



**GREENLAND
CENTRE FOR
HEALTH
RESEARCH**



2022

ANNUAL REPORT

Institute of Health and Nature
Ilisimatusarfik - University of Greenland

ANNUAL REPORT 2022 - GCHR

In this annual report, the advisory committee is presenting its scientific activities conducted in 2022. Greenland's Centre for Health Research aspires this annual report to serve as an overview of health research and to be an inspiration for future research projects in Greenland.

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Preface from the Head of the Institute



Anna Kleist Egede,
Head of the institute

It was in 2022 when we finally could shake the covid-19 restrictions off. With great knowledge of the past years, we have managed to conform and develop new ways to work, research and collaborate. Bearing the couple of years with necessary restrictions and health challenges in mind, Greenland Centre for Health Research is in a good place. In the last annual report for the center, I introduced and revealed some expansions and new collaborations. The center keeps the role as a vibrant, innovative, and method-focused center that is here to bring knowledge to our society in Greenland. One thing is certain, this center would not be as unique and strong without all the crucial internal and external collaborations we have arranged throughout the years.

At the 11th Nunamed that was held this year this was also clear for me to see. The center was recognized and perceived as an important unit. I was simply amazed by all the paths and links that was in connection to the work and research with starting point from our center. Furthermore, Michael Lynge Pedersen held a lecture with a positive assessment which now means we have a new professor at the center. We are very happy about this.

You can all be proud of this. I am. My ambition is that we do not forget one of the most important reasons for all our work. That we keep on using the research to make a change in people's life here in Greenland. One project I want to mention among other important projects is our newly started research project with two parallel foci about training and retention of nurses in education and working life and the influence of loss and grief on the retention and well-being among students and newly educated nurses caring for people. The aim in this project is to create sustainable work environments and to educate more nurses.

With kind regards

Anna Kleist Egede, Head of Institution of the Institute of Health and Nature

Letter from the Chair

Our vision at Greenland Center for Health Research is improving the health status in Greenland through initiation and coordination of health research.

Building local capacity through PhD programs and mentoring is important. We do this in collaboration with other Universities and our affiliated researchers, where we yearly organize PhD courses. Ilisimatusarfik is UArctic partner, and our Center is the host of the Thematic Network on Health and Well-being in the Arctic. You can read more about the network in this report.

The topic of the 11th NUNAMED conference in 2022 was Culture, health and a good life / Kulturi, peqqissusseq & inuunerissuunerl. NUNAMED is a conference on medicine and health in Greenland and the Arctic. The conference is important for sharing knowledge and has an ongoing impact on practice and research. GCHR and the Institute of Health and Nature continue to be partners in planning the next NUNAMED conference, which will take place in 2025.

The Lancet Commission on Arctic Health: Urgently Accelerating Indigenous Health and Well-being identifies the health and wellness challenges experienced by Arctic Indigenous peoples and plans to continue their work in 2023, where they also plan to publish a report.

The implementation of research results is a particularly important aspect for practice and communities, which is an aspect that GCHR will focus on in 2023. We will encourage researchers to ensure that they already in the planning phase of their project make a plan for the implementation of their results and that their research is focusing on topics and questions proposed by Greenland's healthcare system and communities.

Gert Mulvad, Chair, MD, GP Doctor h. c.



Gert Mulvad, Chair, MD,
GP Doctor h. c.

The Centre's history

On the 28th of May 2008, Greenland's Centre for Health Research (GCHR) was established. Back then a number of research-interested professionals working in Greenland's health care system had been discussing how a health research institute physically placed in Greenland was lacking.

The ambition was that such an institute could facilitate the transfer of competencies to Greenland, be the base for PhD students, provide affiliated researchers with a Greenlandic identity for their international research network, and provide evidence-based content for the nursing education, health professionals' training and perhaps at some point arctic MPH and PhD educations.

Since 2008, nine PhD students have graduated from the Centre and currently, eight PhD students are affiliated with the Centre.

Our vision

Improving the health status in Greenland through initiation and coordination of health research.

Our mission

- Increase coordination among research institutions
- Develop, exchanging, disseminating and applying scientific knowledge
- Create national and international networks • Building local capacity through PhD programs and mentoring
- Improving community involvement and local partnerships

Our objectives

The aim of the Centre is to enhance cooperation between researchers from other countries and health professionals in Greenland, to facilitate research cooperation within Greenland, and to facilitate the interaction of researchers from other countries with the Greenland community at large. The Centre is active in teaching at all levels from classroom teaching of nursing students to supervision of PhD students. In a longer perspective, the Centre will work for the establishment of data archive and archive of specimens collected in Greenland

Our partnerships & networks

The Centre works to forge links between research centres, independent scholars and students as well as health professionals in Greenland. GCHR is organised within the Institute of Nursing and Health Research at the University of Greenland.

We collaborated with the Greenland Institute of Natural Resources on a building project for the Centre. The Centre has signed a Memorandum of Understanding with the Canadian Institute for Circumpolar Health in Yellowknife (North West Territories) and the UArctic.

The Centre cooperates with Centre for Care Research at the Arctic University of Norway (UiT), Arctic Transatlantic Telehealth Research Network Furthermore, GCHR is a co-organisation of NUNAMED, part of Thematic Network on Health and Well-being in the Arctic under the University of the Arctic, and a member of the Circumpolar Health Research Network.

Advisory Board

- Gert Mulvad, MD, GP, Dr. h.c. (Chairman)
- Anna Kleist Egede (Vice chairman) Head of institute - Institute of Health and Nature
- Berit Bjerre Handberg, Chief physician - Board of Health and Prevention
- Sten Lund, Research coordinator at Department of Research and Environment
- Henrik L. Hansen, National Doctor at the national doctor's Office
- Lene Seibæk, Professor - Institute of Nursing and Health Science
- Appointed: Michael L. Pedersen, MD, GP, PhD, Dr. Med. - Greenland Centre for Health Research

Researchers

- Anders Koch, MD, PhD, Professor, MPH
- Aviaaja L. Hauptmann, PhD, Adjunct
- Birgit Vollmer-Larsen Nicklasen, Adjunct
- Birgitte Hamann Laustsen, PhD
- Christina VL Larsen, PhD, cand.scient.- soc., Professor
- Carsten Juul Jensen, PhD, Adjunct
- Eva C. Bonefeld-Jørgensen, PhD, Professor,
- Gert Mulvad, MD, GP, Doctor h.c.
- Ingelise Olesen, Research Coordinator
- Jette Marcussen, Postdoc
- Karen Bjørn Mortensen, MD, PhD
- Karsten Rex, MD, GP, PhD
- Lene Seibæk, PhD, RN, Professor
- Lise Hounsgaard, PhD, RN, Senior Researcher
- Marie Balslev Backe, PhD, Research Coordinator SDCG
- Marit E. Jørgensen, MD, PhD, Professor
- Michael Lyng Pedersen, MD, GP, PhD, Dr. Med. Associate Professor
- Nils Skovgaard PhD
- Preben Homøe, MD, PhD, Dr. Med., Professor
- Ruth Montgomery, DrPH
- Stig Andersen, MD, PhD, PGCME, Clinical Professor, Department Head
- Tenna Jensen, PhD, Associate Professor
- Tine Aagaard, PhD, Senior Researcher
- Trine Jul Larsen, BScN & MSc Public Health, PhD
- Sonja Sørensen, Research Assistant
- Stine Byberg, PhD
- Ninna Senftleber, Postdoc PhD students

PhD Students

- Anna Maria Anderson, MD
- Christine Ingemann, BScN & (Res)MSc Global Health
- Hjalte Erichsen Larsen, MD
- Ivalu Katajavaara Seidler, Cand.Scient.San.Publ , PhD student
- Julie Flyger Holflod, Cand.Scient.San.Publ , PhD student
- Maja Nielsen, MScPH / Cand.Scient.San.Publ, PhD student
- Mette M. Schlütter, MA Anthropology
- Mie Møller, MD
- Nadja Albertsen, MD
- Nick Duelund, MD
- Paneeraq Noahsen, MD
- Mads Mose Jensen, MD
- Marie Mathilde Bjerg Christensen, MD

PhD enrolment at University of Greenland

The aim of the PhD education is to qualify students to perform research, development, and instructional tasks, and to transmit scientific problems and issues in the Arctic. The PhD School at Ilisimatusarfik/University of Greenland offers international research education in three different programs:

- 1) Arctic Studies - Health and Social Conditions
- 2) Arctic Studies - Pedagogy and the Science of Education
- 3) Arctic Studies - Culture, Language and Social Conditions.

All PhD students must be assigned to one of these programs. Further, it is possible to make partnership agreements between the PhD School and other research institutions and foreign universities e.g. regarding double enrolment (double /joint degree). The application rules and form to apply for enrolment as a PhD student at Ilisimatusarfik are available at the university website www.uni.gl. Please feel free to contact the PhD school at phd@uni.gl or chair of the PhD Committee, Institute for Health and Nature, at Ilisimatusarfik Lene Seibæk lese@uni.gl

PhD Committee

The PhD committee of Institute for Health and Nature at Ilisimatusarfik consists of:

- Lene Seibæk, professor, PhD, Institute of Health and Nature, Ilisimatusarfik & senior researcher at Aarhus University Hospital (chair)
- Aviaja Lyberth Hauptmann, PhD, postdoc., Institute of Health and Nature, Ilisimatusarfik
- Bodil H Blix, professor, PhD, Department of Health and Care Sciences, The Arctic University of Norway (UiT)
- Stig Andersen, professor, PhD, senior consultant, Arctic Health Research Centre, Aalborg University & Greenland Centre for Health Research

COLLABORATIVE RELATIONSHIPS



Centre activities 2022

Change of institute name

On 17 March 2022, a reception was held on the occasion of the Department of Nursing and Health Sciences being expanded with a natural science area. At the same time, the Institute changed the name so it from now on will be called INSTITUTE OF HEALTH AND NATURE

Head of institute Anna Kleist Egede said the following: "We have been looking forward to today. We have now reached the point where it has become relevant for us to expand the Institute, and get ready to establish a natural science education at bachelor's level.

