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## Evaluating individual differences in a food based approach to increase egg and protein intake in older adults.

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### Abstract

A randomized controlled intervention study was undertaken to increase egg and protein intake in community-dwelling adults over 55 years old. During a 12 week intervention, recipes for protein-rich egg-based meals and single-use herbs/spice packets were provided to 53 individuals in the intervention group to promote the addition of flavour and variety to the diet. Egg intakes increased by 20%, and this increase was sustained up to 12 weeks after the end of the intervention. Exploratory analyses however revealed some individual differences within the intervention group, where some participants increased their egg intake and others did not.

We compared the participants who increased their egg intake to those who did not on several demographic characteristics and baseline outcomes, and explored the qualitative feedback related to recipe use collected after the intervention.

Results show that the participants who increased their egg intake during the intervention ( $n = 27$ ) had a significantly higher BMI ( $U = 402, p = .035$ ), a lower health-related quality of life ( $U = 198, p = .047$ ), and take external reports and recommendations about eggs and health from media and health professionals more seriously ( $U = 399, p = .038$ ) than those who did not increase egg intake. Those who increased their egg intake during the 12 week follow up period ( $n = 19$ ) reported a lower availability of eggs during their upbringing ( $U = 371, p = .041$ ), with no other differences between the groups.

Feedback from the whole group showed that reasons for choosing to use or not use the recipes were based on preferences, culinary skills, time/effort to prepare the meal, having ingredients already in the cupboard, the importance of variety, habits and familiarity, and the portion sizes, which were generally considered too large. The recipes used most often included ingredients that are more traditionally combined with eggs in the English diet (e.g. cheese/ham), while the recipes used least often were more unfamiliar (e.g. Turkish eggs with yoghurt).

Our study used recipes that specifically focus on eggs, but our findings suggest that recipe based interventions in this age group may be particularly beneficial for those with a higher BMI, those who may feel their health could be improved, those who are more likely to respect external advice, and those who have less early experience with the included foods. Greater future benefit may also be obtained from recipes that are for smaller dishes, using familiar ingredients, and that cater to a range of culinary skills and preferences.

### Conflict of Interest

There is no conflict of interest