aged Children (HBSC) study.

Design: The study includes literature reviews, focus group interviews with children and analyses of data from the HBSC study. HBSC is an international cross-national school-based survey on child and adolescent health and health behaviour in the age groups 11, 13 and 15 years and performed in more than 40 countries. The item on food insecurity is "Some young people go to school or to bed hungry because there is not enough food in the home. How often does this happen to you?" (with the response options: "Always", "Often", "Sometimes", or "Never").

Results: The context to food security among Inuit in Arctic regions was found to be very similar and connected to a westernization of the diet and contamination of the traditional diet. The major challenges are contamination, economic access to healthy food and socio-demographic differences in having a healthy diet. The literature on outcomes related to food insecurity in children in Western societies was reviewed and grouped based on 8 domains. Using data from the Greenlandic HBSC data from 2010, the item on food security showed negative associations on central items in all these domains. Focus group interviews with children revealed face and content validity of the HBSC item.

Conclusion: Triangulation of the above-mentioned findings indicates that the HBSC measure of food shortage is a reliable indicator of food insecurity in Greenlandic schoolchildren. However, more research is needed, especially on explanatory and mediating factors.

Forfatter: Birgit Niclasen ; Michael Mocho ; Steven Arnfjord; Christina Schnohr **Type:** Article | Artikel
Årstal: 2013 **Emner:** Inuit; Greenland; Food insecurity **Titel på tidsskrift:** International Journal of Circumpolar Health **Volume på tidsskrift:** 72 **Nummer på tidsskrift:** 19928 **Udgiver:** Tayloy & Francis **Udgivelsessted:** Alaska **Udgivelsesland:** United States of America **DOI nummer:** 10.3402/ijch.v72i0.19928

[Åben publikation](#)

Research | Forskning - peer review > Article | Artikel

At være i verden som en krop, der løber ind i samfundet: et community psykologisk perspektiv

Artiklen beskriver tre aspekter ved social, kropslig og rumslig læring og belyser disse ud fra data fra MATU projektet i Grønland.

Forfatter: Peter Berliner **Type:** Article | Artikel **Årstal:** 2013 **Emner:** Community psykologi; Inuit; Udsatte unge; Social læring; Social udsathed; Social arv; Ungdomskultur; Ungdomsforskning **Titel på tidsskrift:** Pædagogisk Psykologisk Tidsskrift **Volume på tidsskrift:** 50 **Nummer på tidsskrift:** 5
ISSN nummer: 1903-0002

Research | Forskning - peer review > Article | Artikel

"Nogle vælger døden. Jeg vælger livet, drømmene og troen på fremtiden": om kunst, billeder og unge i Paamiut

The article presents and analyses 20 photographs taken by ten young people in Paamiut, Greenland. The photographs were taken as a part of workshop facilitated by photographer Tina Enghoff and journalist Anette Molbech and later published as part of a book. The workshop was one of the many activities in the community mobilization program Paamiut Asasara. The photos, their titles and narrative texts are analyzed, using the method of a close reading with a clear focus on the photos themselves, combined with a contextual analysis of the photos. Transparency into the step-by-step analysis is used to secure plausibility of the results. The study shows that the photographs present the following themes: (1) searching for strength; (2) moving forward (to be on the move); (3) the will to choose and to make changes; (4) a longing for close relationship; and (5) valuing love, i.e. to love and to be loved. These themes are understood in the context of traditional Inuit story-telling and in the present situation of the young people in Paamiut as part of the Paamiut Asasara program.

Forfatter: Peter Berliner **Type:** Article | Artikel **Årstal:** 2012 **Emner:** Unge; Inuit; Fotografier; Community psykologi; Ungdomskultur; Ungdomsforskning; Eksistens **Titel på tidsskrift:** Psyke & logos
Volume på tidsskrift: 33 **Nummer på tidsskrift:** 2 **ISSN nummer:** 0107-1211

Research | Forskning - peer review > Article | Artikel

Så rejser jeg mig op og vandrer tilbage til Paamiut: om monologer i unges teater i Paamiut Asasara

I denne artikel undersøges indhold i og betydningen af unges teater monologer – som de fandt sted i forbindelse med Contact's teater-opsætning med en gruppe unge i Paamiut. Forestillingen bestod af 8 monologer, der blev fremsat af de unge. Da der var tale om monologer undersøges det, hvad der er det specifikke i netop monologen som udtryksform i denne bestemte kontekst. Det undersøges her, hvordan monologen i form af fortælling har indgået i Inuits kultur i fortællinger af myter, sagn og eventyr. Dernæst undersøges indholdet i de unges nutidige dialoger. Der afsluttes med en refleksion over betydningen af de unges dialoger i den konkrete kontekst samt mere generelt som en bestemt udtryksform. Artiklen bygger på interviews med de unge deltagere og med andre borgere i Paamiut samt på et spørgeskema og statistik om udviklingen i Paamiut.

