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**Project Title**

Examining reciprocal relationships of cognition with BMI, diabetes and diet

**Project Summary**

Cognitive health is an utmost public health priority considering the growing burden of older people worldwide. Two prevalent chronic conditions, obesity and type 2 diabetes mellitus (T2DM), are strongly associated with cognitive decline. In fact, the presence of these chronic conditions in early-age can significantly increase the risk of cognitive impairment and dementia in later life. In addition to these, diet is a crucial factor that not only related to obesity and T2DM but may exert a lasting effect on cognition. To date, very little is known about the prospective relation of cognition and obesity, T2DM and diet. In this study, we aim (i) to examine reciprocal associations between executive function and BMI over time, testing food consumption (hyperpalatable vs. healthy) as a mediator of any prospective associations identified, and (ii) to test whether the mediational model is supported in those with and without T2DM.

**Keywords**

BMI, Obesity, Diabetes, Hyperpalatable food, Calorie-dense food, Healthy diet, Hyperglycemia, Cognition, Cognitive function, Executive function, Cognitive impairment