The education has not yet been funded, but Aage V. Jensen's foundation has granted 10 million. DKK so that we, with Aviaja Lyberth Hauptmann as pioneer, can begin work on realizing the biology education. - It really is a big day for us at Ilisimatusarfik.

We are surrounded by magnificent nature, which we have a special relationship with and often associate with strong values and with our health and well-being. Therefore, it also means a lot to me that we work hard to establish a biology education that is based on the values and culture we live in, in our bodies, our minds and our nature."



Birgitte Hamann Laustsen defended her PhD: Occupational asthma and allergy in the Greenlandic fish processing industry.

On 27th June 2022 at 14 birgitte Hamann Laustsen defended her PhD with the title: Occupational asthma and allergy in the Greenlandic fish processing industry. Joint degree between Aalborg University and Ilisimatusarfik. Her PhD defence took place at Aalborg University and was live streamed to Ilisimatusarfik.

PhD supervisor: PhD Jakob Hjort Bønløkke, MD Aalborg University, Denmark Assistant

PhD supervisors: Prof. Emeritus Øyvind Omland Aalborg University, Denmark

PhD Else Toft Würtz Aarhus University Hospital, Denmark Prof.

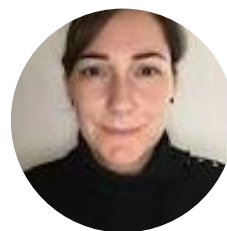
Martin Miller University of Birmingham, UK PhD, DrSci

Michael Lynge Pedersen, MD, GP University of Greenland, Greenland

PhD committee: Professor Lene Seibæk (chair) University of Greenland, Greenland Professor

Monika Raulf University of Bochum, Germany

Researcher Randi Jacobsen Bertelsen University of Bergen, Norway



Centre activities 2022

PhD course on 'Arctic Community Perspectives on Covid-19: collaboration, methodology and lessons learned' at Ilisimatusarfik – University of Greenland

In connection with the 11th NUNAMED conference 2022, we held a 2-day PhD course at the Greenland Centre for Health Research, Institute for Health and Nature at Ilisimatusarfik – University of Greenland. This course was organized together with Centre for Public Health in Greenland (National Institute for Public Health, University of Southern Denmark) and the UArctic thematic network on Health and Well-being in the Arctic.

There was a total of 20 participants on the course. The participants came from Canada, United States, Denmark, Norway, and Greenland. Only two students were not able to travel, but they tuned in on the course via our virtual platform.

The course focused on diverse community perspectives from across the Arctic including methodological perspectives on conducting case studies, applying a strength-based theoretical framework, and bridging Indigenous Sciences with Western Sciences when doing health research in the Arctic. Further the course brought together experts and knowledge holders in the field of circumpolar health research to talk about lessons learned during the pandemic and opportunities for collaboration across the Arctic



Source:UArctic - University of the Arctic - UArctic 2021

11th NUNAMED – the Greenlandic medical conference

GCHR organised together with the Danish Greenlandic Medical Association, Peqqissaasut Kattuffiat, and Grønlands Lægekredsforening the 11th NUNAMED conference in Nuuk. This year's conference had the title "Culture, health & good life" and was again a great success.

We had more than 330 participants, nine keynotes, 35 thematic sessions, six workshops and 43 posters. The conference was in Greenlandic, Danish and English, while translators were provided during the plenary sessions. We are very much looking forward to the 12th NUNAMED on the 3rd to 5th October 2025.



2022 Arctic Circle Assembly

The 2022 Arctic Circle Assembly was held with over 2000 participants and consisted of 200 sessions, Receptions and other Networking Events. Speakers included H.E. Rt Hon. Mary Simon, Governor General of Canada; H.E. Alar Karis, President of the Republic of Estonia; H.R.H. Haakon, Crown Prince of Norway; H.E. Múte B. Egede, Prime Minister of Greenland; Admiral Rob Bauer, Chair of the Military Committee, NATO.



Source: 2022 Arctic Circle Assembly

BScN, MSc, RN, Trine Jul Larsen: Diabetic eye disease in Greenland. Ilisimatusarfik.

On Wednesday 28 September 2022, Trine Jul Larsen from the Department of Health & Nature stood in front of a full auditorium and defended her PhD thesis with the title: "Diabetic eye disease in Greenland"

Trine is thus the second person ever with Greenlandic origin to defend her thesis at the Institute of Health and Nature on Ilisimatusarfik.

In her thesis, Trine investigated the incidence of diabetes in Greenland. Diabetes has increased over the past decades, and the population is thus at increased risk of developing diabetic late complications, such as diabetic retinopathy.

In this connection, Trine developed an artificial intelligence model that could specifically be used to screen the Greenlandic population. In this connection, Trine Jul Larsen has also investigated possible factors such as ethnicity and genetic factors.

Professor Lene Seibæk | Institute of Health & Nature, Ilisimatusarfik
Consultant doctor, head of research
Ann Ragnhild Broderstad | University of Tromsø

Professor, consultant doctor Jakob Grauslund | University of Southern Denmark



INAUGURAL LECTURE: MICHAEL LYNGE PEDERSEN

On 29 September, Michael Lynge Pedersen gave his inaugural lecture as professor at the Institute of Health & Nature - and he did so with the lecture "Data Driven Diabetes Care - What Have We Learned and Where Are We Going?".

Michael Lynge Pedersen graduated as a medical doctor from Aarhus University in 1997. He has subsequently written a PhD on Diabetes in Greenland in 2011, and published a doctoral dissertation on the same topic, both from Aarhus University in 2019.

Michael Lynge Pedersen has contributed to the development of Greenland's health care system with his 25 years as a doctor in Greenland. Since 2008, he has been the leader of first a national diabetes project for 3 years, then a national lifestyle initiative in the Greenlandic health care system for 10 years until now, where he leads Steno Diabetes Center Greenland. Alongside his clinical work, he has contributed to research and teaching at many levels.



Resignation lecture

On Tuesday 4th October, a resignation lecture was held by Professor Lise Hounsgaard. The evening's program was established as a symposium, where several current and former colleagues presented their research projects and at the same time gave greetings to Lise on the way.

Lise's own lecture was titled "A historical perspective on the Institute's growth based on Lise Hounsgaard's work" Here Lise took us all on a journey through time where she put the Institute's current position in perspective to the way to get here. Lise has contributed knowledge and great commitment in connection with the development of the Institute for Health and Nature, without her we would not be where we are now.



Coming activities in 2023

THESE FIVE RESEARCHERS WILL BATTLE IN A NEW PHD CONTEST

Sustainable cruise ship tourism, children's problems with eyesight, and urban development in Tasiilaq are some of the topics the researchers will present at the big show in Nuuk

The finalists in the new science dissemination contest Paasisavut 2023 have been found. Five researchers were chosen, and three of them are associated with Ilisimatusarfik, University of Greenland.

Paasisavut is a new competition for PhD students researching topics related to Greenland. At a live show in March, the researchers will compete in disseminating their research to the Greenlandic population. The winner will be the one who can speak in a way that everyone understands. The show will be broadcast at KNR, the Greenlandic Broadcast Corporation, and the winner will receive a prize of DKK 25,000 - sponsored by Brugseni.

"Now we hope that Paasisavut will help the five finalists reach a broader audience", says Anna-Sofie Skjervedal, head of the secretariat at Arctic Hub.

The five finalists come from very different branches of science. One has researched nitrate in the Greenlandic tundra, another how to make cruise ship tourism sustainable, a third has investigated how to prevent problems with eyesight in Greenlandic children, a fourth has studied urban development in the town of Tasiilaq, and the fifth finalist has looked into what it means to live a good life in Greenland. They have one thing in common: their ability to talk engagingly about their research.

Ole Ellekrog, Planned by Arctic Hub

PhD course

GCHR will again this year organize a PhD course in June 2023. However, the topics and details of the course are still being discussed.

The courses will be taught and facilitated by:

Professor Christina Viskum Lytken Larsen
Professor Siv Kvernmo
Professor Tine Tjørnhøj-Thomsen

Christine Ingemann, PhD student

Coming activities in 2023

Arctic network meeting – autumn 2023

The UArctic Thematic Network on Health and Well-being in the Arctic is currently looking into the possibility of organizing a network meeting for the members of their thematic network. More information on this can be found on the thematic networks website in spring 2023 <https://www.uarctic.org/activities/thematic-networks/health-and-well-being-in-the-arctic/>

In connection with this the network is also planning on launching a mentorship program and phd courses.

Health and Well-being in the Arctic – UArctic Thematic Network

The network bases its research and higher education activities on the **contemporary needs and priorities of the circumpolar regions** and aims to promote a **transdisciplinary approach** to improve social circumstances for population health as well as delivery of health care and social services in the Arctic.