Forfatter: Peter Berliner **Type:** Article | Artikel **Årstal:** 2012 **Emner:** Unge; Inuit; Teater; Community resilience; Ungdomskultur; Resiliens **Titel på tidsskrift:** Psyke & logos **Volume på tidsskrift:** 33
Nummer på tidsskrift: 2 **ISSN nummer:** 0107-1211

Research | Forskning - peer review > Article | Artikel

Bæredygtig pædagogik og fælles læring som community resiliens

Med afsæt i læringsprocesser i Fisker- og fangerakademiet i Paamiut i Grønland vises det, hvordan man kæder social ansvarlighed sammen med økologisk ansvarlighed. På denne måde knytter læringsprocessen an til community resiliens. Der gives derefter en kort sammenstilling af denne undersøgelses resultater med andre undersøgelser af læring, livskvalitet og resiliens i inuit samfund. Derefter diskuteres dette i forhold til teorier om social økologi og undervisning i bæredygtig udvikling. Metoden er en form for dokument-collage, hvor der bruges både interviews og dokumenter til at belyse den bæredygtige pædagogik i både dens konkrete og dens globale sammenhæng.

Forfatter: Peter Berliner **Type:** Article | Artikel **Årstal:** 2012 **Emner:** Inuit; Bæredygtig pædagogik; Læring i praksis; Naturpædagogik; Community resiliens; Resiliens; Læring; Miljø- & klimapædagogik **Titel på tidsskrift:** Kognition & Paedagogik **Volume på tidsskrift:** 22 **Nummer på tidsskrift:** 86 **ISSN nummer:** 0906-6225

Research | Forskning - peer review > Article | Artikel

Challenges of youth participation in participatory action research: methodological considerations of the Paamiut Youth Voice research project

Paamiut Youth Voice (PYV) is a Participatory Action Research (PAR) project, exploring youth perceptions, experiences, and the promotion of well-being in Paamiut, Greenland. Active youth participation remained a key challenge in the development of the local community through the locally initiated community mobilisation programme Paamiut Asasara. The challenges of youth participation in PYV are investigated in order to explore the implications of youth participation in PAR projects. The discussion of challenges is based on a methodological account of experiences from the research process clarifying how youth participation in the PYV project took place. Results are presented, concerning the young people's understandings and experiences of engagement and participation.

Forfatter: Laila Wattar ; Sandrine Fanous ; Peter Berliner **Type:** Article | Artikel **Årstal:** 2012 **Emner:** Resilience; Young people; Inuit; Participatory action research; Collective identity; Ungdomskultur; Ungdomsforskning; Forskningsmetode; Resiliens **Titel på tidsskrift:** International Journal of Action Research **Volume på tidsskrift:** 8 **Nummer på tidsskrift:** 2 **ISSN nummer:** 1861-1303

Research | Forskning - peer review > Contribution to book/anthology | Bidrag til bog/antologi

A social action learning approach to community resilience: "Our sharing of thoughts and feelings, our respect and trust should be passed on to the next generation"

In Paamiut in Kalaallit Nunaat (Greenland) a community mobilisation programme has been launched as a response to a history of violence, suicides, drug abuse, and child neglect. The overall goal of the programme is to strengthen community resilience, psychosocial well-being and revitalisation of the culture through promotion of locally formulated values and resources, shared activities, mobilisation of social networks, job opportunities and options for entrepreneurship. One of the main goals is to prevent child neglect through a specific programme for young mothers. The chapter describes and analyses the development of concepts, interaction, and social action in the group of young mothers.

Forfatter: Peter Berliner; Line Natascha Larsen ; María Elena de Casas Soberón **Editor:** Kristine Jensen de Lopéz ; Tia Hansen **Type:** Contribution to book/anthology | Bidrag til bog/antologi **Årstal:** 2011 **Emner:** Young mother; Community resilience; Inuit; Resilience; Resiliens; Læring; Fællesskab **Udgivelsessted:** Aalborg **Udgivelsesland:** Denmark **Værtpublikationens hoved- & undertitel:** Development of self in culture **Forlag:** Aalborg Universitetsforlag **ISBN nummer:** 978-87-7112-009-7

Research | Forskning - peer review > Article | Artikel

Man er mere fri: community psykologiske programmer for psykosocial trivsel

Artiklen belyser community psykologisk praksis gennem en præsentation af det community psykologiske perspektiv i psyko-sociale programmer, der iværksættes for at fremme mental og social trivsel hos individer, familier og i lokalsamfund og netværk. Der gives en beskrivelse og analyse af projektet Paamiut Asasara i Kalaallit Nunaat (Grønland).

