

## Press release

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### Basic information

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Department of: Clinical Medicine

Main supervisor: Prof. Vibeke E. Hjortdal

Title of dissertation: A small, unrepaired Ventricular Septal Defect - to care or not to care ?

Date for defence: 18 May 2018 at (time of day): 14.00 Place: Auditorium B, Aarhus University Hospital, Palle Juul-Jensens Blv. 99, 8200 Aarhus N

Press release (Danish)

Studie skaber ny viden omkring voksne født med et hul i hjertet

En ventrikel septum defekt (VSD) er den mest almindelige, medfødte hjertemisdannelse og ses som et hul i skillevæggen mellem hjertets to pumpekamre. Store defekter lukkes kirurgisk, mens patienter med små huller opfattes som raske, hvorfor størstedelen ikke modtager behandling og VSD'en forbliver åbentstående. Dog har flere registerbaserede studier opgjort en række langtidskomplikationer som kan have indvirkning på deres hjertes arbejdskapacitet. Dette er ikke tidligere studeret i voksenlivet.

Med dette studie er unge voksne med små, åbne VSD'er undersøgt med en arbejdstest og MR-skanning og sammenlignet med raske kontrolpersoner. En cykeltest har vist at i forbindelse med maksimal udmattelse udviser patienter med små VSD'er 20% nedsat arbejdskapacitet i forhold til de raske kontrolpersoner. En MR skanning har ligeledes fundet at pumpekamrene hos unge voksne med enten små, åbne eller kirurgisk lukkede VSD'er har ændret morfologi og findes større end pumpekamrene hos raske kontroller.

Resultaterne fra dette studie lægger op til yderligere forskning af de mulige mekanismer bag den fundne nedsatte arbejdskapacitet og ændrede morfologi. Ud fra disse resultater kan en medfødt VSD ikke længere blot opfattes som en medfødt banalitet.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 18/05 kl.14.00 i auditorium B, Aarhus Universitets Hospital, Palle Juul-Jensens Blv. 99, 8200 Aarhus N. Titlen på projektet er "A small, unrepaired Ventricular Septal Defect - to care or not to care?". Yderligere oplysninger: Ph.d.-studerende Marie Maagaard Sørensen, e-mail: [maagaard@clin.au.dk](mailto:maagaard@clin.au.dk), tlf. 40189099.

Bedømmelsesudvalg:

Formand for bedømmelsesudvalget: Jens Cosedis Nielsen, Overlæge, Professor  
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Bedømmer: Stephanie Fuller, Associate Professor,  
The Perelman School of Medicine at the University of Pennsylvania and the Children's Hospital of Philadelphia, USA

Bedømmer: Otto N. Krogmann, Head of Paediatric Cardiology,  
Heart Centre Duisburg, Evangelisches Klinikum Niederrhein, Duisburg, Tyskland

Press release (English)

## New study contributes with knowledge on adults born with a hole in their heart

A ventricular septal defect (VSD) is the most common, congenital cardiac defect and is seen as a hole in the wall separating the two pumping-chambers of the heart. The large defects are closed by surgery, while small defects are considered to be without any influence and so, the majority remains unrepaired their entire life. Nonetheless, a growing number of studies are describing late cardiac adverse consequences in adulthood that could potentially have an effect on cardiac morphology and functional exercise capacity. Yet, this has never been assessed in adulthood.

The current PhD project has investigated young adults with small, unrepaired VSDs during bicycle exercise and with MRI and compared them with healthy control subjects. During maximal exercise, patients with unrepaired defects demonstrated a 20% decreased exercise capacity compared with healthy peers. An MRI further revealed an altered morphology and larger chamber dimensions of the right pumping chamber of both the small unrepaired and surgically closed VSDs compared with healthy peers.

These results call for further investigation into these cardiac alterations and challenge the general assumption. A congenital VSD is not just an innocent bystander.

The defence is public and takes place on May 18, 2018 in Auditorium B, Aarhus University Hospital, Palle Juul-Jensens Blv.99, 8200 Aarhus N. The title of the project is "A small, unrepaired Ventricular Septal Defect - to care or not to care?". For more information, please contact PhD student Marie Maagaard Sørensen, email: maagaard@clin.au.dk, Phone +45 4018 9099.

Assessment committee:

Professor Jens Cosedis Nielsen - Chairman of the committee and moderator of the defence  
Department of Cardiology, Aarhus University Hospital, Denmark

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