Main Activities

- Promoting research projects and education on Arctic health via joint international research projects and PhD courses in Arctic health (graduate level)
- Writing joint publications and research funding applications
- Advocating the Arctic health research needs via participating in various high level Working groups



NORRUS-AGE project

CLINF-Green project

PhD course 2022

Partner institutions

Aarhus University	University of Alaska Anchorage
Finnish Meteorological Institute	University of Alaska Fairbanks
University of Greenland	University of Alberta
Luleå University of Technology	University of Copenhagen
Stefansson Arctic Institute	University of Lapland
The Arctic University of Norway	University of Oulu
Umeå University	University of Southern Maine
University of Akureyri	.DIN USI



LEAD Dr. Gert Mulvad,
University of Greenland



VICE-LEAD Dr. Anastasia
Emelyanova, University of Oulu



VICE-LEAD Dr. Anna Rönkä,
University of Oulu



VICE-LEAD Christine Ingemann,
University of Greenland

Current and Planned Activities for 2023

- Arctic Pandemics: COVID-19 and Other Pandemic Experiences and Lessons Learnt Special Issue of Arctic Yearbook, 2022-2023
- CLINF-GREEN project funded by Nordforsk, 2022-2023
- Developing the MA course "One Health in Northern Communities and Ecosystems" funded by UArctic, 2021-2023
- Participation in the Lancet Commission on Arctic Health: Accelerating Indigenous Health and Well-being, starting February 10-13, 2020, Dartmouth College, USA, ongoing
- AMAP Human Health group has online meetings for preparing the next assessment in 2021, ongoing
- Research visits and exchanges, ongoing
- Collaboration with other UArctic Thematic Networks such as the Working in the Arctic network, Ageing and Gender in the Arctic, and the Northern Nursing Education
- Face-to-face meetings adjoint to the Arctic-wide conferences (UArctic Congress, ASSW, ICCH, Nunamed, Arctic Circle, Arctic Frontiers, and others)

<https://www.uarctic.org/activities/thematic-networks/health-and-well-being-in-the-arctic/>



News from researchers and research groups

Syphilis in Greenland

In the 1970s and 1980s, two major epidemics of syphilis were seen in Greenland, where between 1000 and 1500 per 100,000 people were infected. However, focused efforts led to a sharp reduction in the number of cases, so that for many years only between 0 and one case per year was observed in Greenland.

This changed after 2011, when the incidence of syphilis began to rise again from 5.3 cases per 100,000 in 2011 to 85.3 cases per 100,000 in 2014. Despite targeted efforts, the number of cases continued to rise in the following years. In order to better understand the syphilis epidemic, a nationwide register-based study of the incidence of syphilis in Greenland was carried out from 2015 to 2019.

Syphilis cases during this period were identified by reviewing electronic medical records in the 'Cosmic' system and laboratory results in three different datasets: reports to the National Board of Health, electronic prescriptions for benzathine penicillin used specifically for syphilis treatment, and the national laboratory database BCC-lab.

We found that the incidence (number of new cases) of syphilis in Greenland increased from 107.4 to 246.8 cases per 100,000 inhabitants from 2015 to 2019. The incidence increased in both sexes and in almost all regions, although with large regional differences. In particular, the age group 15 to 29 years showed a significant increase in incidence in 2018 and 2019. More women than men were infected (245 female cases against 178 male cases).

Overall, the study showed that the burden of syphilis in Greenland is high and increasing, primarily in the age group 15 to 29 years. A higher incidence was found among women than among men, which primarily indicates heterosexual transmission, as is seen for other sexually transmitted infections in Greenland. This is similar to the conditions in other parts of the Arctic (northern Canada and Alaska), where not only syphilis, but also other sexually transmitted infections, are frequent. The reasons for the increase in syphilis in Greenland are unknown, but the findings emphasize the importance of the campaigns in the sexual health field that are undertaken in Greenland.

Source: Andersen, M.W. Johansen, M.B. Bjorn-Mortensen, K. Pedersen, M.L. Jensen, J.S. & Koch, A. Syphilis in Greenland 2015-2019. *Sex Transm Dis* 2022 Mar 1;49(3):190-196. doi: 10.1097/OLQ.0000000000001571.



Anders Koch, MD,
PhD, Professor,
MPH

Heart disease among children and young adults in Greenland - a nationwide cohort study

The incidence of heart disease in general and congenital heart disease among Inuit in Greenland (GL) and Denmark (DK) are unknown. The aim of this study was to estimate incidence rates (IR) of heart disease in general and congenital heart disease among Inuit children and adolescents in Greenland and Denmark compared to non-Inuit in the same countries.

A register-based nationwide cohort was formed with all persons residing in Greenland and Denmark followed from birth to the age of 40 years in the period 1989-2014. Ethnicity was considered Inuit/mixed if at least one parent was born in Greenland. Information on admissions for heart disease was obtained from national inpatient registries using ICD-8 and ICD-10 codes.

The study showed that the IR of heart disease was generally lower among individuals living in Greenland compared to those living in Denmark, [73.3 GL (95% confidence interval (CI) 68.1 to 79.0)] vs [88.1 DK (95% CI 87.4 to 88.8)], whereas the IR of congenital heart disease was almost the same in the two countries [IR 34.4 GL (95% CI 30.9 to 38.4) vs. IR 34.7 DK (95% CI 34.2 to 35.1)]. Being of Inuit/mixed ethnicity was associated with an increased risk of both HD and CHD compared with non-Inuit in Greenland and Denmark [adjusted hazard ratio HD 2.1 GL (95% CI 1.3 to 3.4)] and CHD [2.9GL (95% CI 1.3 to 6.4)].

Overall, studies showed that heart disease in general is lower in individuals living in Greenland compared to individuals living in Denmark, while the frequency of congenital heart disease was almost the same for both countries. However, the risk of both heart disease in general and congenital heart disease was higher among people of Inuit/mixed ethnicity compared to non-Inuit in both countries, suggesting that ethnicity plays a role in the risk of heart disease among children and young adults.

Source: Tindborg, M. Koch, A. Andersson, M. Juul, K. Geisler, U.W. Søborg, B. & Michelsen, S.W. Heart disease among Greenlandic children and young adults: a nationwide study. *Int J Epidemiology* 2022 Oct 13;51(5):1568-1580. doi: 10.1093/ije/dyac024

News from researchers and research groups

New team members

In 2022 three new members joined Aviaja's team. Liv Mejer Larsen is the new program coordinator for the process to establish a biology program at the Institute of Health and Nature. Vivi Vold and Mads Bjørnsen are PhD fellows. Mads is working on the GASTROPHAGY project looking into how the eating of intestines and microorganisms from intestines impact the gut microbiota. Mads' project is a collaboration with the Globe Institute and Faculty of Health at the University of Copenhagen. Vivi's project SILAMI NIPAATSUMI is looking at the importance of Inuit competencies and cultural understanding in building STEM education in Greenland. Vivi's project is partly funded by the NSF in collaboration with colleagues at UC Davis.



Aviaja Lyberth Hauptmann, Adjunct

Aviaja Lyberth Hauptmann, Adjunct

Health Behavior in School-aged Children (HBSC Greenland)

HBSC Greenland is the only national survey of school-children in Greenland and is thus a smaller sibling to the population survey among adults. HBSC Greenland is part of the international HBSC study that started in Northern Europe in the mid-1980s.

Today, the HBSC study is a WHO Europe collaboration center and a large research network with participation from more than 50 countries and regions in Europe, as well as in Israel and Canada is behind the study. In addition, there are collaborative projects with countries such as Australia, Brazil and China.

The HBSC survey collects data every 4 years with a questionnaire for students in grades 5-10. Through the schoolchildren's own answers, the study sheds light on their health and health behavior in a wide range of areas in the social context the children are in: In the family, at school and among their peers.

The purpose of the HBSC study is partly to monitor and follow the health and health behavior of children and young people in a wide range of areas, partly to stimulate health-promoting efforts among schoolchildren and, through research, to contribute to knowledge about the status of and development trends in children and young people's health and health behavior both nationally and internationally.

In Greenland, feedback is provided after each survey as reports to all participating schools, to the individual municipalities and through a national report. Greenlandic data is also included in the international report published by WHO after each study.

The national report from the 2022 survey is expected to be published in early 2023.



Birgit Vollmer-Larsen Nicklasen, Adjunct

Birgit Vollmer-Larsen Nicklasen, Adjunct

News from researchers and research groups

Innuttaasut Peqqissusiannik Ilisimatusarfik/ Centre for Public Health in Greenland

About us

The Centre for Public Health in Greenland is part of the National Institute of Public Health (NIPH) and has branches in both Nuuk and Copenhagen. The center has 19 permanent employees and 4 student assistants with different backgrounds.

The centre works closely with the Government of Greenland and the Greenlandic municipalities to ensure culturally relevant solutions to major health challenges. Especially in recent years, the centre has entered into strategic partnerships at international, national and municipal level to promote more dialogue-based research approach based on local strengths and values in Greenlandic culture when health promotion initiatives and interventions are to be developed. www.folkesundhed.gl

Ataatsimoorluta Aalasa

A project focused on well-being promotion and inclusive communities under the Sports Confederation of Greenland (GIF) and Unicef. As a knowledge partner, the centre contributes with follow-up research and evaluation efforts. In 2022, the project's project was carried out in Qeqqata Municipality. Read more at: https://www.gif.gl/aalasa_dk/ataatsimoorluta-aalasa/

Kinguaariit Inuunerissut Camps: Pilot project on well-being camps across generations. Read more at: <https://da.uni.gl/forskning/kinguaariit-inuunerissut.aspx>

Study of families and professionals' views on opportunities and limitations in relation to giving birth outside of your community

In 2022, we initiated a study on the possibilities and limitations of access to giving birth in different communities in Greenland that are seen from the perspective of both professionals and pregnant families. The study is commissioned by the Ministry of Health and is expected to be completed in June 2023.