Forfatter: Peter Berliner; Line Natascha Larsen **Type:** Article | Artikel **Årstal:** 2010 **Emner:** Community; Psykologi; Inuit; Social; Mobilisering **Titel på tidsskrift:** Uden for Nummer **Volume på tidsskrift:** 11 **Nummer på tidsskrift:** 20 **ISSN nummer:** 1600-888X

Research | Forskning - peer review > Article | Artikel

Som at noget lettede: strukturel vold og unge i Paamiut i Kalaallit Nunaat

Den høje voldsrate i Kalaallit Nunaat (Grønland) forklares ofte ud fra alkoholmisbrug og affektive handlinger. I

denne artikel vises det gennem en kvantitativ og kvalitativ undersøgelse, at den episodiske vold må forstås som symptomer på strukturel vold. Den strukturelle vold er en kontekst, der fremmer følelser af magtesløshed, social isolation, undgåelse af konflikter og undertrykkelse af følelser - indtil de eksploderer i konkret vold. Den strukturelle vold både legitimerer og forstår den konkrete vold, men den åbner også for interventioner, der kan ændre netop den strukturelle vold. Den strukturelle vold er skadelig for unge, da den fremmer og legitimerer vold - men lokal funderede interventioner kan modvirke dette på en virkningsfuld måde.

Forfatter: Peter Berliner; Mia Glendøs **Type:** Article | Artikel **Årstal:** 2010 **Emner:** Vold; Inuit; Deltagelse; Grønland **Titel på tidsskrift:** Psyke og Logos **Volume på tidsskrift:** 31 **Nummer på tidsskrift:** 1 **ISSN nummer:** 0107-1211

Research | Forskning - peer review > Article | Artikel

Unge liv og muligheder: deltagende aktionsforskning i Paamiut

Paamiut Youth Voice (PYV) er et deltagende aktions forskningprojekt (Participatory Action Research, PAR), gennemført med de unge i Paamiut, Kalaallit Nunaat (Grønland). Målet med projektet er at undersøge de unges visioner om og ønsker til hvordan trivsel og deltagelse kan øges. Projektet blev udviklet og iværksat som en del af det overordnede community mobiliseringsprojekt, Paamiut Asasara, og blev baseret på et lokalt formuleret ønske om viden om - og inddragelse af - de unge. Der blev efterspurgt forskning i, hvordan man bedre kan integrere de unge i samfundet, øge deres generelle trivsel, mindske social eksklusion, samt øge deres oplevelse af samhørighed i samfundet. 61 unge i alderen 12-24 deltog i forskningsprojektet. De unges opfattelse og oplevelse af trivsel blev undersøgt, med særlig fokus på individuelle og community styrker og ressourcer, samt deres ideer og drømme om hvordan trivsel og deltagelse kan øges. De unge deltog i fokusgruppeinterviews, individuelle interviews, udfyldelse af et spørgeskema, arrangering af et borgermøde samt i overvejelser omkring undersøgelsens metode og design og analysen af data. Analysen af data pegede på en række vigtige betingelser for at øge de unges trivsel, og de unges ønsker om social samhørighed, social støtte og åben kommunikation, samt fritidsaktiviteter. Desuden udtrykte de unge ønsker om muligheder for rådgivning, samt bedre muligheder for arbejde og uddannelse lokalt. Manglende deltagelse blev begrundet af de unge med manglende erfaring, støtte, færdigheder og selvtillid og manglende synlig ledelse og initiativ blandt de voksne.

Forfatter: Peter Berliner; Sandrine Fanous ; Laila Wattar **Type:** Article | Artikel **Årstal:** 2010 **Emner:** Unge; Deltagelse; Inuit **Titel på tidsskrift:** Psyke og Logos **Volume på tidsskrift:** 31 **Nummer på tidsskrift:** 1 **ISSN nummer:** 0107-1211

Consultancy | Rådgivning - peer review > Contribution to professional statement | Bidrag til faglig redegørelse

Aasivissuit - Nipisat: inuit hunting ground between ice and sea

Forfatter: J. F. Jensen ; C. Andreasen ; P. Fleischer-Lyberth ; L. Løgstrup ; H. H. Poulsen ; O. R. Ólafsson ; A. C. Løventoft-Jessen ; S. Barr ; Morten Meldgaard **Type:** Contribution to professional statement | Bidrag til faglig redegørelse **Emner:** Aasivissuit; Nipisat; Inuit; Hunting **Afslutningsdato:** January 2017 **Rekvirent:** Qeqqata Municipality