**Dietary Interventions to Improve Cognitive Function and Dementia Risk: Development of an Intervention Taxonomy to Describe Essential Features of Dietary Interventions**

**Context**

Dementia is the leading cause of death in the UK and one of the fastest growing and costliest non-communicable diseases across the globe. Once diagnosed, pharmacological treatments show little effectiveness and there is currently no cure for dementia. A large body of evidence highlights the role of inflammation and insulin resistance in the progression of dementia prompting a surge in nutrition-based dietary interventions that modulate these risk factors. While prior reviews suggest promising results of dietary interventions for the prevention of dementia, interventions and outcome measures are highly heterogenous, which has precluded definitive meta-analyses in the field.

**Research context**

No known review has explored or assessed the sources of heterogeneity among studies or identified key features of dietary interventions that need to be considered for improving intervention design, enhancing replication, and improving the quality of evidence syntheses. This project entails comprehensively reviewing and critically appraising the sources of variability in study outcomes (e.g., baseline risk factors, diversity of study populations) and identifying intervention factors (e.g., type of diet, duration, compliance) that contribute to heterogeneity, providing more precise recommendations for future behavioural interventions and clinical practice targeting dementia prevention.

**Research project**

This project will develop a comprehensive understanding of the effectiveness of diet-based interventions on cognition, including the development of a standardized classification system (taxonomy) that can describe the essential features of dietary interventions. Such a taxonomy will aid researchers, healthcare professionals, and policymakers in streamlining the design, implementation, and evaluation of precision-based dietary strategies aimed at improving cognitive health and reducing dementia risk. An intern on this project will gain valuable research and professional experience. They will learn how to conduct systematic reviews and meta-analyses, enhancing their skills in literature searching, data extraction, and statistical analysis. The intern will learn how to develop a standardized taxonomy for categorising dietary intervention components that improve cognition, learning to code and systematically organise complex data. They will gain proficiency in using statistical software and visualising data, preparing them for advanced research roles.

This internship is expected to be 1.5 - 2 days a week over 12 months.