Nursing Home Study

Nationwide study, which was conducted and completed in 2022. The study sheds light on several conditions in the country's nursing homes from the perspective of managers, nursing staff and residents. There is a focus on quality of life, values, education and knowledge sharing, medication management and dementia – themes that are important in all nursing homes, but which look different in practice from one nursing home to another. The report can be read on www.folkesundhed.gl

Researchers
from NIPH
associated with
GCHR



Christina VL Larsen,
PhD, cand.scient.-
soc., Professor



Tenna Jensen, PhD,
Associate Professor



Ingelise Olesen,
Research
Coordinator



Sonja Sørensen,
Research
Assistant

News from researchers and research groups

Evaluation of "Early Intervention for pregnant families" 2021 - A qualitative study of the continued implementation of the program with a focus on local anchoring and cultural relevance in Greenland.

Since 2007, "Early Intervention for pregnant families" has been a regular part of the preventive efforts targeted at families in a vulnerable position. The program therefore plays a crucial role in promoting healthy childhoods in Greenland. The report makes a number of recommendations aimed partly at the organisation of the effort and partly at the cultural relevance of the effort. The report can be read on www.folkesundhed.gl

The Qeqqata Model

With inspiration from Iceland, Qeqqata Kommunia, Paarisa and the Center for Public Health in Greenland have entered into a partnership to promote well-being and prevent substance and tobacco use among schoolchildren in Qeqqata Kommunia. The partnership was later named the "Qeqqata Model". The initial phase of this partnership was completed at the end of 2022 and the many experiences and efforts developed in the partnership are gathered in a new report, which will be published in early 2023 at www.folkesundhed.gl.

Suicide prevention

In 2022, in collaboration with Paarisa, we have developed and implemented a Greenlandic model for instructor training in suicide prevention and held suicide prevention courses in Kommune Kujalleq and Avannaata Kommunia, as well as conducted network meetings with course participants in both municipalities. As part of this work, we have held a workshop focusing on the exchange of experience between Alaska and Greenland at this year's NUNA MED conference.

Sustained effect of treatment

Project with Allorfik focused on what characterizes an effective treatment and a successful recovery from a problematic use of alcohol. In 2022, a study was carried out of therapists' and group leaders' experience of which elements in treatment make a difference to whether citizens succeed in treatment. The project will continue in 2023.

Feasibility study in the fishing industry

In collaboration with Royal Greenland, Greenland Sports Association (GIF) and Ilisimatusarfik, we have carried out a feasibility study in the fishing industry. The study investigates how physical health is referred to, understood, and practiced in Royal Greenland. It is intended that the preliminary study can contribute with useful knowledge to Royal Greenland in particular, but in general to production companies in Greenland. The preliminary study will feed into the development of a PhD project in collaboration with Royal Greenland and GIF.

Nipilik ('With sound')

Project on hearing loss and effect of bone-anchored hearing aids among children. The project is a collaboration between us, Queen Ingrid's Hospital in Nuuk and Rigshospitalet in Copenhagen. We are responsible for carrying out a qualitative study of everyday life with a hearing aid and how families and children experience the hearing aid.



News from researchers and research groups

Research on working and studying life in nursing

In 2022, I have continued and completed my previous research on the working lives of newly qualified nurses and social nurses in a Danish hospital context. These studies have parallels to my research in Greenland, which is unfolded in the research update of Jette Marcussen (p.).



Carsten Juul
Jensen, PhD,
Adjunct

This is an action research project that aims to explore the feasibility of establishing and implementing well-being promoting activities for nursing students and newly qualified nurses.

Employees from the Department of Health and Nature at Ilisimatusarfik and the Greenlandic Health Service, exploratively study the condition of work and study life at regional hospitals in Greenland. In autumn 2022, project workers have conducted about 60 hours of participant observations with 17 follow-up interviews in three of the five region hospitals. The work of data production and analysis will continue in 2023. Nursing students, newly qualified nurses, nurses in short as well as long-term positions, clinical supervisors and managers taught on everyday life in health care in Greenland. Researchers engaged in the project develop knowledge about how to strengthen communities of health professionals, from service staff to management, how to ensure students thrive, staff are retained, and about how qualified nurses can be supported to flourish. This is despite turbulent working conditions with shortages of staff to service patients with all manner of illnesses from cities and inaccessible settlements. It is strong communities that make something that seems almost impossible work be possible.

Carsten Juul Jensen, Jette Marcussen, Anna Kleist Egede, Silvia Isidor, Louise Lennart Olesen, Naduk Eriksen, Pauline Olesen, Annette Maahr Hansen, Lene Seibæk

Textbook for nursing students

An activity that is in line with the action research project is publication of a textbook for nursing students in both the Greenlandic and Danish language. The existing literature is mostly based on cases from Danish health care system. However, these examples are not necessarily, comparable to conditions that nursing students encounter at clinical placements. Moreover, education exclusively provided in Danish does not meet the needs of the breadth of the student body or clinical demands. In this way this textbook offers pedagogical and clinical advantages by providing equitable access to education (and therefore also to future care) where students (and patients) from settlements outside Nuuk have not been used to speak and read the language of education, Danish.

News from researchers and research groups

Research and Teaching at Centre for Arctic Health & Molecular Epidemiology 2022 Researchers at Centre for Arctic Health & Molecular Epidemiology (CAH-ME)

Teaching and research training

The course “Arctic Health” for medical candidate students (optional) at Aarhus University (AU) offered one-two times every year in more than 10 year. Again, the course was held twice in 2022. There is a great interest in the course among the medical students, so the class is full every semester (30 students). Professor Eva Cecilie Bonefeld-Jørgensen is course responsible, teaching at the course involve an array of good colleague in Denmark and Greenland.

At the Center for Arctic health & Molecular Epidemiology (CAH-ME), AU, Professor Eva Cecilie Bonefeld-Jørgensen coordinate at the Department of Public Health, the self-organized project course project / clinical course outside AU for medical candidate student at 3rd semester. During 2022, eight medical student selected to have a clinic training in Greenland and two in the Faroe Islands. Clinical colleagues at the hospitals gave good guidance during the clinical stay.

Furthermore, during 2022 five medical students selected to conduct the individual thesis in the 4th semester for medical candidate students at the CAHME. Together with good colleagues in Greenland and Denmark, Professor Eva Cecilie Bonefeld-Jørgensen coordinated and (co)supervised these students.

The Greenlandic BioBank at the Center for Arctic Health & Molecular Epidemiology, Department for Public Health (CAHME-IFF)

Status for the steering group of the Greenlandic Biobank (GRL BioBank): There is a 5-person steering group for the Biobank with members from CAH-ME, Department of Public Health, AU, the University of Greenland, and the Chief Medical Office in Greenland. <https://cah.au.dk/biobank-danish>

The GRL Biobank includes samples from the 1980-ties such as blood, urine, organ tissues, hair, and nails from previously projects carried out at CAHME including the samples taken to the biological bank in connection with the ACCEPT Cohort project.

A cataloged overview gives the historical sample remains found in the biological bank. Possible interest in applying for samples for research can be sent to the responsible GRL BioBank chair Professor Eva Cecilie Bonefeld-Jørgensen, Centre for Arctic Health & Molecular Epidemiology, Department of Public Health, Aarhus University, Bartholins Allé 2, 8000 Aarhus.

RESEARCH AT CENTRE FOR ARCTIC HEALTH & MOLECULAR EPIDEMIOLOGY 2022 Update on the Greenlandic geographic Birth Cohort ACCEPT 2022

The ACCEPT birth cohort was established during 2010-2015 in a collaboration between the Greenlandic Health Care, Greenland Centre for Health Research, Ilisimatusarfik and CAH-ME, Aarhus University.

ACCEPT includes approximately 600 pregnant Inuit women and their children from five regions (North, Disko Bay, West, South and East) with a participation reflecting the population density. The pregnant women belongings were set to where they had lived longest (more than 50% of their life).



Eva C. Bonefeld-Jørgensen, PhD, Professor,

News from researchers and research groups

BioSund-ACCEPT includes 101 ACCEPT families (mother, father, and child) with follow-up on the ACCEPT including biomonitoring and child health and development at 3-5 years of age, follow-up on the mother's lifestyle and health and also the father's data. During 2019 and 2020, we sampled questionnaires, blood, hair, nails and urine from 101 ACCEPT mothers, 76 fathers and their children (102) in Nuuk, Ilulissat and Sisimiut.

We published a paper on the BioSund-ACCEPT follow-up in 2022, in addition to the three publications published in 2021:

Persistent Organic Pollutant exposures among Greenlandic adults in relation to lifestyle and diet: new data from the ACCEPT cohort. Maria Wielsøe, Manhai Long, Rossana Bossi, Katrin Vorkamp & Eva Cecilie Bonefeld-Jørgensen. Science of the Total Environment, Volume 827, 25 June 2022, 154270, <https://doi.org/10.1016/j.scitotenv.2022.154270>

We (CAHME) held an Environmental Medicine session at the Nunamed 2022 conference September-October.

