Early brain changes in mid-life and cognition

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Project Description:

Dementia is the most common age-related disease with a severe impact on elderly, caregivers, and healthcare system. The current lack of effective interventions in ameliorating cognitive decline calls for research into its causes and mechanisms so that novel therapeutic targets can be identified and new therapies developed for effective treatment of this devastating disease before the development of clinical symptoms and signs. Limited data suggests that subclinical brain changes are among the most impactful predictors of cognitive decline as people age. The identification of early subclinical biomarkers for vascular and neurodegenerative changes in middle-age is of interest as brain dysfunction is present many years before overt-symptoms of dementia. Currently, there is no data from Asia including Singapore. Our overall aim is to understand the determinants and aetiology of brain changes in a subclinical phase of cognitive impairment including data on lifestyle factors, brain imaging and blood biomarkers in a middle-aged multi-ethnic population in Singapore. We hypothesize that multi-modal factors measured in midlife can predict future cognitive decline in community-dwelling adults.

This research will identify new opportunities to improve public health policies, resulting in better interventions and management of cognitive decline at an early stage.

This project is open to only PhD students.