

Symposium 2019

1st of February 09:00 – 17:15

Low Vitamin D during pregnancy and health risk in mother and child

The Research Unit for Dietary Studies, The Parker Institute &
The Department of Public Health, University of Copenhagen

Location: Frederiksberg Hospital, Nordre Fasanvej 57, Hovedvejen, Entrance 14, 2000
Frederiksberg [Map](#)

The symposium is open to all, but limited number of seats are available. They will be
allocated on a first come first serve basis. Please, sign up for the symposium by
sending a mail to fanney.thorsteinsdottir@regionh.dk



09:00 – 09:05	Introduction	Berit L Heitmann (DK)
09:05 – 10:35	Pregnancy and maternal outcomes	
09:05 – 09:30	Low vitamin D reduces the chance of pregnancy in women undergoing fertility treatment.	Ulrik Schiøler Kesmodel (DK)
09:30 – 10:05	Vitamin D status during pregnancy and its association with maternal outcomes: Results from a Brazilian cohort.	Gilberto Kac (BR)
10:05 – 10:35	Effects of a European multicentre vitamin D and lifestyle intervention for gestational diabetes mellitus prevention.	Peter Damm (DK)
10:35 – 10:55	Pause	
10:55 – 12:15	Oral Health	
10:55 – 11:30	Recruitment of low income pregnant women into a randomised dietary and dental care intervention: challenges and successful strategies from the IMPROVE trial.	Amanda Adegboye (UK)
11:30 – 11:45	Income, social and health profile of the Improve trial Cohort.	Amanda Farnum (BR)
11:45 – 12:00	Vitamin D, calcium and periodontal status in early pregnancy: Results from The Improve Trial.	Paula Cocate (BR)
12:00 – 12:15	Early vitamin D supplementation and prevention of dental defects: Results from COPSAC.	Pia Elisabeth Nørrisgaard (DK)
12:15 – 13:15	Lunch break	
13:15 – 15:20	Long term health outcomes	
13:15 – 13:45	Maternal vitamin D status and child health outcomes: Results from the Odense Child Cohort.	Henrik Thybo Christensen (DK)
13:45 – 14:15	Early vitamin D supplementation and long-term health in the offspring: Results from COPSAC.	Bo Chawes (DK)
14:15 – 15:20	Early vitamin D and long-term health outcomes: results from the D-tect study: Vitamin D in early life and health outcomes: Status and results from the D-tect study. Climatic determinants of neonatal vitamin D levels. Neonatal vitamin D and the risk of childhood asthma. Neonatal vitamin D and the risk of rheumatoid arthritis in early adulthood. Neonatal vitamin D and the risk of adult T2D. Neonatal vitamin D and the risk of later pre-eclampsia.	Berit L Heitmann (DK) Amelie Keller (DK) Fanney Thorsteinsdottir (DK) Isabel Cardoso (DK) Amelie Keller (DK) Maria Stougård (DK)
15:20 – 15:40	Pause	
15:40 – 17:00	Long term mental outcomes	
15:40 – 15:50	Neonatal Vitamin D and adult IQ: Results from the D-tect study.	Ina Olmer Specht (DK)
15:50 – 16:05	Vitamin D in pregnancy and cognition in offspring: possibilities of research in the CopLab Pregnancy Database.	Janet Janbek (DK)
16:05 – 16:20	Relations between prenatal and early life vitamin D and the risk of neurodevelopmental disorders (Autism and ADHD).	Niels Bilenberg (DK)
16:20 – 17:00	Early Vitamin D and psychiatric outcomes.	John McGrath (AUS)
17:00 – 17:15	Final discussion and closure	Berit L Heitmann (DK)

Speakers:



Amanda Adegboye, MSc, PhD.

Department of Psychology, Social Work & Counselling, Faculty of Education and Health, University of Greenwich, UK

Recruitment of low income pregnant women into a randomised dietary and dental care intervention: challenges and successful strategies from the IMPROVE trial

The aim of this presentation is to describe the design and recruitment of a feasibility trials on Calcium-vitamin D milk fortification and periodontal therapy among low income pregnant women in Rio de Janeiro, Brazil. Recruitment and retention of low income pregnant women to clinical trials can be a very challenging task for researchers especially in low resource settings. Evaluation of barriers and enablers to recruitment was performed by qualitative and quantitative methods.



Amelie Keller, MSc, PhD Student

Research Unit for Dietary Studies, The Parker Institute, Bispebjerg og Frederiksberg Hospital, Frederiksberg, Denmark

Climatic determinants of neonatal vitamin D levels & Neonatal vitamin D and the risk of adult T2D.

The presentation will focus on results from the D-tect project using measurements of vitamin D from neonatal dried blood spots. The first presentation will provide information about environmental determinants of neonatal vitamin D concentrations, and the use of a proxy model; whereas the second presentation will present the latest findings about neonatal vitamin D concentration in relation to the risk of developing early-onset type 2 diabetes.