We (CAHME) presented The ACCEPT Birth cohort data and The BioSund-ACCEPT follow-up study at the NUNAMED conference:

https://cah.au.dk/fileadmin/cah/ACCEPT_and_BioSund_combined.pdf

The overall results from the ACCEPT Cohort and BioSund-ACCEPT studies 2022:

The ACCEPT COHORT & BioSund-ACCEPT dietary data: Most POPs correlated positively with age and the biomarker of marine food n-3/n-6 fatty acid ratio. The lipophilic POPs correlated positively with the percentage of life lived in Greenland, whereas few POPs correlated positively with BMI, income (personal and household), education, and alcohol intake.

The POPs generally associated positively with the intake of marine mammals, seabirds, and dried fish, while few POPs associated positively with Greenlandic fish intake. In contrast, POPs generally associated negatively with imported meat products intake.

Based on the data we recommend eating low at the marine food chain, many fish and eat alternately sea and land animals. The study findings may be of interest for future dietary recommendations in Greenland.

The BioSund-ACCEPT follow-up (mother and father): Median concentrations of POPs were 1.4-4.6 times higher in fathers than in mothers and differed by residential town with generally higher concentrations in Ilulissat compared to Sisimiut and Nuuk. For the first time, we report novel halogenated flame-retardants (HFRs) in human samples from Greenland. However, concentrations were low and only dechlorane plus (with its anti-isomer) was detected in >50% of the samples.

The BioSund-ACCEPT follow-up (child): The updated anthropometric data and blood pressure of Greenlandic preschool children and effects of maternal smoking during pregnancy shows that the prevalence of overweight and obesity was higher than previously reported and maternal smoking during pregnancy affected the child data.

We found a positive association between several persistent organochlorine pesticides and child behavior scores (Strength and Difficulties Questionnaire (SDQ)). In contrast, we found no consistent evidence of associations between polychlorinated biphenyls, perfluoroalkylated substances and heavy metals and problematic behavior. In summary, prenatal organochlorine pesticide, exposure might be associated with problematic behavior in 3-5 year old children.

News from researchers and research groups

The BioSund-ACCEPT follow-up is still ongoing. Currently, we are writing a manuscript on “Metal blood concentrations among Greenlandic adults in relation to lifestyle and diet: follow-up on the ACCEPT cohort” that we expect to publish in spring 2023. The overall conclusion is “The metal concentration differed by participant’s sex, residential town, n-3/n-6 FA ratio, and socio-economic factors. Furthermore, As, Hg, and Se associated positively with intake of traditional marine food, while we only found few other associations between food intake and metal concentration.

Plans for future BioSund-ACCEPT-COHORT studies: We are planning to elucidate the data for exposure to environmental chemicals and effects on child immune defense/infection frequency, child motoric capacities and preschool performance.

Project ACCEPT: “Dioxin-like activity in pregnant women and indices of fetal growth-The ACCEPT Birth Cohort”

The combined dioxin-like activity induced by lipophilic POPs was detected in > 87% of serum samples of Greenlandic pregnant women. The serum dioxin-like activity positively correlated with the marine food intake biomarker n-3/n-6 ratio. Women giving birth to infants with low birth weight (<2500 g) and length (<50 cm) had higher serum dioxin-like activity. Significant inverse associations between maternal serum dioxin-like activity and fetal growth indices were found for previous smokers.

The study suggested that Greenlandic Inuit pregnant women exposure to dioxin-like compounds through traditional marine food can adversely influence the fetal growth via induced Aryl-hydrocarbon-receptor (AhR) activity. Smoking might have modifying effects. Project MIL&ALLEGY: “Is exposure to highly non-degradable environmental contaminants a risk of developing allergies and respiratory diseases?”

Currently we (in collaboration with Chief Physician Jakob Hjort Bønløkke, Aalborg) are conducting statistical data elucidation on the project. The project aims to investigate the relationship between exposure to Persistent Organic Pollutants (POP) and the risk of allergies and respiratory diseases among 372 Greenlandic adults (16-68 years old).

We are conducting the preliminary data evaluation showing that the levels are higher in men than women are, and increasing with age. This is in accordance with previously reported data in other studies.

Furthermore, the measured levels of both PCB, OCP and PFAS were also significantly higher than the most recently reported levels in Greenland in the same area, period, age and sex.

The statistical data evaluation on the relationship between exposure to POPs and risk of allergy and respiratory diseases is ongoing. We expect to publish the results in scientific journals 2023.

Project “Levels and Temporal Trend of Phthalates in the Greenlandic Population”

This ongoing project aims to analyze the urinary concentration and profile of 12 phthalates of Greenlandic adults and evaluate the temporal trend of phthalates in the Greenlandic population. The study includes samples from 507 women and 93 men in the range of 19-64 years of age collected in 2000-2015.

The measurement of urinary concentration of the phthalates was finished in the end of 2022. The data management and statistical analysis is ongoing. We expect to finish the project in May 2023 publishing the results in scientific journals in 2023.

News from researchers and research groups

Well-being, education, and retention in the Greenlandic nursing profession

In September 2022, the Institute of Health and Nature started a cooperation of two research projects lead by Jette Marcussen and Carsten Juul Jensen in cooperation with employed in the institute and at DIS to develop knowledge about well-being, education and retention of the nursing profession.



Jette Marcussen,
Postdoc

The lack of nurses in the Greenlandic health care system is a large and multi-faceted problem, and the Greenlandic society needs education and retention of more nurses to promote the health in the entire country. Loss, grief and trauma are part of the Greenlandic population's daily life. Research shows that nurses play a central role in the area of grief in Greenland, as they can identify and prevent problems related to loss, grief and trauma. At the same time, the nurses themselves experience that they have a barrier in providing care in relation to their own unprocessed losses and traumas.

The projects will explore and develop knowledge through several methods such as, action research, individual and focus group interviews, participant observations and surveys. The studies will be about the influence of trauma, loss, and grief on well-being, retention and need of support among students and newly educated nurses. In addition, the retention by establishing more clinical placements and developing activities to support the well-being of nursing students and newly qualified nurses.

Well-being promoting activities will be developed in the projects targeted nursing students and newly educated nurses aimed on retention and will constitute preparation for testing subsequent interventions.

Jette Marcussen, Carsten Juul Jensen, Anna Kleist Egede, Silvia Isidor, Lene Seibæk

Personal experience of living with sucrose-intolerance and attitudes towards genetic research in Greenlander's perspective – A user study.

Via semi-structured focus group interviews and telephone interviews with Greenlanders in six cities, this user study investigated how Greenlandic people experience sucrose intolerance (SI) and how this influences their daily living. The study also investigated the attitudes to research in health and genetics in the general Greenlandic population. As part of a larger study this study also was aimed to investigate conditions, which may influence the feasibility of a planned study on metabolic effects of two short-term dietary interventions..

News from researchers and research groups

The preliminary data have identified that most of the 14 Greenlandic participants are influenced in their daily living having stomach issues, diarrhoea and pain and develop coping strategies such as staying home in security and some become anxious.

Some participants hope Greenlandic people will help each other by participating in health research. But it was also found that the participant, may participate because they feel a need to see a doctor. The project will be published in early spring 2023.

Jette Marcussen, Silvia Isidor, Lene Seibæk, Marit Eika Jørgensen, Ninna Senftleber

Patient involvement in Greenland hospital care

Via semi-structured research interviews with patients and health professionals along with field observations of bed-side care situations and interactions between health professionals and patients, we investigated in what way patient involvement can be understood and implemented in a Greenlandic hospital context.

We found that personal expectations, quality of hospital care, language skills, conditions around family support, and taboos concerning not being able to take care of themselves, significantly impacted patients' opportunities for involvement. We concluded that to ensure hospital-care provided in a real partnership with patients and families, it is crucial that 1) patient pathways are re-organized in a patient oriented approach, 2) health-professionals become aware of the patient perspective and develop skills for integrating this in clinical practice. The project has been completed with the end of 2022.

Lene Seibæk, Helle Mougard-Frederiksen & Lise Hounsgaard

Children with otitis media and their parents – Improving treatment efforts through parental involvement

The aim of this study is to develop and test parent-based initiatives for improved care and treatment of children with otitis media in terms of 1) implementation of sufficient care and treatment 2) cooperation, support and information to the affected children and their families.

The data collection, consisting in research interviews with parents from six different places in Greenland and the analyses of data have been completed. Currently, the dissemination of findings and development of new initiatives are ongoing.

Monica Nedergaard Ejsing, Malene Nøhr Demant, Preben Homøe, Jette Marcussen, Carsten Juul-Jensen, Ramon Gordon Jensen & Lene Seibæk



Lene Seibæk, PhD,
RN, Professor

News from researchers and research groups

Cardiometabolic research and activities in 2022

Our cardiometabolic research takes place in close collaboration between Steno Diabetes Center Greenland, the corresponding Steno centres in Copenhagen and Zealand, University of Copenhagen, and University of Aalborg.

Four PhD studies are ongoing in the fields of sleep apnea, monogenetic diabetes, heart failure, atrial fibrillation, thyroid disease, and diabetic neuropathy among Greenlanders. Trine Jul Larsen successfully defended her PhD on diabetic retinopathy in October 2022. Birgitte Laustsen successfully defended her PhD on lung disease in June 2022.

