Acute Effects of Essential Amino Acid Gel-based and Whey Protein Supplements on Appetite and Energy Intake in Older Women

Dr Theocharis Ispoglou
Reader in Nutrition and Muscle Health
Active Ageing in Health and Disease (SARCA) theme coordinator

Key drivers of our research

- Ageing population
- Sarcopenia and its implications on health span

EWGSOP2 (2018) and Mayhew et al. (2018)
Increase in **protein intake** for managing sarcopenia (Janssen et al. 2004a; Clark et al. 2010; Lang et al. 2010; Lieffers et al. 2012).

Evidence supports 1.0-1.6 g·kg\(^{-1}\)·d\(^{-1}\) (Bauer et al. 2013; Deutz et al. 2014; Loenneke et al. 2016; Traynor et al. 2018).

**Energy intake** also crucial for maintenance of muscle mass and health (Dahany et al. 2014; Thalacker-Mercer et al. 2014; Baum et al. 2016).

Deficiencies in **energy and protein intakes** contributing factors to frailty (Beasley et al. 2010; Bauer et al. 2013; Bonnefoy et al. 2015).

**Consumption of at least 0.4 g·kg\(^{-1}\)·BM** of high quality protein per meal (Moore et al. 2014; Phillips 2015; Lancha Jr et al. 2016) is also recommended.


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**Challenge:** *age-related anorexia and satiating effects of protein.*

**Potential solution:** *use of protein based nutritional supplements that do not affect appetite.*
Methods

Crossover design (3 conditions)

The WP and GEL provided ~ 7.5 g of EAAs or the equivalent of ~15 g of high quality protein

N=10

69.2 ± 2.7 years of age

Body mass of 60.8 ± 7.1

Height of 163.1 ± 3.0 cm

Results

Macro-nutrient intakes (g) from ad lib breakfast plus supplement

Macro-nutrient intakes (g) from ad lib breakfast alone
An asterisk (*) denotes significantly different from CON and WP.

Energy intake including energy from supplements and the breakfast.

Time-averaged AUC for PYY was significantly different between trials (P = 0.001), with WP higher than CON (P = 0.009) and GEL (P = 0.012).

Conclusion

A **whey protein isolate** facilitated an increase in **protein**, whereas supplementation with an **essential amino acid based gel** increases **in both energy and protein intakes**, when consumed before an ALB.

Findings, highlight potential gel-based **EAA**s supplementation intake for addressing age-related sarcopenia.
Thank you

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