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**Hunger sharpens your
body and mind ”**

– Dr Alby Elias



World-first human trial investigates time-restricted eating to protect against dementia



What is the focus of the research?

Exploring whether time-restricted eating (TRE) delays cognitive decline in people at high risk of dementia.



Why is it important?

Dementia is the second-leading cause of death in Australia and there is no cure. There are many types of dementia and without any effective medical treatments, we urgently need to explore other interventions that delay disease progression.

Time-restricted eating, a form of intermittent fasting, has wide-ranging benefits across multiple health conditions, and there is growing consensus in the scientific community that it may protect against cognitive decline. Time-restricted eating has positive effects on the health of blood vessels, brain cells and the body's process of dealing with old and

damaged cells. These factors all play crucial roles in neurodegenerative diseases.

Importantly, time-restricted eating is associated with the removal of the brain protein beta amyloid – a hallmark of Alzheimer's disease. Fasting has also been shown to reduce many biological risk factors for age-related diseases. Although these results are promising, most studies have been conducted on animals. For the first time, Dr Elias will investigate the role of time-restricted eating in reducing the risk of dementia and cognitive decline in humans. He will conduct a randomised controlled pilot trial investigating the feasibility, acceptability and safety of time-restricted eating in people at high risk of dementia (they have a first-degree relative living with dementia).

This project is significant because it is being carried out on humans. This means that if time-restricted eating is successful in preventing or delaying the onset of dementia, it can be an easily implemented lifestyle intervention that is accessible to everyone.



How will this happen?

Stage 1: recruit 25 people with family members affected by dementia to co-design the trial. Survey them to find out 1) their knowledge of TRE; 2) their perceived tolerability of TRE; 3) how long they predict they could fast for; and 4) how long they could tolerate participating in cognitive assessments. Researchers to design the trial based on their answers. Fasting duration will be 14-18 hours, depending on participant preferences and expert advice.

Stage 2: recruit 50 people aged 60-80 with an immediate family member living with dementia. Randomly divide them into either the TRE or regular eating group. Researchers to measure cognition, bodyweight and biomarkers of dementia before and after. The study will run for six months.



What will this mean for the future?

- A reduction in the incidence of dementia.
- A non-pharmalogical treatment to prevent cognitive decline.
- A sustainable lifestyle intervention that protects against multiple other conditions.



Time-restricted eating, explained

Time-restricted eating is a pattern of eating, rather than a diet. Calories are restricted not by changing the type of food you eat, but rather the times you eat. Generally, you consume your normal diet within a specific window of time, then fast for the remaining hours in the day. The most widely studied method is 16:8 – eat for eight hours and fast for 16. When you start/finish your eating window will depend on your schedule and lifestyle.

However, 16:8 is not a magic number. When time-restricted eating was first being studied in mice, the laboratory assistant's wife gave him a strict curfew. Feeding the mice for eight hours meant he was home in time for dinner. So, longer or shorter eating and fasting windows may be just as beneficial.

Studies have shown time-restricted eating is beneficial for coronary heart disease, obesity, rheumatoid arthritis, gut microbiome, type 2 diabetes, sleep duration and blood pressure.



Who's undertaking the research?

Dr Alby Elias, The University of Melbourne

Dr Elias is a psychiatrist with an advanced training certificate in psychiatry of old age. In 2011, he was awarded the Fellowship of the Royal Australian and New Zealand College of Psychiatrists. He also completed a visiting fellowship at the University of Columbia, New York.

Dr Elias received his PhD in dementia and post-traumatic stress disorder from The University of Melbourne, where he is now an honorary senior fellow in the department of psychiatry. He has conducted research in electroconvulsive therapy and published his work in leading international journals. Dr Elias was previously an associate editor of the *Journal of Alzheimer's Disease*.

In 2017, he received the Alzheimer's Association International Travel Fellowship Award at the Alzheimer's Association International Conference in London.

The title of Dr Elias's project is *Time-Restricted Eating Alzheimer's Trial (TREAT): A randomised controlled pilot study in a population at risk of dementia*.

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