

## **Supplementary Material S1. The complete search strategy.**

### **PUBMED**

1. Protein intake AND frailty [MESH];
2. Protein intake AND frailty index;
3. Protein intake AND fragility;
4. Protein intake AND Frailties;
5. Protein intake AND Frailness;
6. Protein intake AND Frailty Syndrome;
7. Protein intake AND Debility;
8. Protein intake AND Debilities;
9. Protein intake AND Frail Elderly;
10. Protein intake AND Physical Frailty;
11. Protein intake AND Clinical Frailty Scale;
12. Protein intake AND FRAIL Scale;
13. Protein intake AND Frailty Phenotype;
14. Protein intake AND Deficit Accumulation Index;
15. Protein intake AND Cognitive Frailty;
16. Protein consumption AND frailty [MESH];
17. Protein consumption AND frailty index;
18. Protein consumption AND fragility;
19. Protein consumption AND Frailties;
20. Protein consumption AND Frailness;
21. Protein consumption AND Frailty Syndrome;
22. Protein consumption AND Debility;
23. Protein consumption AND Debilities;
24. Protein consumption AND Frail Elderly;
25. Protein consumption AND Physical Frailty;
26. Protein consumption AND Clinical Frailty Scale;
27. Protein consumption AND FRAIL Scale;
28. Protein consumption AND Frailty Phenotype;
29. Protein consumption AND Deficit Accumulation Index;
30. Protein consumption AND Cognitive Frailty;

### **EMBASE\***

1. Protein intake AND Frailty AND Aged;
2. Protein intake AND Frailty AND Older Adults;
3. Protein intake AND Frailty AND Elderly;

\*All searchers were conducted using the filter *Title, Abstract, Author Keywords*

### SCOPUS\*

1. Protein intake AND Frailty AND Aged;
2. Protein intake AND Frailty AND Older Adults;
3. Protein intake AND Frailty AND Elderly;
4. Protein consumption AND Frailty AND Aged;
5. Protein consumption AND Frailty AND Older Adults;
6. Protein consumption AND Frailty AND Elderly;

\*All searchers were conducted using the filter *Article title, Abstract, Keywords*

### EBSCO (AgeLine, CINAHL, Food Science Source)

1. Protein intake AND Frailty AND Aged;
2. Protein intake AND Frailty AND Older Adults;
3. Protein intake AND Frailty AND Elderly;
4. Protein intake AND Frailty AND Senior;
5. Protein intake AND Frailty AND Geriatrics;
6. Protein consumption AND Frailty AND Aged;
7. Protein consumption AND Frailty AND Older Adults;
8. Protein consumption AND Frailty AND Elderly;
9. Protein consumption AND Frailty AND Senior;
10. Protein consumption AND Frailty AND Geriatrics;

### **Supplementary Material S2. Six articles which were excluded.**

#### AGE

1. Schoufour, J. D., Franco, O. H., Kieft-de Jong, J. C., Trajanoska, K., Stricker, B., Brusselle, G., ... & Voortman, T. (2019). The association between dietary protein intake, energy intake and physical frailty: results from the Rotterdam Study. *British Journal of Nutrition*, 121(4), 393-401.
2. Verspoor, E., Voortman, T., van Rooij, F. J., Rivadeneira, F., Franco, O. H., Kieft-de Jong, J. C., & Schoufour, J. D. (2020). Macronutrient intake and frailty: the Rotterdam Study. *European journal of nutrition*, 59(7), 2919-2928.
3. Villani, A., Barrett, M., McClure, R., & Wright, H. (2021). Protein intake is not associated with functional biomarkers of physical frailty: A cross-sectional analysis of community-dwelling older adults with type 2 diabetes mellitus. *Nutrition, Metabolism and Cardiovascular Diseases*, 31(3), 827-833.

#### DID NOT ASSESS PROTEIN INTAKE

4. Huang, C. H., Martins, B. A., Okada, K., Matsushita, E., Uno, C., Satake, S., & Kuzuya, M. (2021). A 3-year prospective cohort study of dietary patterns and frailty risk among community-dwelling older adults. *Clinical Nutrition*, 40(1), 229-236.

5. Lana, A., Rodriguez-Artalejo, F., & Lopez-Garcia, E. (2015). Dairy consumption and risk of frailty in older adults: a prospective cohort study. *Journal of the American Geriatrics Society*, 63(9), 1852-1860.
6. Yamaguchi, M., Yamada, Y., Nanri, H., Nozawa, Y., Itoi, A., Yoshimura, E., ... & Kyoto-Kameoka Study Group. (2018). Association between the frequency of protein-rich food intakes and Kihon-Checklist frailty indices in older Japanese adults: the Kyoto-Kameoka study. *Nutrients*, 10(1), 84.

### Supplementary Material S3

#### Supplementary Material S3. Quality analysis

##### *Cross-sectional*

Authors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Overall score (0/11)
Bartali et al.	Y	Y	Y	Y	NR	NA	NA	N	Y	N	Y	NR	NA	Y	7
Bollwein et al.	Y	Y	Y	Y	NR	NA	NA	N	Y	N	Y	NR	NA	Y	7
Castaneda-Gameros et al.	Y	Y	NR	Y	NR	NA	NA	N	Y	N	Y	NR	NA	Y	6
Coelho-Junior et al.	Y	Y	Y	Y	NR	NA	NA	Y	Y	N	Y	N	NA	N	7
Hayashi et al.	Y	Y	Y	Y	NR	NA	NA	Y	Y	N	Y	NR	NA	Y	8
Kaimoto et al.	Y	Y	Y	Y	NR	NA	NA	Y	Y	N	Y	NR	NA	Y	8
Kobayashi et al.	Y	Y	Y	Y	NR	NA	NA	Y	Y	N	Y	NR	NA	Y	8
Kobayashi et al.	Y	Y	Y	Y	NR	NA	NA	Y	Y	N	Y	NR	NA	Y	8
Rahi et al.	Y	Y	Y	Y	NR	NA	NA	N	Y	N	Y	NR	NA	Y	7
Smit et al.	Y	Y	Y	Y	NR	NA	NA	Y	Y	N	Y	NR	NA	Y	8
Tamaki et al.	Y	Y	Y	Y	NR	NA	NA	N	Y	N	Y	NR	NA	N	6
Wu et al.	Y	Y	Y	Y	NR	NA	NA	N	Y	N	Y	NR	NA	Y	7

##### *Longitudinal*

Beasley et al.	Y	Y	Y	Y	NR	Y	Y	Y	Y	N	Y	NR	NR	Y	10
Huang et al.	Y	Y	Y	Y	NR	Y	Y	N	Y	N	Y	NR	Y	Y	10
Otsuka et al.	Y	Y	Y	Y	NR	Y	Y	N	Y	N	Y	NR	NR	Y	9
Sandoval-Insausti et al.	Y	Y	Y	Y	NR	Y	Y	Y	Y	N	Y	NR	NR	Y	10
Shikany et al.	Y	Y	NR	Y	NR	Y	Y	N	Y	N	Y	NR	NR	Y	8