Press release

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Basic information

Name: Andreas Ernst Email: aernst@ph.au.dk Phone: +45 2398 6181

Department of: Public Health

Main supervisor: Cecilia Høst Ramlau-Hansen

Title of dissertation: "Timing of pubertal development after intrauterine exposure to endocrine disrupters and synthetic sex hormones"

Date for defence: Friday June 7 2019 at (time of day): 10AM Place: Public Health Auditorium (room 101), building 1262, Bartholins Allé 4, 8000, Aarhus C

Press release (Danish)

Projekt kaster nyt lys på mulige årsager til den faldende pubertetsalder

Børn og unge i vestlige lande går væsentlig tidligere i puberteten end deres bedsteforældre gjorde for blot 50 – 100 år siden. Det har vakt folkesundhedsmæssig bekymring, da tidligere pubertetsudvikling mistænkes for at øge risikoen for en række hyppige og alvorlige tilstande i voksenlivet så som hjertekar-sygdom og visse typer af kræft. Årsagerne til det markante fald i den gennemsnitlige pubertetsalder forbliver stort set ukendte. Tidligere studier påpeger, at fostertilværelsen udgør en følsom periode, hvor specielt udsættelse for påvirkninger med hormonforstyrrende effekter kan spille en vigtig rolle for vores reproduktive helbred senere i livet herunder pubertetsudvikling.

I en landsdækkende dansk fødselskohorte, hvor 16,000 drenge og piger gav oplysninger vedrørende deres pubertetsudvikling hvert halve år, undersøgte dette projekt sammenhænge mellem udsættelse for fire udvalgte påvirkninger med hormonforstyrrende effekter i fostertilværelsen og timing af pubertet. Et stigende antal graviditetsuger med indtag af det smertestillende præparat Paracetamol viste en tendens til tidligere pubertetsudvikling blandt piger men ikke blandt drenge. Et højere niveau af perfluorerede forbindelser (svært nedbrydelig miljøforbindelser som bruges til overfladebehandling af hverdagsprodukter pga. deres smudsafvisende egenskaber) i moderens blod under graviditeten hang sammen med tidligere pubertet hos begge køn. Børn undfanget ved brug af fertilitetsbehandling og børn udsat for utilsigtet brug af oral prævention i første del af graviditeten synes at gå gennem puberteten på samme tidspunkt som andre børn. Projektets resultater støtter teorien om, at hormonforstyrrende stoffer kan medføre tidligere pubertetsudvikling og udpeger Paracetamol og de perflourerede forbindelser som potentielle risikofaktorer for et fald i timingen af pubertet.

Projekts resultater præsenteres og diskuteret i et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af læge, ph.d.-studerende Andreas Ernst, der forsvarer det d. 7/6 2019.

Forsvaret af ph.d.-projektet er offentligt og finder sted d. 7/6 2019 kl. 10 i Samfundsmedicinsk Auditorium (lokale 101), bygning 1262, Aarhus Universitet, Bartholins Allé 4, 8000, Aarhus C. Titlen på projektet er ”Timing of pubertal development after intrauterine exposure to endocrine disrupters and synthetic sex hormones”. Yderligere oplysninger: læge, ph.d.-studerende Andreas Ernst, e-mail: aernst@ph.au.dk, tlf. +45 2398 6181.

Bedømmelsesudvalg:
Wolfgang Ahrens, Professor, Deputy Scientific Director
Department Epidemiological Methods and Etiological Research
Leibniz Institute for Prevention Research and Epidemiology (BIPS), Bremen, Germany

Siri Eldevik Håberg, Deputy Director, Director of Research

Center for Fertility and Health, and Division of Mental and Physical Health
Norwegian Institute of Public Health, Oslo, Norway

Lars Henning Peder, Associate Professor, Consultant (chairman)
Department of Obstetrics and Gynecology
Aarhus University Hospital, Aarhus, Denmark
Department of Clinical Medicine
Aarhus University, Aarhus Denmark

Press release (English)

Project sheds new light on the potential reasons for the declining age of pubertal timing

Children from Western countries enter puberty at a considerable earlier age than their grandparents did just 50 – 100 years ago. This is of public health concern because earlier pubertal development have been suggested to increase the risk of several frequent and serious conditions in adulthood such as cardiovascular diseases and certain types of cancers. The underlying causes behind this significant decline in the average age at pubertal development remains largely unknown. However, earlier studies stress that intrauterine life represent a particular vulnerable period of life where exposure to endocrine disrupting factors in the environmental might play an important role for the future reproductive health in humans including pubertal development.

This project investigated the associations between fetal exposure to four selected environmental factors with endocrine disrupting activity and pubertal development using data from a nationwide Danish birth cohort with half-yearly information on pubertal development in 16,000 boys and girls. An increasing number of gestational weeks with maternal intake of the painkiller Paracetamol showed a tendency towards earlier age at pubertal development in girls but not in boys. Higher levels of perfluorinated compounds (environmentally persistent compounds used to cover consumer products because of their capability to resist dirt) in maternal blood from the pregnancy were related to earlier age at pubertal development in both sexes. Children conceived by use of medically assisted reproduction and children accidentally exposed to oral contraceptives in early pregnancy seemed to enter puberty similar to other children. These results support the hypothesis that endocrine disrupters might cause earlier pubertal development and identify Paracetamol and perfluorinated compounds as potential risk factors for a decline in timing of puberty.

The results from this project is presented and discussed in a new PhD project from Aarhus University, Health. The project was carried out by MD, PhD student Andreas Ernst, who is defending his dissertation on June 7 2019..

The defence is public and takes place on June 7 2019 at 10AM in the Public Health Auditorium (room 101), Building 1262 Aarhus University, Bartholins Allé 4, 8000, Aarhus C. The title of the project is "Timing of pubertal development after intrauterine exposure to endocrine disrupters and synthetic sex hormones". For more information, please contact MD, PhD student Andreas Ernst, email: aernst@ph.au.dk, Phone +45 2398 6181.

Assessment committee:
Wolfgang Ahrens, Professor, Deputy Scientific Director
Department Epidemiological Methods and Etiological Research
Leibniz Institute for Prevention Research and Epidemiology (BIPS), Bremen, Germany

Siri Eldevik Håberg, Deputy Director, Director of Research
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Department of Obstetrics and Gynecology
Aarhus University Hospital, Aarhus, Denmark
Department of Clinical Medicine
Aarhus University, Aarhus Denmark

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