AARHUS UNIVERSITY

# Press release

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## Basic information

Name: Laura Toussaint Email: laura.toussaint@oncology.au.dk Phone: 50187140

Department of: Clinical Medicine

Main supervisor: Ludvig Paul Muren

Title of dissertation: Quantifying and reducing doses to brain structures associated with cognition following cranial irradiation of childhood cancer through the use of proton therapy.

Date for defence: 02/06/2020 at (time of day): 14:00 Place: Zoom

Press release (Danish)

Kvantificering og reduktion af doser til hjernestrukturer associeret med kognition efter kraniel bestråling af hjernekræft i børn ved brug af protonterapi.

Pædiatrisk hjernekræftpatienter har høj risiko for at udvikle kognitiv forringelse efter behandling med stråling, som er associeret med reduktion i livskvalitet. Imidlertid er kendskabet om hjernestrukturer og deres forbindelse til kognitiv funktion og dosis-tolerance sparsomt. Dette ph.d.-projekt har derfor to primære komponenter:

- Kvantificering af dosis leveret til kognitiv hjernestrukturer som funktion af tumorlokation samt indflydelse deraf på hjerneanatomiske forandringer og estimeret kognitiv funktion for pædiatriske hjernekræftpatienter.
- Undersøgelse af kliniske strategier for protonterapi målrettet bevaring af kognitiv funktion.

Projektet er gennemført af Laura Toussaint, der forsvarer det d. 02/06/2020.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 02/06/2020 kl. 14:00. Grundet COVID-19 vil forsvaret blive gennemført som et web forsvar via Zoom. For at deltage i forsvaret skal du sende en mail til laura.toussaint@oncology.au.dk for at modtage en invitation med et link til Zoom.

Titlen på projektet er ”Quantifying and reducing doses to brain structures associated with cognition following cranial irradiation of childhood cancer through the use of proton therapy”. Yderligere oplysninger: Ph.d.-studerende Laura Toussaint, e-mail: laura.toussaint@oncology.au.dk, tlf. 50187140.

Bedømmelsesudvalg:
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(Chair of the Committee)

Press release (English)

Quantifying and reducing doses to brain structures associated with cognition following cranial irradiation of childhood cancer through the use of proton therapy.

Pediatric brain tumor patients are at high risk of developing cognitive impairment after treatment, which has been associated with a reduction in quality of life. However, knowledge on brain structures associated with cognition and their tolerance to radiotherapy dose is sparse. This PhD project had therefore two main components:

- Quantification of the dose delivered to cognitive brain structures as a function of tumor location, and of its impact on brain anatomy changes and estimated cognitive function for pediatric brain tumor patients.
- Investigation of clinical strategies for proton therapy cognition-preservation treatment planning.

The project was carried out by Laura Toussaint, who is defending her dissertation on June 2nd, 2020.

The defence is public and takes place on 02/06/2020 at 14:00. Due to COVID-19, the defence will be held online via Zoom. Please contact PhD student Laura Toussaint (laura.toussaint@oncology.au.dk) to receive a link to participate in the defence online.

The title of the project is 'Quantifying and reducing doses to brain structures associated with cognition following cranial irradiation of childhood cancer through the use of proton therapy'. For more information, please contact PhD student Laura Toussaint, email: laura.toussaint@oncology.au.dk, Phone +45 50187140.

Assessment committee:
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