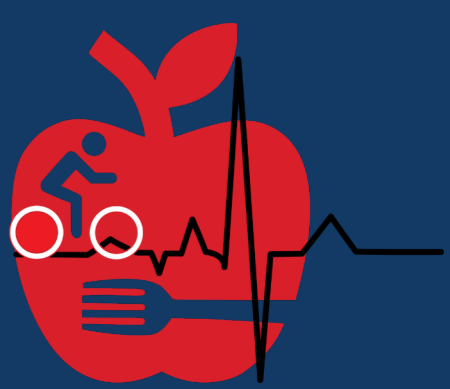




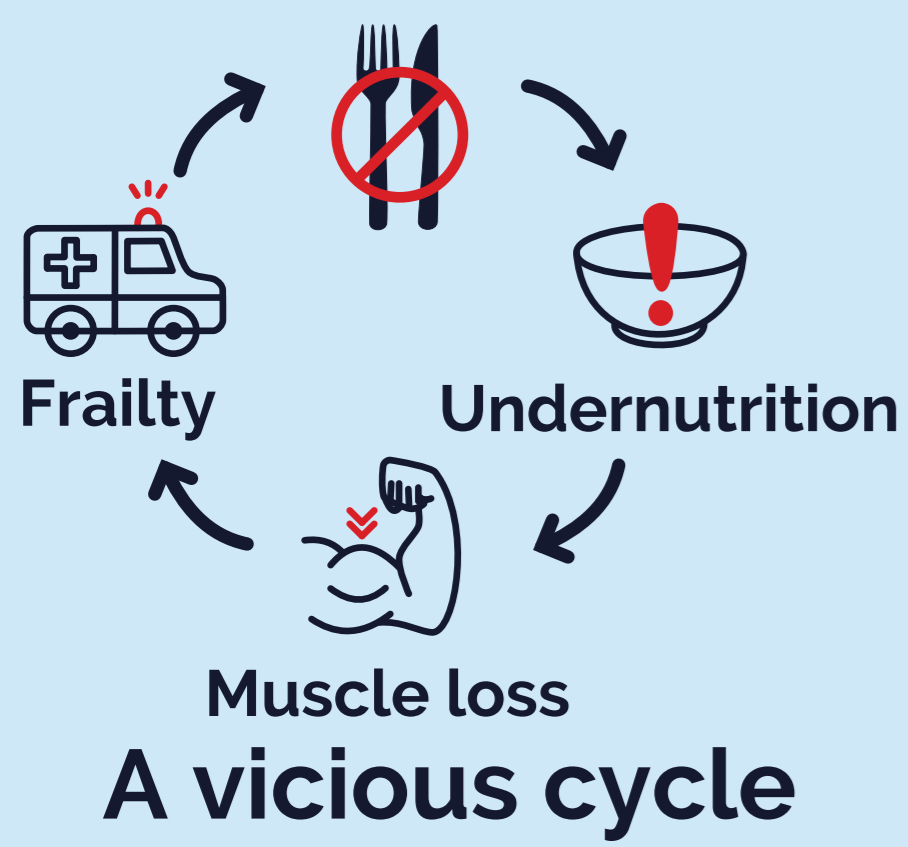
Identifying older adults at risk of undernutrition through a novel appetite classification method



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Anorexia of ageing



Prevalence

Affects:

- 22% community-dwelling,
- 30% in care homes,
- up to 60% of hospitalised older adults (65+ years)