Steno Diabetes Center Greenland arranged a PhD course in statistics using R in Nuuk, March 2022. There is an ongoing focus on bringing back data collected in Greenland to relevant Greenlandic institutions to make data available for researchers locally. Many data are stored in Denmark, but due to the GDPR legislation, data can only be transferred to safe institutions like Statistics Greenland with extensive legal work.

Based on the population surveys of Greenland, genetic variants of great importance for the clinic were discovered in 2022. A genetic variant, known as p.G137S, that is present in nearly 30% of Greenlanders is linked to high cholesterol and an increased risk of cardiovascular disease. Consequently, 1st degree relatives to persons with high LDL cholesterol are now systematically offered lipid testing and, if needed, lipid lowering treatment.

The same team of researchers has discovered a new genetic variant in HNF1a that is responsible for close to 7% of all cases of diabetes in Greenland. People with this form of diabetes, caused by the high-impact genetic variant, may require special treatment, which will be possible through improved genetic screening of patients.

Postdoc Ninna Senftleber finished a cross-over dietary intervention comparing metabolic effects and intestinal microbiota after a traditional Greenlandic diet vs a western diet rich in sucrose and starch. The study was conducted among homozygous carriers of a sucrase-isomaltase variant and controls. The SI variant causes congenital sucrase-isomaltase deficiency, an inability to breakdown and absorb sucrose and starch (see figure). Preliminary results on food preferences were presented at the Nunamed conference in October 2022.



Marit Eika
Jørgensen,
professor



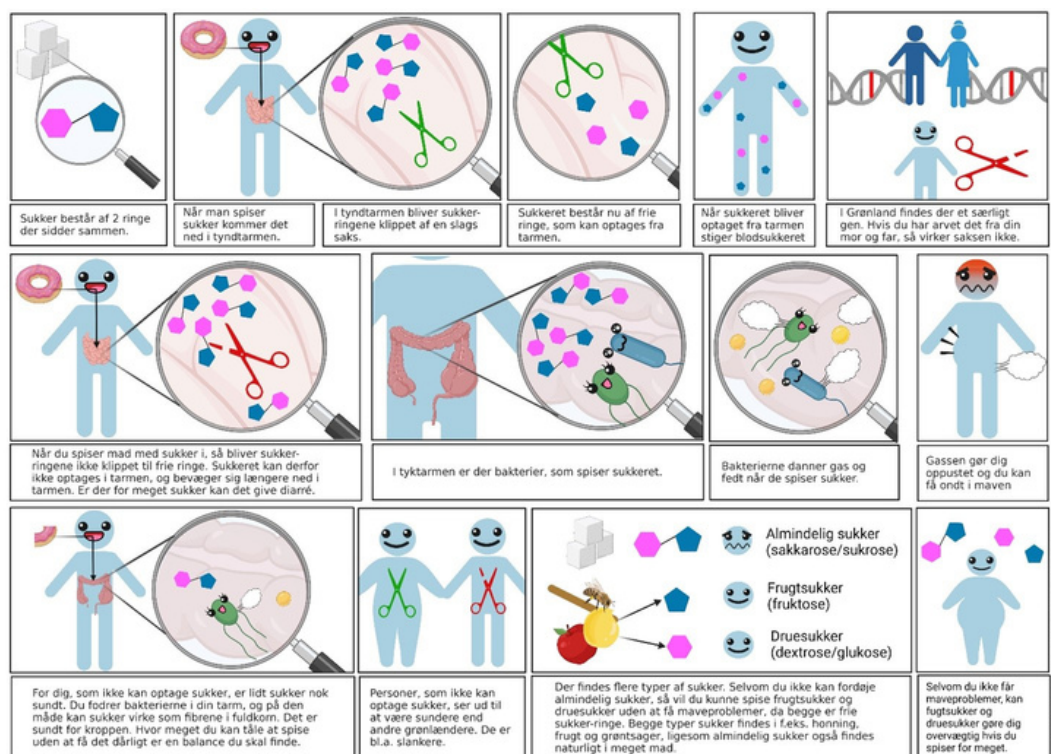
Michael Lynge
Pedersen,
professor

News from researchers and research groups

Based on register data within the health care system in Greenland, Steno Diabetes Center Greenland continuously publish data on several aspects of chronic disease epidemiology, health care performance, and quality of care in Greenland.

Finally, we recently received a grant from the Novo Nordisk Foundation for a randomised controlled study aiming to compare intensive multifactorial cardiovascular risk management vs standard care in type 1 diabetes for prevention of micro- and macrovascular complications.

Professor Marit Eika Jørgensen and Professor Michael Lynge Pedersen
Steno Diabetes Center Greenland, Ilisimatusarfik & University of Southern Denmark



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News from researchers and research groups

Updates on projects

In 2022 we have been involved in a qualitative collaboration project concerning “Children with otitis media and their parents – Improving treatment efforts through parental involvement” to examine the health care users experiences and suggestions to support and improve the health care system for children with recurrent otitis media and their families. This project is done in collaboration with prof Lene Seibæk, Monica Nedergaard Ejsing, Malene Nøhr Demant and Ramon G Jensen and is anchored at Greenland Centre for Health Research, Institute of Nursing and Health Research, Ilisimatusarfik Greenland

We have together with Steno Diabetes Center in Greenland received a large grant to investigate Sleep apnea in Greenland resulting in a new ph.d. project that was started in May 2022. Mads Mose Jensen was enrolled as a Ph.d student at both Ilisimatusarfik and the University of Copenhagen with the project “Sleep Apnea among High Risk Groups of Greenland”. The project is a collaboration between the department of Otorhinolaryngology at Zealand University Hospital, Koege with Professor Preben Homøe as the main supervisor and Steno Diabetes Center Greenland with Professor Marit Eika Jørgensen and Professor Michael Lynge Pedersen as co-supervisors.

Sleep apnea is a disease where a patient’s sleep is disrupted by recurrent breathing obstruction. Besides excessive daytime sleepiness, untreated sleep apnea is related to increased morbidity and mortality. Certain groups, such as people living with diabetes and obesity, have a higher risk of suffering from obstructive sleep apnea. Despite the growing prevalence of the major risk factors for sleep apnea, obesity and type 2 diabetes, diagnosis and treatment for sleep apnea is not currently available in Greenland. By utilizing emerging wearable technology, we aim to increase diagnosis for high-risk populations in Greenland. Patients with Type 2 Diabetes or obesity, who are being followed at Steno Diabetes Center Greenland, will be invited to participate. Besides sleep examinations, participants will be screened for autonomous cardiac neuropathy, hypertension, dyslipidemia and other co-morbidities. Following the diagnosis, the project also aims to develop and implement a treatment regime specifically designed for the conditions in Greenland. This treatment will rely heavily on new technology, which enables telemedicine treatment options so the treatment is available throughout Greenland. With this structured screening, we hope to find and treat sleep apnea in a high-risk populations where treatments has not previously been available. Furthermore, the knowledge and experience with screening high-risk population for sleep apnea will also be valuable outside of Greenland. Inclusion is expected to end in 2024.



Preben Homøe, MD,
PhD, Dr. Med.,
Professor

”Health Promotion in workers in the fish production industry in Royal Greenland”

The project is a mapping study, that, besides a letterature study, interessentanalysis and internal mapping of data, also includes a ministudy on attitudes and understandings of helath and work rutines with the workers in Royal Greenland. The project is planned during a 6 month period and is finished 1st of Dec. 2022 with a rapport. The project has given a good overview on knowledge in the organization, but also knowledge in the field globally, and made network between alike fishing nations like Iceland and The Faroese.

Besides this I’m accepted into the ARCADE – programme for Societal and Environmental Leadership. During a 10 month period I together with 10 other students from ILISIMATUSARFIK, Univeristy of Tromsø and the University of Iceland look and immerse ourselves in – each with our different research fields – climate change and the human impacts it has.

Sonja Sørensen, Research Assistant



Sonja Sørensen,
Research Assistant

News from researchers and research groups

Collaborations with Arctic Health Research Centre in Aalborg 2022

The past year of collaboration with Aalborg University has focussed on heart, thyroid, metabolism, lactose tolerance, dementia, and polypharmacy among nursing home residents in Greenland.

The collaborative PhD-students at Ilisimatusarfik and Aalborg University have contributed interesting reports.

- Paneeraq Noahsen reported an unprecedented low occurrence of autoimmunity among Greenlanders extending her findings of a thyroid disease pattern in keeping with an adaptation to higher iodine intake levels. This poses new questions to Greenland and to Paneeraq!
- Nadja Albertsen published her second report on cardiac arrhythmias in Greenland covering those aged 50+ years in East Greenland finding just 1% with persistent atrial fibrillation. She collected data in spring and summer for her joint PhD study at Ilisimatusarfik and Aalborg University in collaboration with the Department of Internal Medicine at Queen Ingrid's Hospital and the Clinic for General Medicine in Nuuk. Moreover, Nadja was first author on a report on the use of drugs among nursing home residents in Greenland; co-supervised two master students on the occurrence of osteoporosis in Greenland; and one master student on lactase persistence. The latter work by
- Simun Niclasen, was published and presented at Grønlandsmedicinsk Selskab, winning the travel-award, and presented at NunaMed.
- A new PhD-study commenced in 2022 with Mette Motzfeldt Jensen presenting the background and aims of her work on 'the body heater', brown adipose tissue, both at AAU-Arctic annual meeting in Aalborg & at NunaMed in Nuuk. You should be curious of this work!



