

Press release

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Basic information

Name: Lotte Maxild Mortensen

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Department of: Public Health

Main supervisor: Kim Overvad

Title of dissertation: "N-3 and n-6 polyunsaturated fatty acids: metabolic pathways, interaction and risk of atrial fibrillation"

Date for defence: 10 May at (time of day): 13 Place: Bygn. 1262 (Samfundsmedicinsk auditorium)

Press release (Danish)

Flerumættede fedtsyrer i kosten og risiko for atrieflimren

Hvordan analyserer man bedst muligt samspil mellem kostfaktorer i befolkningsundersøgelser? Hvad er betydning af indtag af fisk i forhold til risiko for den mest udbredte hjerterytmeforstyrrelse, atrieflimren? Spiller genetikken en rolle for kostens måde at påvirke sygdomsrisikoen?

Disse spørgsmål undersøges i et nyt ph.d.-projekt fra Aarhus Universitet, Health, lavet i samarbejde med Aalborg Universitetshospital og støttet af Strategisk Forskningsråd. Projektet er gennemført af biolog Lotte Maxild Mortensen, der forsvare sin ph.d. den 10. maj 2017.

Atrieflimren er en hjerterytmeforstyrrelse, der har mange underliggende risikofaktorer. En af disse er forhøjet inflammatorisk tilstand i kroppen. Flerumættede fedtsyrer fra fx fede fisk (omega-3) eller fra kød og æg (omega-6) er med til at regulere kroppens inflammatoriske tilstand. Derfor er der grund til at tro, at kostens indhold af disse fedtsyrer kan påvirke risikoen for udviklingen af atrieflimren.

Tidligere studier af dette har ikke kunnet pege på en entydig sammenhæng, men disse har alene set på omega-3 fedtsyrerne, og ikke taget omega-6 i betragtning.

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I afhandlingen undersøges betydningen af

- samspillet mellem omega-3 og omega-6 fedtsyrerne for risiko for atrieflimren

- samspillet mellem genetisk variation i et udvalgt gen og fedtsyreindtag i kosten for risiko for atrieflimren

og der gives en sammenlignende vurdering af kroppens egen dannelse af flerumættede fedtsyrer i forhold til den mængde flerumættede fedtsyrer, der optages fra kosten.

Analyserne er lavet vha. en større befolkningsundersøgelse "Kost, Kræft og Helbred" med data fra 57000 danskere, der blev etableret i 1993-1997. Siden har mere end 2000 deltagere fra undersøgelsen fået atrieflimren. Dette er et højt antal patienter, hvilket har givet en god statistisk styrke til analyserne.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 10/5 kl. 13 på Aarhus Universitet, Samfundsmedicinsk auditorium, Bygn. 1262, Bartholins Allé 2, 8000 Aarhus C. Titlen på projektet er "N-3 and n-6 polyunsaturated fatty acids: metabolic pathways, interaction and risk of atrial fibrillation". Yderligere oplysninger: Ph.d.-studerende Lotte Maxild Mortensen, e-mail: Imm@ph.au.dk, tlf. 28494017.

Press release (English)

Polyunsaturated fatty acids in the diet and risk of atrial fibrillation

How do we analyze interaction between dietary factors in population studies? What is the importance of dietary fatty acids such as fish oils in relation to risk of the most common heart rhythm disorder, atrial fibrillation? Do genetics play a role for the association between diet and disease risk? The project was carried out by Lotte Maxild Mortensen, who is defending her dissertation on 10/5 2017.

Atrial fibrillation is a heart rhythm disorder with many contributing risk factors. One of these is elevated inflammatory level in the body. Polyunsaturated fatty acids, for example from fatty fish (omega-3) or from meat and eggs (omega-6), are involved in the regulation of inflammation. Therefore, the dietary intake of these fatty acids might affect the risk of developing atrial fibrillation. Previous studies have not been able to clarify the association but these have only looked at omega-3 fatty acids, and not taken omega-6 into account.

The thesis provides a comparative assessment of the bodys own synthesis of polyunsaturated fatty acids compared to the amount of polyunsaturated fatty acids obtained from the diet.

It also analyses the importance of

- the interaction between omega-3 and omega-6 fatty acids to the risk of atrial fibrillation
- the interaction between genetic variation in a selected gene and fatty acid intake in the diet of the risk of atrial fibrillation

The analyzes were carried out in data from a major population study "Diet, Cancer and Health" which were established in 1993-1997. Since then, more than 2000 participants had been diagnosed with atrial fibrillation. This is a high number of patients, which has given a good statistical power for the analyzes.

The defence is public and takes place on 10/5 at 13 in Aarhus University, Building 1262, Bartholins Allé 2, DK-8000 Aarhus C. The title of the project is "N-3 and n-6 polyunsaturated fatty acids: metabolic pathways, interaction and risk of atrial fibrillation". For more information please contact PhD student Lotte Maxild Mortensen, email, lmm@ph.au.dk, Phone +45 28494017

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