Consequences

Individual

Poor quality of life, reduced mobility
Diminished independence

Societal

Frailty linked hospitalisation
Increased dependency and need for care

Economic

Greater NHS costs
Increase healthcare system burden

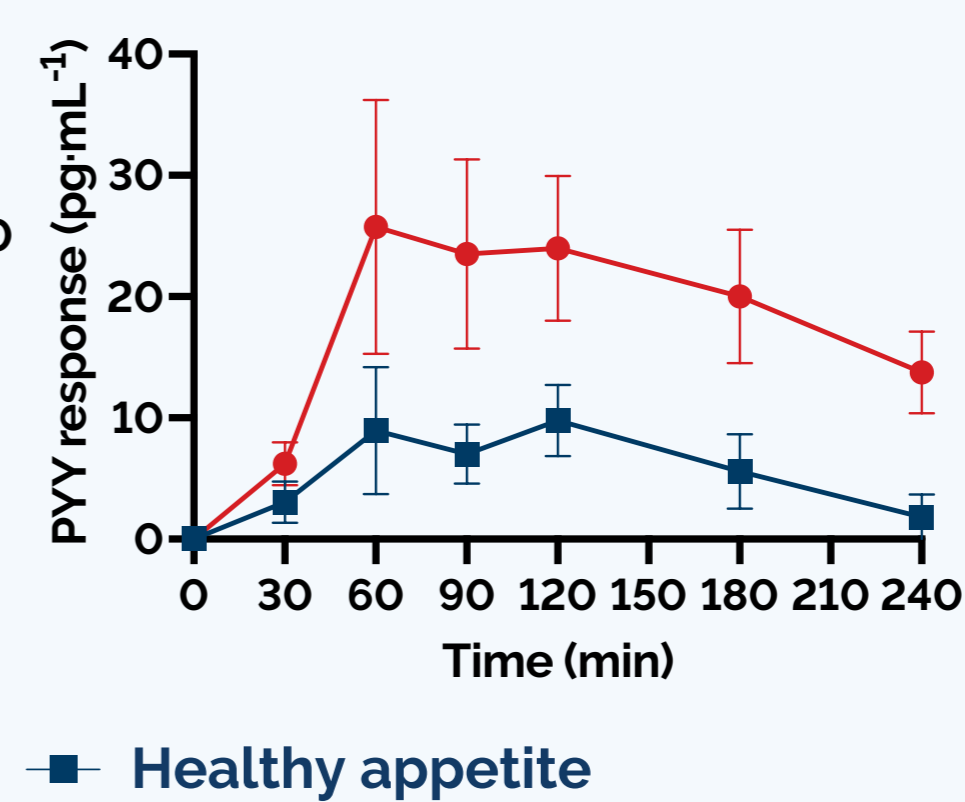
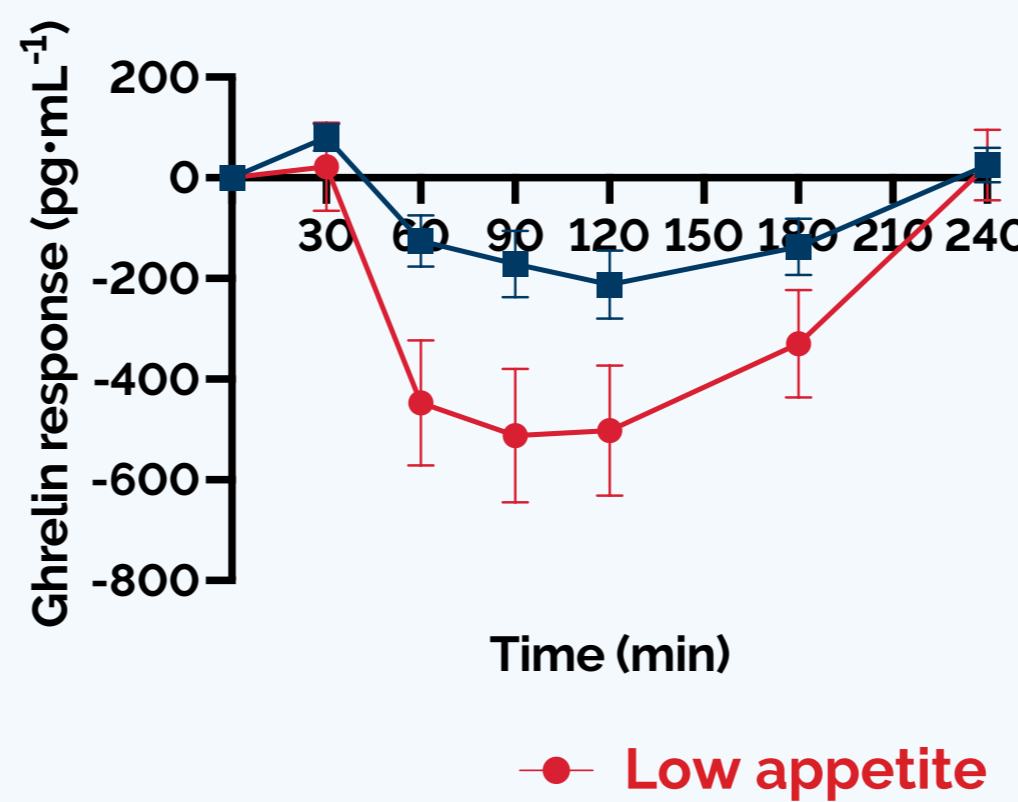
But no effective, valid classification method...yet

