

Applicant

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Project Title

Investigating novel targets and inflammatory pathways of cognitive decline in the CLSA

Project Summary

Dementia is a brain condition which causes problems with thinking and memory. It gets worse over time and affects the ability to perform daily activities. Dementia is a major global problem and the number of people with dementia will continue to grow due to the ageing population. Effective treatments for dementia are lacking, and its causes are not fully understood. However, it is known that a prolonged period of cognitive decline precedes the onset of dementia.

There is a possibility that higher inflammation leads to greater cognitive decline, but this has not been definitively proven. We also don't know the pathway by which inflammation causes cognitive decline, but one possibility is the build-up of plaque in arteries leading to the brain (carotid thickness). We will use blood samples to detect inflammation in the blood and use ultrasound to pick up levels of carotid thickness. We will analyze detailed cognitive tests at study entry and later on to measure cognitive decline. We will look at whether inflammation is strongly related to cognitive decline, and whether one of the pathways involves greater carotid thickness. This understanding will open avenues to see if we can prevent cognitive decline using treatments that bring down inflammation.

Keywords

atherosclerosis, biomarkers, cognition, cognitive decline, inflammation, mediation, population health