



THE SAHLGRENKA ACADEMY
INSTITUTE OF NEUROSCIENCE AND PHYSIOLOGY

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Announcement - scholarship at undergraduate/advanced level

The Department of Physiology, Institute of Neuroscience and Physiology, hereby announces a vacant scholarship at undergraduate/advanced level in “Impact of embryonic androgen exposure on behavior in zebrafish”.

Training plan

Background: Polycystic ovary syndrome (PCOS) is a common endocrine metabolic disorder associated with severe symptoms of anxiety and depression. The key feature of PCOS is excess androgen production, known as hyperandrogenism. High circulating androgen levels have been found in pregnancies of women with PCOS, potentially affecting the fetus and increasing the risk of neuropsychiatric disorders. Elevated PNA exposure may cause permanent alternations in the brain by masculinization of brain structures, which may explain increased risk of the male-predominant neuropsychiatric disorders in children born to women with PCOS. Although there are limited studies on how testosterone affects anxiety and depression in females, potential brain sites associated with anxiety are the amygdala, hypothalamus, and hippocampus. Previous research on PCOS has mainly used mammalian models. Recently, zebrafish (*Danio rerio*), a vertebrate sharing 70% homology with humans, has emerged as an alternative animal model.

Purpose: The aim of this current study is to investigate whether embryonic androgenization causes anxiety and depression-like behavior in zebrafish, as we hypothesized that hyperandrogenism causes anxiety in females via central mechanisms. Findings will provide insights into how early androgen exposure shapes neural circuits and behavior in females, and its potential association with anxiety phenotypes.

Method: The zebrafish embryos will be exposed to three different testosterone concentrations or vehicle control. At the age of 30 days post fertilization, the zebrafish will undergo three different behavioral tests to assess their social and anxiety-like behavior. Their behavior will be recorded and analyzed using the software Observer 16 XT and EthoVision 13 XT.

Time plan: 4 weeks starting June 29 2026

Learning outcome: To independently be able to analyze social interactions and anxiety-like behavior in zebrafish. The student will receive hands-on training. This training position comes with a stipend, that does not represent a salary and the activities performed are not regarded as work.

Period

2026-06-29 to 2024-07-24

Financing

1 payment of 13 000 SEK. A total of 13 000 SEK for the whole period

If you require any further information, please contact Anna Benrick, anna.benrick@gu.se, supervisor.

Application

To apply please fill out the form “Scholarship application” and send it to Anna Benrick, anna.benrick@gu.se, supervisor.

Please attach a copy of:

CV

Letter of motivation

Closing date is 2026-06-24.