Criteria development¹

Older adults classed as low appetite if met two or more thresholds:

Body mass index	< 23 kg·m ⁻²
Daily energy intake	< 75% estimated total energy requirements
Simplified Nutritional Appetite Questionnaire score	< 15
Lab-measured lunch energy intake	< 25% estimated total energy requirements

Initial outcomes^{1,2}



Greater **appetite suppressing gut hormone profile** in older adults with low appetite following feeding

↓
Fuller for longer
Reduced overall food intake

Physiological mechanism for anorexia of ageing...but does classification predict appetite related changes

Methods

3-year follow-up to determine changes. 13 from previous cohort returned for measurement of:

- Weight and BMI
- Habitual energy intake
- Lab-measured lunch energy intake
- Subjective appetite ratings (SNAQ)

Healthy Appetite $n = 9$
 $F = 6$

↑ Weight **1.58%** increase

↑ BMI **2.89%** increase

↓ Habitual energy intake **12.46%** decrease

↓ Lunch energy intake **14.16%** decrease

Low Appetite $n = 4$
 $F = 1$

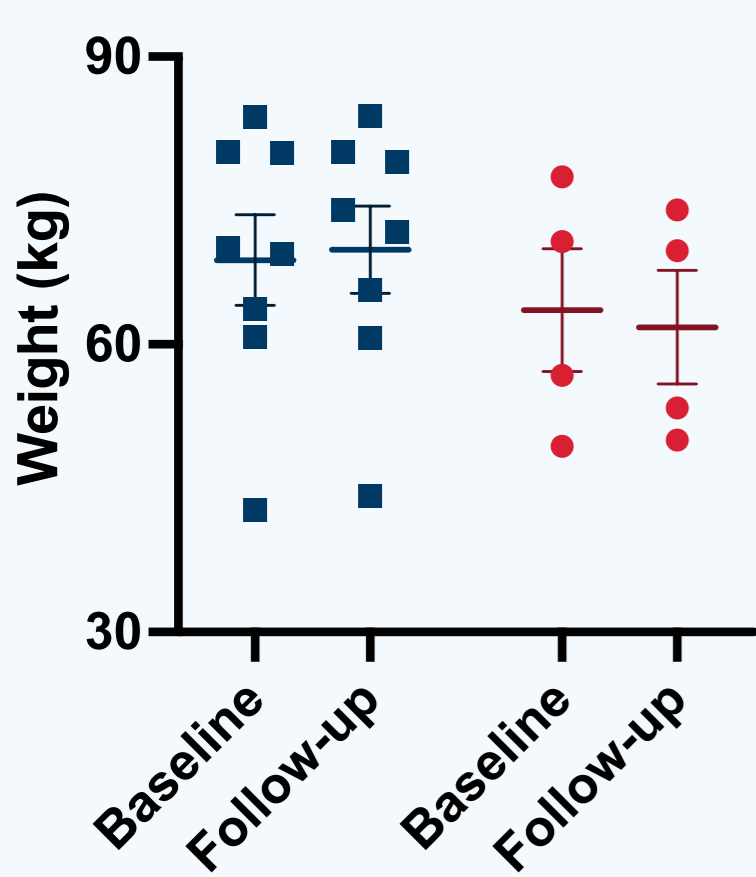
↓ Weight **2.81%** decrease

↓ BMI **3.53%** decrease

↓ Habitual energy intake **24.12%** decrease

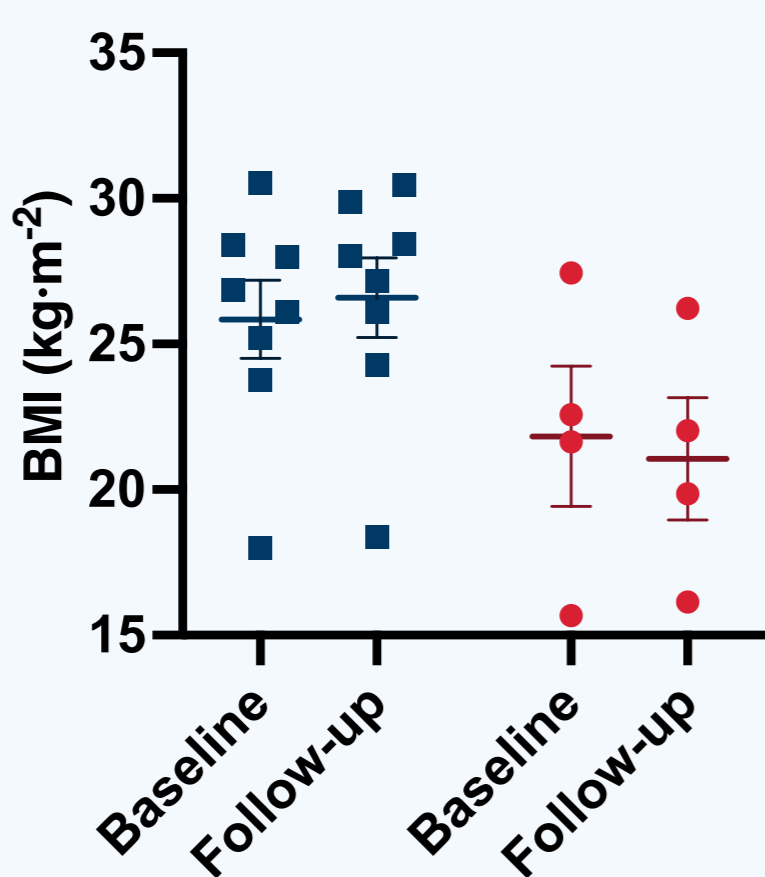
↓ Lunch energy intake **19.11%** decrease

Weight change



Low appetite = significant weight loss
 $p = 0.021$

BMI change



Low appetite = significant BMI reduction
 $p = 0.017$

Linear Regression Analysis

Weight

Appetite **classification predicted weight changes**

$p = 0.028$

Adjusted $R^2 = 0.335$

