

**Title: Identifying behavioural mediators in the Luci Lifestyle intervention: baseline data from an ongoing efficacy study for dementia prevention**

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**Background:** Luci is a digital, multidomain, coach-assisted, behavioural intervention designed to improve eating habits, physical activity, and cognitive engagement for dementia risk reduction. Understanding the drivers of behaviour change is essential to interpret engagement and intervention effects. Accordingly, key hypothesised mechanisms of change in the Luci intervention were identified.

**Objectives:** To describe baseline potential behavioural mediators in participants of the Luci efficacy study.

**Methods:** This ongoing 52-week randomized clinical trial enrolled 368 cognitively healthy, at-risk older adults. Readiness to change was measured using a stage-of-change approach, motivation with the Treatment Self-Regulation Questionnaire (TSRQ), self-efficacy with the General Self-Efficacy Scale (GSE), and dementia literacy with a questionnaire assessing knowledge on the condition and on risk factors.

**Results:** Most participants were classified in the action or maintenance stages (66.0%), indicating advanced readiness for behaviour change. Autonomous motivation was high as measured by the TSRQ (mean=6.4, SD=0.8), suggesting predominantly self-determined engagement toward lifestyle change. Mean GSE score was 33.9 (SD=4.1), reflecting high perceived self-efficacy to change health habits. About one third of participants (32.1%) rated their knowledge of dementia as good or very good. Six out of 13 well-known modifiable risk factors were recognized by a majority.

**Conclusion:** At baseline, participants show advanced readiness to change, predominantly autonomous motivation, and strong self-efficacy, but relatively limited knowledge of dementia. The potential mediating role of these factors in subsequent behaviour change will be examined.

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