Berit Lilienthal Heitmann, Professor, PhD

Research Unit for Dietary Studies, The Parker Institute, Bispebjerg og Frederiksberg Hospital, Frederiksberg, Denmark

Vitamin D in early life and health outcomes: Status and results from the D-tect study.

The D-tect study relies on the fact that maternal vitamin D deficiency is common during pregnancy, and a widespread public health problem with implications for both the healthy pregnant woman and for the child's early development and health later in life. The D-tect study is partly based on a quasi-experimental society-intervention, and partly on comparing 25-hydroxy-vitamin D levels at birth from stores dried blood for individuals who subsequently developed disease and random controls. The society-intervention is related to the abandonment in June 1985 of the Danish mandatory vitamin D fortification policy that exposed all Danes to extra vitamin D before, but not after this date, and compares individual disease risk before and after the abandonment.



Bo Chawes, MD, PhD, DMSc, Associate Professor

Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Denmark.

Early vitamin D supplementation and long-term health in the offspring: Results from COPSAC

This presentation will focus on wheeze/asthma/lung function outcomes at age 0-6 years from a randomized controlled trial of 7-fold vs. standard dose of vitamin D supplementation during pregnancy in the COPSAC mother-child cohort. Data from the American VDAART vitamin D randomized controlled trial of 10-fold vs. standard dose of vitamin D and a combined analysis of COPSAC and VDAART data will also be presented along with data on effect modification by genetic risk of asthma and by maternal diet.

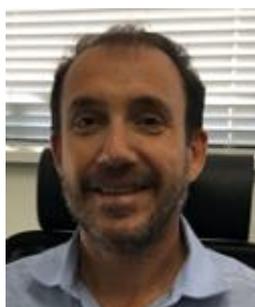


Fanney Thorsteinsdottir, MSc, PhD Student

Research Unit for Dietary Studies, The Parker Institute, Bispebjerg og Frederiksberg Hospital, Frederiksberg, Denmark

Neonatal vitamin D and the risk of childhood Asthma.

Insufficient vitamin D status during the neonatal period may influence the development of asthma later in life by. In a case cohort study, we examine the association between neonatal vitamin D concentrations and asthma among 3 – 9-year-old.



Gilberto Kac, Professor

Nutrition Institute, Rio de Janeiro Federal University, Brazil

Vitamin D status during pregnancy and its association with maternal outcomes: Results from a Brazilian cohort.

The presentation will focus on results based on a prospective cohort study with one visit at each pregnancy trimester. Vitamin D was measured at baseline and at all follow-up visits. Longitudinal models were used to investigate the association between vitamin D and outcomes such as depression, plasma lipids and maternal obesity indicators.



Henrik Thybo Christesen, Professor, overlæge, MD, PhD

Hans Christian Andersen Children's Hospital, Odense University Hospital, Odense, Denmark.

Maternal vitamin D status and child health outcomes: Results from the Odense Child Cohort.

In Odense Child Cohort (OCC), a prospective cohort of pregnant women and their children, s-25OHD has been measured at several time points. Incidence and association studies have been performed in three PhD's and several other projects in pregnancy, neonates and children up to five years of age. Significant associations to s-25OHD range from spontaneous miscarriage over ADHD-score in 2-y-olds to hand grip strength in 5-y-old children, while other studies did not show associations. In conclusion, the studies support an impact of vitamin D on several non-skeletal outcomes in both pregnancy and children.



Ina Olmer Specht, MSc, PhD

Research Unit for Dietary Studies, The Parker Institute, Bispebjerg og Frederiksberg Hospital, Frederiksberg, Denmark

Neonatal Vitamin D and adult IQ: Results from the D-TECT study.

The development of the fetal brain is dependent on maternal micronutrient intake, among others vitamin D. Using a nested cohort study design, we investigated if neonatal vitamin D concentrations were associated with Børge Priens IQ test score (BPP) in young adulthood.



Isabel Cardoso, MSc

Research Unit for Dietary Studies, The Parker Institute, Bispebjerg og Frederiksberg Hospital, Frederiksberg, Denmark

Neonatal vitamin D and risk of rheumatoid arthritis in early adulthood

Maternal vitamin D deficiency may affect the risk of developing autoimmune diseases, such as rheumatoid arthritis (RA). In this talk we will present the results of a case-cohort study, where we investigated the association between vitamin D concentrations, measured around the time of birth in dried blood spots, and the risk of developing RA in early adulthood.



Janet Janbek, MSc, PhD Student

Danish Dementia Research Centre, Rigshospitalet, Copenhagen, Denmark

Vitamin D in pregnancy and cognition in offspring: possibilities of research in the CopLab Pregnancy Database.

I will present the CopLab Pregnancy Database shortly and go into describing the available vitamin D measurements; numbers, levels, validity and considerations; and possibilities for utility in the context of offspring cognition research as well as current gaps in knowledge in this field.



