

Projects funded by the Michael Mosley Memorial fundraiser.

1. Exploring heterogeneity in diet, menopause, and metabolic ageing resilience in women: insights from the ZOE PREDICT 3 cohort

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Co-applicants: Prof Wendy Hall, Prof Sarah Berry, Dr Amal Khanolkar

This project explores how diet may shape women's experiences of menopause and their long-term metabolic health. Menopause affects women differently, yet advice is often "one-size-fits-all." Using data from over 140,000 women in the ZOE PREDICT 3 study, we will examine how everyday eating patterns relate to symptoms such as hot flushes, sleep and mood changes, alongside measures of blood sugar, cholesterol and weight. We will use advanced data analysis to identify different health patterns across diverse groups of women. Our goal is to inform more personalised dietary guidance to support healthier ageing during and after menopause

2. Utilising Microbiome Metabolomics to Understand How Bacterial Folate Status May Drive Ageing

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We want to know whether folate made by gut bacteria affects human health and ageing. Many gut bacteria make folate. Reducing this bacterial folate in laboratory models can slow ageing and reduce harmful bacterial behaviour. In the lab, we will grow bacteria with carefully controlled folate levels and measure related metabolic changes to identify markers that reflect bacterial folate production. We will then use these markers in an existing dataset of 200 people to explore links between bacterial folate levels, age and health markers. This could inform safer supplementation and new strategies to improve healthy ageing.

3. Use of GLP-1RAs and dual GLP-1/GIP receptor agonists in a longitudinal population cohort: epidemiological overview, molecular correlates, and health outcomes of injectable weight loss therapy use

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Powerful incretin-based injectables such as semaglutide and tirzepatide are transforming weight loss and diabetes management, yet we know little about how they are used in the population or how they affect healthy ageing, especially after stopping. We will survey TwinsUK participants with a dedicated questionnaire to map who uses these medicines, which drugs and doses they take, for how long, and how they access them. We will assess how use varies among participants and what early changes are reported in weight, mood, muscle health, and side-effects. We will then link this to TwinsUK's multi-omic and biobank resources to support longer-term studies.