**Does cardiometabolic health moderate the relationship between dietary patterns and cognitive outcomes in a healthy, community-dwelling group of older Australians?**

**Abstract**:

**Objectives**: Dietary patterns are associated with cardiovascular risk factors and cardiovascular disease (CVD) endpoints. Vascular risk factors and CVD are increasingly being recognised as having an important role in cognitive decline and dementia risk. Understanding the vascular mechanisms that may link diet and dementia is particularly important in older adulthood given the increased cardiovascular risk associated with that cohort and given that effective dementia treatments are lacking.

**Aim**: This study aims to examine whether cardiometabolic health moderates the relationship between dietary patterns and cognitive performance among healthy older Australian adults

**Design**: A cross-sectional analysis of the baseline phase of the ACTIVate study, which aims to characterise the optimal composition of modifiable lifestyle factors on brain health and cognitive decline.

**Participants**: The study recruited 424 community-dwelling Australians, aged 60-70, without cognitive impairment (screened with the Montreal Cognitive Assessment). Participants were recruited by the University of Newcastle and the University of South Australia.

**Method:** The Australian Eating Survey (AES) Food Frequency Questionnaire was used to collect dietary data, with additional questionnaire including oil consumption. A Principal Component Analysis was applied to the food survey data. Three patterns were identified, related to a healthy plant-rich diet, a Western-Style Diet, and a healthy meat-eating diet. Metabolic risk was assessed using the metabolic syndrome severity score (MetSSS) and inflammation (C-Reactive Protein). The Cambridge Neuropsychological Test Automated Battery (CANTAB) was used to assess cognition, whereby four cognitive domain components were determined.

**Results**:

***Keywords***: Ageing, cardiovascular risk, cardiovascular disease, diet, dietary patterns

**Design**

**Research question**

How do dietary patterns derived by data-driven approaches associate with cardiovascular risk factors and disease in a community-dwelling group of older Australians?

**Independent variables**

* IV 1: Principal component 1 “Med / plant diet” (derived by principal component analysis)
* IV 2: Principal component 2 “Western Style-diet” (derived by principal component analysis)
* IV 3: Principal component 3 “Aussie traditional / meat-predominant” (derived by principal component analysis)

**Dependent variables**

* Processing Speed
* Attention
* Short term memory
* Long term memory

**Moderators**

* Metabolic syndrome score (composite score involving systolic/diastolic blood pressure, triglycerides (mmol/L), HDL (mmol/L), Waist circumference, blood glucose (mmol/L))
  + I have created a score based on Wiley & Carrington (2016) – may consider other variations.
* C-Reactive protein

**Covariates** includedBMI, education,past education, total energy intake (based on AES), total time spend in physical activity, age, gender, possibly Framingham, also have a series of micronutrients, or core food groups based from the ARFS (could do exploratory post-hoc analysis)