Stig Andersen, MD,
PhD, PGCME
Professor

News from researchers and research groups

- Inaluk Kleist additionally presented her work on dementia in Greenland, both at an international convention and at a symposium of care for the old in Greenland.
- Karsten Rex 's work on hepatitis B virus infection among the populations in Greenland, in collaboration with Henrik Krarup at the Department of Molecular Diagnostics in Aalborg, provided a new report on inflammation as a contributor to differences in survival depending on HBV exposure, further supporting his everyday clinical commitment to health in Greenland.

In conclusion, everyday health issues inform the research questions and collaborative research with Arctic Health Research Centre at Aalborg University, which extends beyond 2022 and give promises for continuing developments in 2023.

Stig Andersen MD, PhD, PGCME

Professor, Head of Department, Aalborg University Hospital; AAU Arctic & Ilisimatusarfik

Ageing in the Arctic

The aim with AgeArc is to improve health, well-being and quality of life among older people in Greenland through development and implementation of new economically sustainable health promoting initiatives and solutions for municipal and care practices, cultural and societal structures, health measures and personal experiences.

Our ambition is to bridge the key knowledge gaps by connecting systematic research with welfare development, local competences and the preferences and perceptions of older Greenlanders.

To do so we unite the Greenlandic municipalities, current and future care personnel, older people, population surveys, researchers from ethnology, history, sociology, care sciences and institutions of research and teaching in Denmark and Greenland to determine what levels and modes of care and policies for the elderly in Greenland are useful, sustainable, and relevant. The results of the project will be improved health, well-being and quality of life, new knowledge, better municipal and care practices and the creation of a platform for further practice/research collaboration on ageing in the Arctic region.

The project was completed in 2022 with an online conference and exhibition at Ilisimatusarfik.



Tenna Jensen, PhD,
Associate Professor

News from researchers and research groups



Tine Aagaard,
PhD, Senior
Researcher

Professional perspectives on health practice in Greenland after the 2010-health reform. An inquiry by qualitative interviews

Conducted at the Institute for Health and Nature, Ilisimatusarfik/University of Greenland, 2021, by teachers, researchers and the head of the institute for the Health Commission in Greenland

Resumé

The objective of the inquiry was to reveal the frontline professionals' perspectives on changes of practice as a consequence of the health reform, and to give input to how the actions of the reform could be changed and improved in order to fulfill the intentions.

The frontline professionals point to opportunities and barriers relative to strengthening primary health care, equity in health care through telemedicine and dialogue with the citizens, improving recruitment and retention of the employees and improving the cross-sectoral cooperation between the health system and the municipalities.

Building on an analysis and discussion of the interviews with the frontline professionals, four overall recommendations for improvement of health care practice in the areas of the reform are given:

News from researchers and research groups

1. As a precondition for a good work environment and satisfied employees, it is recommended that the resources of professionals that are permanent residents in Greenland, are recognized and further developed. This requires an overall strategy for competence development of the professionals in the health system.
2. It is recommended to prepare an overall personnel policy for the entire health system aiming at both resolving the personnel situation in the short term, and at building a staff of stable, well-educated professionals that are permanent residents, in the long term. This also implies a strategy for leadership training.
3. Common competence development between professionals in the health system and in the municipalities can improve the patients' courses across the sectors. In the same movement, the municipal professionals can improve their health care competencies, and the health professionals can increase their insight in opportunities for prevention, health promotion and rehabilitation. Likewise, their working relations can be strengthened.
4. Dialogue between the health professionals and the citizens contains opportunities for improved quality and efficiency of health care services plus job satisfaction for the professionals. The increasing amount of chronically ill patients and elders calls for professional conversations about health challenges and their solutions to a greater extent, and for physical treatment to a lesser degree.

It is therefore recommended to prioritize user involvement and dialogue with the citizens in health care. This includes acceleration of the implementation of new telemedicine equipment.

Besides these recommendations, the project describes a wide range of specific tools to strengthen the focus areas of the health reform.

Tine Aagaard, PhD, Senior Researcher

News from PhD students

In the following pages we have asked the PhD affiliated with Greenland Centre for Health Research to give a short update on their research and work

Uncovering the secrets of atopic dermatitis

Anna Maria Andersson, a MD and a Ph.D.-student at the University of Greenland and Copenhagen University, will finish her Ph.D.-thesis Atopic dermatitis among children in Greenland and Denmark, in April 2023. The thesis is based on data collected between 2019 and 2020 regarding atopic dermatitis (AD) in children in Greenland. In our latest study we studied the skin immune response, lipid composition and microbiota of 25 children with AD and 25 healthy controls, and compared these findings with 25 Danish children with AD. Our results showed that Inuit children with AD have a unique immune, lipid and microbiota composition of the skin, that may explain differences in AD between ethnicities. The study will be submitted for publication in February 2023.

In 2022, Anna Maria Andersson helped organize a study that examine the prevalence and clinical characteristics of common inflammatory skin conditions among adults in Tasiilaq. The study involved almost 300 adult participants and showed that the overall prevalence of skin disease was 65%. These results are likely skewed by a higher participation rate among residents suffering from skin disorders.

Anna Maria Andersson, PhD



Anna Maria
Andersson,
PhD student

A qualitative study on Greenland's universal parenting programme MANU

Since I returned from maternity leave in the beginning of 2022, I have continued the analysis of my collected data of both professionals' and parents' perspectives on the parenting program MANU. I have met with my projects referencegroup twice this year, in order to involve them in the analysis of the study. I published my second PhD paper in 2022, which investigate how parents' notions and experiences of parenthood are reflected and challenged in MANU.

Christine Ingemann, PhD student



**Christine Ingemann,
PhD student**



**Hjalte Larsen,
MD, Ph.D-
Student**

“Heart Failure in Greenland”

In 2022, the Ph.D.-project: “Heart Failure in Greenland” progressed with the submission of the paper; “Prevalence and clinical features of heart failure in Greenland”. The prevalence of heart failure in Greenland is comparable the that in high-income countries. However, the proportion diagnosed with ischemic heart disease was lower than expected. Regarding the second study, an agreement on transferring health data from the healthcare system to statistics Greenland is nearly done. The third study started including participants for the GWAS; only some participants in the smaller cities and settlements remain to be examined. 2023 will surely be an eventful year for the project, as this is the third and final year.

Hjalte Larsen, MD, Ph.D-Student

News from PhD students

Update on the Ph.D.-project on risk factors and protective factors for suicide

2022 was the year when it was finally possible to participate physically in conferences and I presented my results on the 19th European Symposium on Suicide & Suicidal Behaviour in Copenhagen and on NUNAMED in Nuuk. During the summer I participated in the European Educational Programme in Epidemiologi summer source, taught by some of the worlds leading epidemiologists. My first paper has been submitted to BMC Psychiatry and I hope the second will be ready primo 2023. The past yar I have been working with the sharing of my knowledge and research by giving interviews and talks, and as a part of the working group of the coming national suicide prevention strategy. In November I participated in the Ph.D.-course Research ethics, positioning, and decolonization at Ilisimatusarfik, which was a great supplement to my ongoing work including these areas in my research. Further November included a writing retreat with the Centre for Public Health in Greenland and a participation in the Hindsgavl Arctic Workshop in Middelfart.



Ivalu Katajavaara
Seidler, PhD
student

Ivalu Katajavaara Seidler, PhD student

News from Julie

In 2022 Julie has been in Nuuk with her family working at Ilisimatusarfik from January till mid-April. Julie has participated in the Nordic Alcohol and Drug Research Assembly and NunMed 2022 conferences where she has presented her research project and the preliminary findings. Julie has also spend time planning and conducting a phd-course in connection with Nunamed and teaching the nursing students of Ilisimatusarfik in the Public Health course. The phd-project has progress and Julie has finalized two articles now ready for submission and begun the collaboration Statistics Greenland for the final parts of studies with the longitudinal study.



Julie Flyger
Holflod, PhD-
student

Julie Flyger Holflod, PhD student

Enrollement and Sleep Apnea

In May 2022, Mads Mose Jensen was enrolled as a Ph.d student at both Ilisimatusarfik and the University of Copenhagen with his project “Sleep Apnea among High Risk Groups of Greenland”. The project is a collaboration between the department of Otorhinolaryngology at Zealand University Hospital, Koege with Professor Preben Homøe as the main supervisor and Steno Diabetes Center Greenland with Professor Marit Eika Jørgensen and Professor Michael Lyng Pedersen as co-supervisors.



Mads Mose
Jensen, PhD
student

Sleep apnea is a disease where a patient's sleep is disrupted by recurrent breathing obstruction. Besides excessive daytime sleepiness, untreated sleep apnea is related to increased morbidity and mortality. Certain groups, such as people living with diabetes and obesity, have a higher risk of suffering from obstructive sleep apnea. Despite the growing prevalence of the major risk factors for sleep apnea, obesity and type 2 diabetes, diagnosis and treatment for sleep apnea is not currently available in Greenland.

By utilizing emerging technology, we wish to increase diagnosis for high-risk populations in Greenland. Patients with Type 2 Diabetes or obesity, who are being followed at Steno Diabetes Center Greenland, will be invited to participate. Besides sleep examinations, participants will be screened for autonomous cardiac neuropathy, hypertension, dyslipidemia and other co-morbidities. Following the diagnosis, the project also aims to develop and implement a treatment regime specifically designed for the conditions in Greenland. This treatment will rely heavily on new technology, which enables telemedicine treatment options so the treatment is available throughout Greenland.

