Postdoc in skeletal muscle excitability and Myotonic Dystrophy

Application Deadline:
01 March 2026

Institute/Faculty:
Department of Biomedicine

Faculty:
Faculty of Heatlh

Academic contact person:
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Vacant positions:
1

Number of months:
36

Hours per week:
37

Expected date of accession:
01/04/2026

The Department of Biomedicine at Faculty of Health at Aarhus University, Denmark invites applications for a position as Postdoc in the field of neuromuscular research and molecular muscle biology as per 1 April 2026 or as soon as possible thereafter. The position is a fixed-term full-time position for 36 months.

Research at The Department of Biomedicine aims to expand knowledge in diverse areas of biomedicine including infection and inflammation, membranes, neuroscience and personalized medicine. Neuromuscular physiology and neuromuscular diseases are some of the research areas at The Department and the current position is anchored in a laboratory lead by Associate Professor Thomas Holm Pedersen. The focus of the laboratory is neuromuscular disease and underlying disease mechanism. In particular, the work in the Pedersen lab focusses on ion channels and their role in several neuromuscular diseases characterized by abnormal muscle excitability. Experimentally, the work involves electrophysiology, imaging, muscle contractions, and molecular studies of ion channels and cellular signaling using a combination of *in vitro* and *in vivo* assays.

About the research project

This research project will explore the role of hyperexcitability and myotonia for muscle wasting in myotonic dystrophy 1 (DM1). It has recently been suggested that skeletal muscle action potentials (APs) not only trigger muscle contraction but also regulate gene expression programs responsible for muscle adaptation through excitation-transcription (ET) coupling. In DM1, uncoordinated AP firing likely distorts ET coupling, disturbing gene expression, inducing excitotoxic Ca2+ signalling and promoting muscle atrophy. This reframes hyperexcitability from a symptom to a driver of disease progression and highlights new treatment opportunities. This project will test how abnormal AP firing disrupts ET coupling and whether pharmacological correction of excitability can restore healthy ET coupling and reverse muscle wasting.

Your job responsibilities

As Postdoc in neuromuscular research and molecular muscle biology your position is primarily research-based but may also involve teaching assignments. 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 supervision and guidance.

Your main tasks will consist of:

- Independent research of high international quality, including publication
- Transcriptomics and molecular analysis of skeletal muscle
- Analysis of signaling pathways linking muscle excitability to gene regulation
- Electrophysiological characterization of muscle fiber excitability (in collaboration with the research group)
- *In vivo* studies using animal models of neuromuscular disease
- Integration of molecular and transcriptomic data with functional muscle phenotypes
- Investigation of pharmacological modulation of muscle excitability and downstream molecular responses

You will report to Associate Professor Thomas Holm Pedersen.

Your competences

You have academic qualifications at PhD level, for example within one or more of the following areas: Neuromuscular research, molecular muscle biology, transcriptomics or gene regulation. Further, experience with electrophysiological techniques both *ex vivo* and *in vivo* will be preferred.

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 Associate Professor Thomas Holm Pedersen tel.: (+45) 30739514.

Your place of work will be the Department of Biomedicine, Neuromuscular Physiology

Aarhus, Palle Juul-Jensens Boulevard 82, DK-8200 Aarhus N, Denmark.
We expect to conduct interviews during March 2026.

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/