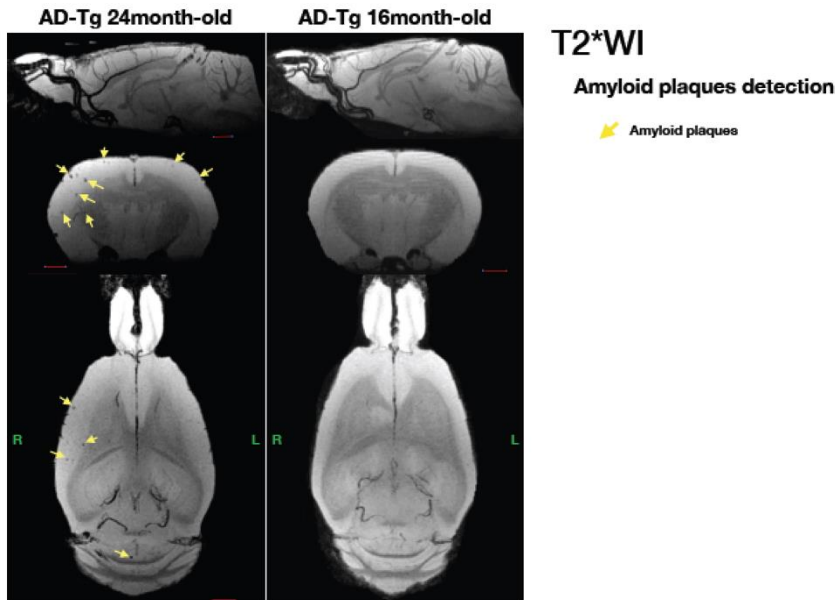


2018 report to the Olav Thon Foundation from Maiken Nedergaard and Erlend Nagelhus

We have established a large breeding colony of the unique rat model of Alzheimer disease (AD-Tg). We have also progressed fast on the analysis of glymphatic fluid transport in AD-Tg and littermate control rats. Optical data on glymphatic function has been collected and are



currently analyzed blindly. We have also initiated an MRI analysis to map the occurrence of amyloid plaques in the rats. We plan to combine mapping of contrast agent influx infused in the cerebral spinal fluid at the level of cisterna magna in AD-Tg rats with imaging of amyloid plaques. The studies will for the first time establish the direct role of amyloid plaques on local glymphatic activity.

Furthermore, we have performed 2-photon imaging

of Ca^{2+} signals in cortical astrocytes of AD-Tg and control mice (15 mice in total). We are now analyzing these signals using newly developed custom-made software. We will determine whether abnormal Ca^{2+} signaling pattern is a feature of AD-Tg mice. This part of the study is expected to be completed in 2019.