



**HAL**  
open science

## DIY protein fortification: what foods are suitable for UK older adults to fortify at home?

Rachel Smith, Lisa Methven, Miriam Clegg, Alexia Geny, Øydis Ueland, Guro Helgesdotter Rognså, Ida Synnøve Grini, Claire Sulmont-Rossé

### ► To cite this version:

Rachel Smith, Lisa Methven, Miriam Clegg, Alexia Geny, Øydis Ueland, et al.. DIY protein fortification: what foods are suitable for UK older adults to fortify at home?. 36. EFFoST International Conference, Nov 2022, Dublin, Ireland, United Kingdom. hal-04210119

**HAL Id: hal-04210119**

**<https://hal.science/hal-04210119v1>**

Submitted on 18 Sep 2023

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons CC0 - Public Domain Dedication 4.0 International License



# DIY Protein Fortification: What foods are suitable for UK older adults to fortify at home? The recipe for success

Rachel Smith<sup>1</sup>, Lisa Methven<sup>1</sup>, Miriam Clegg<sup>1</sup>, Alexia Geny<sup>2</sup>, Øydis Ueland<sup>3</sup>, Guro Helgesdotter Rognsås<sup>3</sup>, Ida Synnøve Grini<sup>3</sup> and Claire Sulmont-Rossé<sup>2</sup>

<sup>1</sup> Department of Food and Nutritional Sciences, University of Reading, Whiteknights, Reading, RG6 6AP

<sup>2</sup> Centre des Sciences du Goût et de l'Alimentation, CNRS, INRAE, Institut Agro, Université de Bourgogne-Franche-Comté, F-21000 Dijon

<sup>3</sup> Nofima AS, Osloveien 1, 1430 Ås, Norway

## BACKGROUND

- Protein **is** vital in combating negative outcomes associated with malnutrition in older adults (e.g., sarcopenia, functional decline and reduced quality of life)
- Older adults require more protein per day than younger adults (1.2-1.5g/kg body weight/day)
- Poor appetite is a major determinant of protein-energy undernutrition
- Protein fortification of regular food or drinks provides a flexible & relevant approach for older adults with reduced appetite

### Food has no nutritional value until it is chosen, accepted & consumed

For older adults to incorporate fortified products into their diets, or fortify their normal meals, the solutions must:

- ✓ be adaptable to older adults' eating patterns
- ✓ be easy to prepare and consume
- ✓ cater for their food preferences
- ✓ be sensorially pleasurable
- ✓ take specific age-related problems concerning food intake into account

**As such, novel do-it-yourself (DIY) fortification methods must empower older adults to take a personalised approach to their nutrition and current diet, without requiring a large behavioural change.**

## METHODS

Mixed-methods (1) quantitative & (2) qualitative approach:

1) **Data reanalysed from UK datasets**<sup>1</sup> (National Dietary and Nutrition Survey<sup>2</sup>, Food and You Survey<sup>3</sup>), alongside data purchased from market research consultancy, Kantar. These datasets highlighted older adults' current sources of protein and commonly consumed foods.

2) **EU funded project**, Fortiphy, is using a mixed-methods co-creation approach with older adults (age 70+) to develop recipes which make protein fortification a viable and appetising solution.

### Online focus groups & interviews:

- UK older adults (n= 12) and UK carers (n = 4)
- Captured attitudes to protein, fortification & meals using high protein ingredients. Concluded what they would / would not be willing to incorporate.
- Many ingredients explored: photos of 'dry' ingredients (ground almonds, whey protein powder etc) and 'non-dry' ingredients (eggs, cream etc).
- Participants asked to hypothetically fortify their meals from the previous day.

## RESULTS

- Intake & purchase data sets concluded that the biggest contributors of protein to older adults diets were meat, cereal products and dairy.
- Older adults did not know their protein needs increased with age.
- Older adults & caregivers were interested in meal fortification.
- Increasing the amount of existing high protein ingredients thought to be the easiest method of fortification (e.g. extra egg).
- Every-day high-protein culinary ingredients (**eggs, milk, ground almonds, cheese**) had the most positive reception & were commonly eaten.
- More uncertain of protein powders (in terms of expected taste, usage etc), but **were more willing to use them to substitute another dry ingredient (e.g. fortified flour, or instead of flour to thicken stews & soups)**.
- Female participants were more open to **use** dry ingredients, particularly if they were going to **add** less fat/calories than incorporating cheese or cream.

Ingredient example	Good idea?	Commonly eaten?
Egg	✓ <input type="checkbox"/>	✓ <input type="checkbox"/>
Ground almonds	✓ <input type="checkbox"/>	✗
Cheese	✓ <input type="checkbox"/>	✓ <input type="checkbox"/>
Protein powder (whey & plant-based)	Depends on meal carrier	✗
Milk	✓ <input type="checkbox"/>	✓ <input type="checkbox"/>

It was important that the high protein ingredients **fitted well with the preparation of commonly consumed foods (e.g. meat stew, soup, and cakes)** and **did not change the taste**. Participants thought fortification ingredients needed to be **affordable** and **accessible**. Ideally, they would pair well with meals that could be **batch made, frozen, defrosted and cooked in the microwave or oven**.



## CONCLUSION

Older adults & carers are interested in fortifying meals if it makes little difference to sensory perception of the meal.

Using everyday culinary ingredients is accepted as a feasible & practical approach to fortifying meals. There were many opportunities to fortifying with eggs and dairy across the day. Unfamiliarity was a barrier to protein powders; however, suspicion **was** reduced where the fortifying ingredient could replace a similar food ingredient. These **two** approaches should be combined to encourage older adults to increase their protein intake.

## Speaker

Dr Rachel Smith, Postdoctoral Researcher  
Department of Food and Nutritional Sciences  
University of Reading, UK  
[r.smith7@reading.ac.uk](mailto:r.smith7@reading.ac.uk) / @DrRachSmith

## References

- <sup>1</sup>Smith R, Clegg, M, & Methven L. (2022) Review of protein intake and suitability of foods for protein fortification in older adults in the UK. *Critical Reviews in Food and Nutrition*. (under review)
- <sup>2</sup>Public Health England. 2020. "National Diet and Nutrition Survey: Results from Years 9-11 Combined - Data Tables."
- <sup>3</sup>Food Standards Agency. 2020. "Food and You - Wave Five: Chapter 1 - Cooking, Shopping and Eating Tables."