

ETM/401 - Preliminary Evaluation of the Therapeutic potential of Lithium in mild cognitive impairment

Lithium has been used for decades to treat Bipolar Disorder. Some of its therapeutic benefits are through the inhibition of the enzyme GSK3. GSK3 activity is associated with the development of several aspects of Alzheimer's disease (AD) and thus lithium can regulate an enzyme linked to AD development. As an important step towards designing a clinical trial for AD prevention we propose to establish the dose of lithium needed to block GSK3 in people with Mild Cognitive Impairment (MCI), a high-risk condition for progression to AD. We will check whether GSK3 activity is altered in MCI and monitor lithium safety in this population. At the same time we will investigate how GSK3 measure in blood relates to GSK3 activity in the brain in a small animal study. The project is designed to generate critical information to design and justify a robust trial on lithium prevention of MCI conversion to AD.