AARHUS UNIVERSITY

# Press release

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**Basic information**

Name: Gudrun Winther Email: gwinther@hotmail.com Phone: 2567 7297

Department of: Clinical Medicine

Main supervisor: Gregers Wegener

Title of dissertation: Early life programming of brain and behaviour

Date for defence: 10-01-18 at (time of day): 14.00 Place: Mødelokale 2, Studenterhuset

Press release (Danish)

Fedtrig kost, graviditet og mental sundhed

En fedtrig, såkaldt "vestlig", kost før og under graviditeten kan spille en afgørende rolle for udviklingen af afkommets hjerne, og disponere afkommet for lettere at udvikle psykiske lidelser som angst og depression i voksenlivet, viser et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er udført af cand.scient. Gudrun Winther, der forsvarer sin afhandling d. 10. januar 2019.

I løbet af sit ph.d.-studium har cand.scient. Gudrun Winther forsket i samspillet mellem fedtrig, "vestlig" kost før og under graviditeten, og hvilken indflydelse det kan have på udviklingen af psykiske lidelser i afkommets voksenliv. En række dyreeksperimentielle undersøgelser viste, at fedtrig kost før og under graviditeten udløste angst-lignende adfærd i afkommet. Endvidere viste det sig, at denne effekt kunne nedarves i afkommet og videregives til den efterfølgende generation, hvilket antyder, at mormoderens livsstil muligvis kan medvirke til udviklingen af angst. Studierne tyder desuden på, at forstyrrelser i både immunsystemet og stress hormonsystemet kan bidrage til sammenhængen mellem moderens livsstil og udviklingen af afkommets hjerne.

De opnåede forskningsresultater bidrager til forståelsen af, hvordan vores gener og livsstil kan påvirke det ufødte barn og dets sårbarhed for psykiske lidelser i voksenlivet.

Ph.d.-studiet er gennemført ved Translational Neuropsychiatry Unit, Institut for Klinisk Medicin, Aarhus Universitet.

Dette resumé er udarbejdet af den ph.d.-studerende.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 10. januar 2019 kl. 14.00 i Mødelokale 2, Studenterhusfonden, Frederik Nielsens Vej 2-4, 8000 Aarhus C. Aarhus Universitet.
Titlen på afhandlingen er "Early life programming of brain and behaviour". Yderligere oplysninger: Ph.d.-studerende Gudrun Winther, e-mail: gwinther@hotmail.com, tlf. 2567 7297.

Bedømmelsesudvalg:

Professor Romain Barrès
Novo Nordisk Foundation Center for Basic Metabolic Research Integrative Metabolism and Environmental Influences, Copenhagen, Denmark

Professor Vallo Volke
Department of Physiology, University of Tartu, Tartu, Estonia

Associate professor Michael Wintherdahl
Department of Clinical Medicine - Positron Emission Tomography Center, Aarhus Denmark
Department of Clinical Medicine - Biomedical Radio Isotope Techniques, Aarhus, Denmark

Press release (English)

High-fat diet, pregnancy and mental health

A high-fat "Western" diet prior to and during pregnancy can play a crucial role in predisposing the offspring to develop mental disorders such as anxiety and depression in adulthood. The project was carried out by cand.scient. Gudrun Winther, who is defending her dissertation on the 10th of January, 2019.

During her PhD studies, Gudrun Winther, MSc, has investigated the interaction between a high-fat "Western" diet prior to and during pregnancy and what influence this has on the development of mental disorders in adulthood in the offspring. In a number of animal experimental studies, it appeared that a high-fat diet prior to and during pregnancy primed anxiety-like behaviour in the offspring. Furthermore, this effect was passed on to the second generation, suggesting that even the grandmother's lifestyle may be involved in the development of anxiety. The studies also suggest that both the immune system and regulation of the stress hormone levels may be involved in the interaction between the mother's lifestyle and the development of the child's brain and susceptibility for psychiatric diseases in adulthood.

The research results obtained contribute to the understanding of how our genes and lifestyle can affect the unborn child and its susceptibility for psychiatric diseases in adulthood.

The PhD programme was completed at the Translational Neuropsychiatry Unit, Clinical Medicine, Aarhus University.

This summary was prepared by the PhD student

The defence is public and takes place on 10th of January at Mødelokale 2 in Studenterhusfonden, Frederik Nielsens Vej 2-4, 8000 Aarhus C. The title of the project is "Early life programming of brain and behaviour". For more information, please contact PhD student Gudrun Winther, email: gwinther@hotmail.com, Phone +45 2567 7297.

Assessment committee:
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