By making structured screening, we hope to find and treat sleep apnea in a high-risk populations where treatments has not previously been available. Furthermore, the knowledge and experience with screening high-risk population for sleep apnea will also be valuable outside of Greenland.

Inclusion is expected to end in 2024.

Mads Mose Jensen, PhD Student

News from PhD students

Type 2-diabetes

The PhD-project “Patient education in Greenland: Development and feasibility testing of an intervention to patients with type 2 diabetes or chronic obstructive pulmonary disease” was initiated by Steno Diabetes Center Greenland in May 2022, where Maja was enrolled as a PhD student at Ilisimatusarfik and Aarhus University. The aim of the project is 1) to investigate experiences of disease among people with T2DM or COPD, 2) to investigate and explore experiences from health care professionals and 3) to develop and test a culturally sensitive and sustainable patient education offer to people with T2DM and COPD in Greenland. Maja has in the first part of the project interviewed 24 people with type 2 diabetes or COPD from five different towns and interviewed 23 health care professionals from 10 different places of residence. The interviews will be a part of the needs assessment in the development of the intervention. In 2023, further work on the development of the intervention will take place in close cooperation with people with type 2 diabetes or COPD and with health care professionals. Once the intervention is developed, it will be tested on a group of people with type 2 diabetes or COPD.



Maja Hykkelbjerg
Nielsen, PhD
student

Maja Hykkelbjerg Nielsen, PhD student

Brown adipose tissue and metabolic effects of cold exposure

Mette Motzfeldt Jensen, a MD and PhD student at Aalborg University. Currently applying for double enrolment with the University of Greenland. Mette is based at the Arctic Health research Centre at Aalborg University Hospital. The PhD project addresses brown adipose tissue and metabolic effects of cold exposure among Greenlanders and Danes. The study will primarily be based on PET/CT scans and subcutaneous fat biopsies before and after short-term cold exposure. We hypothesise that Greenlanders have more and more readily activated brown adipose tissue due to adaptation to the extreme cold environment. The perspective of this research is to dig deeper into the activation mechanisms of the brown adipose tissue for promotion of cardiometabolic health. The trial will be conducted in Aalborg University Hospital, as it cannot be performed in Greenland due to technical limitations with PET/CT scans. When the study is conducted, Mette will be situated in Ilisimatusarfik for analysing data and thesis writing. Mette attended NunaMed 2022 with a presentation of the upcoming research on brown adipose tissue.



Mette Motzfeldt
Jensen, PhD
student

Mette Motzfeldt Jensen, PhD student

News from PhD students

Maternity leave

Mie Møller, a MD and a Ph.D.-student at the University of Greenland and Copenhagen University, is currently on maternity leave and will return to her PhD in May 2023, where she has 2 years left to complete her PhD-project Aspects of the COVID-19 pandemic in Greenland. During her first year of the project, she finalized most of her fieldwork in Nuuk and Ilulissat. Her study about the effectiveness of the COVID-19 vaccines is almost completed and the results will be presented next year. Furthermore, she initiated a new questionnaire study regarding the prevalence and characteristics of long COVID, where 308 persons in Nuuk participated. The study is conducted in collaboration with her colleague Trine Abelsen.

In 2023, Mie Møller will start to evaluate the COVID-19 travel-screening program, which was one of the main efforts implemented by the Greenlandic government to keep the transmission of COVID-19 low. The aim is to evaluate the effect and importance of such programs, to have a better understanding of handling the COVID-19 pandemic and possible similar pandemics in the future.

Mie Møller, PhD student

Research and Antarctica

2022 was an eventful year. Not only were two papers from the PhD published, but we were able to do the clinical part of the PhD in Nuuk, and collected more than 200 heart rhythm recordings during the summer. The recordings are now awaiting analysis, and hopefully we will have the results in the first part of 2023.

A big thank you to Ilisimatusarfik, Queen Ingrid's Health Care Center, Steno Diabetes Center and especially the participants for their interest and making this happen!

2022 was also an important year for networking and connecting to other Arctic countries and researchers with an interest in the polar regions. Nunamed created unique opportunities to share research experiences about cardiovascular disease in the Arctic, and at the end of 2022/early 2023, I took part in Inspire 22, a research expedition focusing on a number of effects related to prolonged stays in the Antarctic, which will be my stay abroad of the PhD and made me the first Danish woman to ski from the coast of Antarctica to the South Pole.

Nadja Albertsen, PhD student



Mie Møller, PhD student



Nadja Albertsen, PhD student

News from PhD students



Nick Duelund,
PhD student

"Vision Screening of Greenlandic Children"

Nicks PhD-project "Vision Screening of Greenlandic Children" started in June 2021. The data collection is almost completed. Nicks has examined around 300 children in Uummannaq, Ilulissat, Sisimiut, Nuuk, Qaqortoq and Tasiilaq. Local optometrists conducted the vision screening in kindergartens. After the screening all children received a full eye examination at the hospital by Nick. All data collected will now be analyzed and published this year.

Nick Duelund, PhD student

"Thyroid function and autoimmunity among populations in Greenland with 10 and 20 years follow-up"

Paneeraq Noahsen is a MD and a part-time PhD-student at the University of Greenland and the University of Aalborg, enrolled in November 2017 and has until November 2024 to complete her PhD-thesis "Thyroid function and autoimmunity among populations in Greenland with 10 and 20 years follow-up".



Paneeraq
Noahsen, PhD
student

Two articles of the PhD project have been published in well-esteemed endocrine, peer-reviewed journals. The articles described that the pattern of thyroid autoimmunity, hyper- and hypothyroidism among iodine replete Greenlandic Inuit was comparable with the thyroid disease pattern seen in populations with iodine deficiency. The findings are intriguing and suggest that Inuit may have adapted to excessive iodine intake over centuries, causing a need for a higher iodine intake to prevent iodine deficiency. The next papers in the pipeline are the effect of persistent organic pollutants (POPs) on thyroid function, and 10 and 20 years of follow-up on thyroid function and autoimmunity from data collected in Nuuk and Ammassalik district in 2018 and 2019.

Paneeraq has alongside her research also played a major role in the management of the COVID-19 epidemic in Greenland strategically, practically and by promoting understanding of risk and health expert advice on national media in Greenlandic. Paneeraq has also submitted an epidemiological paper about the COVID-19 epidemic in Greenland, the paper is in review at the present.

Paneeraq is currently working at The Danish Health Authority in Copenhagen as a doctor specialising in Public Health and will return to Greenland to complete her specialist training in 2024.

Paneeraq Noahsen, PhD student

Newly assigned researchers

Ruth Montgomery, DrPH

Over the past 5 years she has also worked with inclusivity within the Greenlandic society, with a special focus on cultural humility and the rights of the individual, this including projects that are inclusive for non – nordic nationals living in Greenland.

In January 2022 Montgomery-Andersen was asked to represent the Greenlandic government in the Nordic Migrant Expert Forum. The Nordic reference group, representing ministries with responsibility for integration in the five Nordic countries and the 3 self- governing entities. Forum consists of a total of 16 experts on integration and migration.

Parallel to her academic work she has worked diligently to ensure access to dance and performing arts for children and youth, in Greenland. She has influenced and developed several performing arts programs and is the architect of the BFA studies programme at the Nationalteater School in Greenland.

Montgomery-Andersen is now the project Manager for NuQi - Nunatta Qiteqatigiiffiat - Community Dance Center – Dansecenter Nuuk. Establishment of Greenland's first community dance center, that includes the creation of and documenting the programming of an socially inclusive dance arena for children/young people between 5 - 18 years of age.



Ruth
Montgomery,
DrPH

Acknowledgement

25 years of commitment to health in Greenland

A treasured colleague told me that Greenland was great. I was a newly graduated medical doctor, young, idle, and adventurous, and I just had to go and investigate. This was 1995 and I made my first appointment with Greenlandic Health Care. Working at Queen Ingrid's Hospital left me pondering on contrasting conditions, and life and disease with Arctic residence. This framed my understanding, and lit reflections, questions, and projects starting 1998. Swiftly 2023 was upon us and 25 years had passed since my first data collection in Nuuk and Ammassalik.



Stig Andersen

Going back to 1998, I was working as a doctor during daytime and a researcher during evening and night. This dual adventure has been my destiny since. I have combined working as a doctor in Greenland and conducting research based on questions drawn on everyday medical practice, questions, and needs. Now, what questions did come up? Examples include the impact of Hepatitis B virus infection on health in Greenland, vitamin D and bone metabolism, bone- and body build and obesity, ADL and medication in the ageing arctic population, kidney function, diet and persistent organic pollutants and inflammation, heart diseases, dementia, and not least metabolism as a clue to how on earth Inuit survived in the cold and hostile Arctic environment. My first data were collected day-and-night. I forgot to sleep and eat as I had fun. Having now conducted 10- and 20-years follow-up with talented Greenlandic colleagues, this fun is schedule to continue for decades to come in collaboration with these and more gifted Greenlandic colleagues.

Stig Andersen, MD, PhD, PGCME

Professor adj. Ilisimatusarfik, University of Greenland, Nuuk, Greenland

Consultant at Department of Internal Medicine, Queen Ingrid's Hospital, Nuuk, Greenland

Head of Department of Geriatric Medicine, Aalborg University Hospital, Aalborg, Denmark

Lead of Medical Education, Aalborg University Hospital, Aalborg, Denmark

Professor, Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

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