John McGrath, Professor

Queensland Brain Institute, University of Queensland, Australia & Aarhus University, Denmark.

Early Vitamin D and psychiatric outcomes.

Clues from epidemiology suggest that vitamin D deficiency during early life may increase the risk of subsequent neurodevelopmental disorders. While animal experiments have robustly shown that developmental vitamin D deficiency is associated with a wide range of brain-related outcomes, the current evidence based on analytic epidemiology is mixed. The presentation will summarize recent studies related to schizophrenia and autism. Based on recent discoveries from the genetic of psychiatric disorders, a novel candidate mechanisms of action linking vitamin D and voltage-gated calcium channels will be presented.



Maria Stougård, MSc, PhD

Research Unit for Dietary Studies, The Parker Institute, Bispebjerg og Frederiksberg Hospital, Frederiksberg, Denmark

Neonatal vitamin D and later risk of preeclampsia

Preeclampsia is a severe pregnancy related syndrome, and the risk of developing preeclampsia may be influenced by insufficient neonatal vitamin D concentration. In this study, we examined the association between neonatal vitamin D concentration in relation to the risk of developing preeclampsia later in life.



Niels Bilenberg, Professor, overlæge, PhD.

Børne- og ungdomspsykiatrisk afdeling, Universitetsafdeling, Psykiatrien i Region Syddanmark

Relations between prenatal and early life vitamin D and the risk of neurodevelopmental disorders (Autism and ADHD).

Based on data and biobank material from about 2000 mothers and offspring from Odense Child Cohort (OCC) we have analyzed the association between vitamin D concentration in pregnant women and cord-blood, and traits of Autism and ADHD in 3 and 5 year old children.



Paula Cocate, Adjunct Professor, PhD

Department of Bioscience and Physical Activity, Federal University of Rio de Janeiro.

Vitamin D, calcium and periodontal status in early pregnancy: Results from The Improve Trial.

Presentation of partial data of an ongoing Feasibility Clinical Trial on calcium-vitamin D supplementation and periodontal therapy for improving metabolic and inflammatory profile among pregnant women. Data on changes of vitamin D and calcium blood concentrations and other biomarkers between 2nd and 3rd trimesters among Brazilian pregnant women with periodontitis will be presented. Comparison analysis will be performed between who received daily vitamin D (1,000 IU) and calcium (1,000 mg) supplementation and the placebo group.



Peter Damm, Professor

Obstetric Clinic, The Juliane Marie Centre, Rigshospitalet, Copenhagen

Effects of a European multicentre vitamin D and lifestyle intervention for gestational diabetes mellitus prevention.

As vitamin D deficiency has been found to be associated with gestational diabetes mellitus (GDM), we aimed to test vitamin D supplementation as a strategy to reduce GDM risk and associated surrogate variables (fasting plasma glucose (FPG), insulin resistance and weight gain) in pregnant obese/overweight women. The FP-7 supported European DALI vitamin D multicentre study enrolled women with pre-pregnancy body mass index (BMI) ≥ 29 kg/m², $\leq 19+6$ weeks of gestation and without GDM. Participants (N=154) were randomized to receive 1600 IU/day vitamin D₃ or placebo (each with or without lifestyle intervention). Women were assessed for vitamin D (sufficiency defined as ≥ 50 nmol/l), FPG, insulin resistance and weight at baseline, 24-28 and 35-37 weeks.



Pia Elisabeth Nørrisgaard, MSc, PhD Student

Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Denmark.

Early vitamin D supplementation and prevention of dental defects: Results from COPSAC.

Vitamin D is an important component for tooth development. Impaired enamel formation can result in pain, breakdowns, rapid caries-progression, extractions, and affect up to 40% of schoolchildren. We conducted a RCT and assessed the effect of a high-dose vitamin D supplementation in women from pregnancy week 24 to 1 week postpartum on enamel defects in their offspring. The RCT was conducted within the Copenhagen Prospective Studies on Asthma in Childhood (COPSAC2010) and included 623 pregnant and their children. The children participated in a comprehensive dental examination at the age of 6. High-dose vitamin D supplementation during pregnancy was associated with 50% reduced risk of enamel defects in the offspring. This suggests prenatal vitamin D supplementation as prevention for enamel defects and could have a significant impact on oral health, life quality, and public health economic.



Ulrik Schiøler Kesmodel, Professor, overlæge, PhD.

Gynækologisk-obstetrisk afdeling, Herlev og Gentofte Hospital, Herlev, Denmark

Low vitamin D reduces the chance of pregnancy in women undergoing fertility treatment.

Vitamin D receptors and enzymes involved in the metabolism of vitamin D have been found in human reproductive organs, and vitamin D appears to positively influence chance of pregnancy and live birth in infertile women. The actual optimal level is unknown, and the dose and duration of supplementation (if applicable) is unknown.