Standardised $\beta = 0.629$

Low appetite = 4.4% point decrease in weight vs healthy

BMI

Appetite **classification predicted BMI changes**

$p = 0.023$

Adjusted $R^2 = 0.363$

Standardised $\beta = 0.648$

Low appetite = 5.9% point decrease in BMI vs healthy

Relative energy intake

Energy intake as a proportion of total daily energy requirements:

Healthy appetite **110.88%** → **96.98%**

Low appetite **68.19%** → **56.12%**

Concerning? but... not significantly different

Appetite classification significantly predicted changes

Conclusions

Initial classification method proved **robust at 3-year follow-up**

Classification **predicts changes in weight and BMI**

Low appetite group present results placing them at **greater risk of undernutrition**

Future directions

Results are promising, even with pilot level sample size

Increase sample by rolling out study to other establishments (MMU and Imperial) to **enhance sample size and statistical power**

Classification method will allow **personalised targeting of care**

¹Holliday, A., Warner, J., Hulston, C. J., Corfe, B. M. and Crabtree, D. R. (2024) 'Anorexia of ageing is associated with elevated fasted and lower post-prandial ghrelin independent of ghrelin O-acyltransferase', *Appetite*, 196, pp. 107259

²Dagbasi, A., Warner, J., Catterall, V., Smith, K., Crabtree, D. R., Carroll, B., Frost, G. and Holliday, A. (2024) 'Augmented gut hormone response to feeding in older adults exhibiting low appetite', *Appetite*, 201, pp. 107415

