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Increased protein intakes following the addition of sauce to an older persons' lunch meal are not sustained

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Protein-specific under-nutrition is considered to affect 10–20% of UK older adults[1], with potential detriments to health and wellbeing[1,2]. This under-nutrition is considered to result, at least in part, from low protein intakes[1,3]. Strategies for increasing protein intakes include the use of protein supplements, the development of usual foods through protein fortification or improvements in appeal or use, and the improvement of usual dining experiences[3,4]. Our studies demonstrate increased protein intakes in older adults following the addition of sauce to a lunch meal[5,6]. While effects were demonstrated in the one meal however, any benefits may be easily reduced by compensation or adjustment at the next meal. This study investigated the impact of the addition of sauce to an older persons' lunch meal on intake at that and at the following meal.

Using a repeated measures design, 56 community-dwelling older adults consumed a lunch meal with sauce and a lunch meal without sauce on two separate occasions, and intake at lunch and at the following evening meal were measured. Lunch meals in both conditions (chicken, sweetcorn, carrots, mashed potatoes) were identical, excepting the addition of sauce in the sauce condition. Evening meals were a buffet meal (bread, cheese, ham, salad, crisps, condiments, cakes, biscuits, fruit). Participants were free to consume as much or as little as they wished from all meals, and amount consumed was determined by weighing.

Analyses were conducted for fifty participants using only the foods consumed in the core lunch meal (i.e. not including the gravy). At the lunch meal, significantly more protein was consumed with sauce compared to without sauce (means: 35 ± 15 g vs. 31 ± 15 g, ($t(49) = 2{\cdot}20$, $p = 0{\cdot}03$). Effect sizes however are small, no effects were found in any of the other measures of the meal (largest energy: ($t(49) = 1{\cdot}62$, $p = 0{\cdot}11$), and effects were not sustained when intake at the next meal was included in analyses (means: 59 ± 19 g vs 56 ± 20 g, $t(49) = 1{\cdot}69$, $p = 0{\cdot}10$).

These findings suggest that the addition of sauce to an older persons' lunch meal can increase protein intakes at that meal, but that this effect is not large enough to be sustained to include intakes at the next meal. The increased intakes at the lunch meal replicate those of previous studies[5,6], and have previously been attributed to improvements in taste[6]. These effects however were compensated for by intake at the next meal. These findings suggest that improvements in taste only impact on intakes at the time of the improved taste. Secondly, these findings suggest that for sustained increased protein intakes, either improvements in taste need to be made at more than one meal, or that other strategies may be more beneficial[4]. Investigations into alternative strategies to increase protein intakes in older adults are required.

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