Postdoc in image-based analysis of neurovascular and neurocognitive changes after radiotherapy of childhood brain tumours

Application Deadline:
26 March 2026

Institute/Faculty:
Department of Clinical Medicine

Faculty:
Faculty of Heatlh

Academic contact person:
Ludvig Muren
Professor
muren@clin.au.dk

Vacant positions:
1

Number of months:
24

Hours per week:
37

Expected date of accession:
01/05/2026

The Department of Clinical Medicine at Faculty of Health at Aarhus University invites applications for a postdoc position in the field of medical physics, within the topic image-based analysis of neurovascular and neurocognitive changes after radiotherapy of childhood brain tumours, as per May 1, 2026 or as soon as possible thereafter (after agreement). The working place for the postdoc will be the Danish Centre for Particle Therapy (DCPT) at Aarhus University Hospital. The position is a fixed-term full-time position, for two years.

At the Department of Clinical Medicine, you will be part of what is probably the largest health science research department in Denmark. Our clinical research covers all medical specialities and takes place in close collaboration with Aarhus University Hospital and the regional hospitals in the Central Denmark Region. We have approx. 30,000 square metres of modern research facilities for experimental surgery and medicine, animal facilities, and advanced scanners at our disposal. The department has overall responsibility for the Master's degree programs in medicine and in molecular medicine. At the department we are approx. 425 academic employees and the same number of PhD students cooperating across disciplines. As a postdoc, you will be affiliated with the Department of Clinical Medicine, but your workplace will be at DCPT and Aarhus University Hospital. You can read more about the department here and about the Health faculty here.

DCPT is a national centre, responsible for proton therapy of all relevant Danish cancer patients, having been in operation since January 2019. We have a front-line proton therapy spot scanning delivery system, and we are treating patients in three gantry rooms. In addition, we have an experimental room (with a horizontal beamline) for technical, physical and biological pre-clinical studies. The research staff connected to DCPT currently include five full-time professors in medical physics, two clinical professors (MDs), one full-time professor in radiobiology, and eleven associate/assistant professors in medical physics or oncology (most of the latter in part-time positions, in combination with a position in the clinic). We currently have ten PhD students and nine postdocs connected to DCPT, primarily funded by external grants, as well as a number of master and bachelor students, that together make essential contributions to our research environment. There is overall a close collaboration between the academic and the clinical staff at DCPT.

About the research project

The research project of this postdoc will be based on follow-up data from a cohort of survivors after radiotherapy of childhood brain tumours. The project will examine with which frequency and at what degree neurovascular changes develop after treatment. The survivors will undergo a clinical examination, they will complete several questionnaires regarding key parameters in quality of life, they will undergo psychoneurological (cognitive) testing, they will be subject to MRI scans with vascular sequences and finally serological markers linked to neurovascular function from blood samples will be analysed. Two clinical (pediatric/radiation oncology) PhD projects closely connected with the present medical physics postdoc position are currently starting. The role of the postdoc will be to study radiation treatment plans in relation to substructures in the brain, to build models to better understand the relation between radiation doses and neurovascular effects and to develop proton therapy planning strategies to mitigate these effects. The project will be performed in a close multidisciplinary teamwork of pediatric oncologists, radiation oncologists, medical physicists, neuropsychologists, neurovascular radiologists, neurologists and radiobiologists.

Your job responsibilities

As postdoc your position is primarily research-focused but is also likely to involve teaching assignments. Teaching/supervision experience is therefore also a benefit. You will contribute to the development of the department through research of high international quality. In your daily work, you will work closely with colleagues on your project, where you will receive and provide mentoring and guidance.

Your main tasks will consist of:

- Independent research of high international quality, including presenting and publishing this work at conferences and in leading journals in the field

- Contributing to building and strengthening of our research environment, specifically by establishing the area of the present project as a leading clinical research theme of DCPT
- Contributing to the education and mentoring of undergraduate students (e.g. bachelor and master students)

You will report to Professor Ludvig Paul Muren at DCPT and the Department of Clinical Medicine.

Your competences

You have academic qualifications at PhD level, e.g. in medical physics, physics, biomedical engineering or computer science. It is mandatory that your PhD degree is on a topic relevant for this specific position, e.g. in medical image-based analysis or in analysis of radiotherapy or proton therapy treatment plans. You should have a strong theoretical background in physics and medical physics, and you should have proven experience (through published papers) with the above topics. A high level of coding competences will be beneficial. If your PhD is not yet completed, please document that your thesis will be submitted before the start date of the position.

As a person, you have good interpersonal skills, are inclusive and team-oriented and able to contribute to a good work environment. We expect you to be fluent in oral and written English.

In order to be assessed as qualified for a Postdoc position, you must meet these academic criteria.

Shortlisting will be used.

Questions about the position

If you have any questions about the position, please contact Professor Ludvig Paul Muren, tel.: (+45) 30593088.

Your place of work will be the Danish Centre for Particle Therapy, Aarhus University Hospital, Palle Juul-Jensens Blvd. 25, 8200 Aarhus, Denmark.

Terms of employment

- Appointment as a postdoc requires academic qualifications at PhD level.
- Further information on the appointment procedure can be found in the Ministerial Order on the Appointment of Academic Staff at Universities.
- The appointment is in accordance with the Danish Confederation of Professional Associations (Akademikerne).
- Remuneration is in accordance with the above, and the Salary agreement catalogue for staff at Health.
- The yearly base salary for a fulltime postdoc is between DKK 484.214,84 and DKK 538.720,20 depending on the years of working experience after achieved MSc degree. The base salary includes a position related supplement and pension (17.1 %). Additional supplement(s) for special qualifications can be negotiated. Authorisation supplemement(s) will be granted, if relevant for the position. Your local eligible trade union representative at Aarhus University negotiates your salary on your behalf.
- Researchers recruited from abroad are offered a special researcher tax scheme with a lower tax rate.
- Further information on qualification requirements and job description can be found in the Ministerial Order on Job Structure for Academic Staff

Application

Your application must include the following:

- Motivated application
- Curriculum Vitae
- Diploma

- Template for applicant - postdoc
- A list of publications
- A teaching portfolio. We refer to Guideline on the use of teaching portfolios
- A maximum of five of the publications of greatest relevance to the job may be submitted (optional)
- Research plan can be uploaded (optional)
- Coauthor statement(s) can be uploaded (optional)
- References/recommendations can be uploaded separately in the e-recruitment system (optional)

We refer to the faculty's Guidelines for applicants.

Aarhus University's ambition is to be an attractive and inspiring workplace for all and to foster a culture in which each individual has opportunities to thrive, achieve and develop. We view equality and diversity as assets, and we welcome all applicants.

International applicant?

Aarhus University offers a broad variety of services for international researchers and accompanying families, including assistance with relocation and career counselling to expat partners. Please find more information about the International Staff Office and the range of services here. Aarhus University also has a Junior Researcher Association and offers career development support. You can read more about these resources here.

The application must be submitted via Aarhus University's recruitment system, which can be accessed under the job advertisement on Aarhus University's website.

Aarhus University

Aarhus University is an academically diverse and research-intensive university with a strong commitment to high-quality research and education and the development of society nationally and globally. The university offers an inspiring research and teaching environment to its 38,000 students (FTEs) and 8,300 employees, and has an annual revenues of EUR 935 million. Learn more at www.international.au.dk/