

Master project about white matter lesion prediction in patients with Fabry disease.

To master students that are looking for a research project.

Fabry disease is a rare lysosomal storage disease, affecting several organs including the brain. A common finding in this disease is the presence of white matter lesions (WML). Although an imaging biomarker for WML formation has not yet been found, this could provide valuable information on which patients are at particular risk and require early treatments. Changes in diffusion are thought to precede the development of WMLs in patients with Fabry disease due to the impairment in the formation of nitric oxide, a protective molecule in the vasculature. Therefore, diffusion-weighted imaging (DWI) might detect tissue at risk earlier than commonly used fluid attenuated inversion recovery (FLAIR) acquisitions.

In the Amsterdam UMC (location AMC), patients with Fabry disease receive a yearly follow-up MRI examination including a FLAIR and DWI acquisition. Therefore, a unique longitudinal dataset has been collected that could provide information on whether changes in diffusion precede the development of WMLs in patients with Fabry disease. The goal of this project is to analyze the available data and to investigate the predicting value of DWI in patients with Fabry disease.

We are looking for a master's student who wants to do their research project with us. You are highly motivated, your interests lie with image analysis and MR physics and you have a background in biomedical sciences or biomedical engineering and physics (or similar). This project will take at least six months. As this project will require a lot of programming in matlab, experience with matlab is required.

If you are interested in doing this project, please send your motivation and resume to:

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