

Closing the Nutrition Gap

Early oral nutritional supplement intervention in older adults at risk



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Malnutrition has a growing economic burden. In the United Kingdom (UK) estimated costs of malnutrition are >£23 billion annually, with older adults (>65 years old) accounting for 52% of these costs.¹

The UK is experiencing increasing numbers of older adults (adults aged 65 and over). One in 5 people are over 65 years old (18.3%) with projections to reach about 1 in 4 people (24.2%) by 2038.²

Background

Management of malnutrition includes food-based intervention and oral nutritional supplements (ONS).^{3, 4, 5} ONS are an effective and recommended intervention when food-based interventions are not sufficient (or not appropriate) to meet nutritional needs.^{3, 4, 5}

Because of the high costs associated with malnutrition, the reduction and restriction of prescribing of ONS is often a key priority across the UK.^{6, 7, 8} However, the direct costs of appropriate treatment (ONS, feeds and ancillaries) are <2.5%,¹ with around 1% used for adult ONS⁹ in England.

Notably, even if all ONS prescribing for adults across the UK were discontinued, the economic burden of malnutrition on the healthcare system would remain at ~£22.75 billion, assuming no further escalation in costs due to untreated complications. This highlights there are greater cost savings to be made by appropriate and timely interventions for the management of malnutrition.

Older adults are disproportionately impacted by the complications of malnutrition.¹ They face many barriers to adequate nutritional intake which includes:

- Polypharmacy (taking at least five drug treatments)^{10, 11} which is associated with increased adverse drug reaction (ADR), cognitive and functional impairment, and higher risks of frailty, falls, hospitalisation and mortality. Polypharmacy commonly negatively impacts oral intake due to side effects such as early satiety, bowel disturbances, taste changes, etc.
- Early satiety, reduced appetite, dysphagia, poor dentition, social isolation, deprivation and poverty are also commonly experienced barriers.¹
- The physiology of metabolism which significantly alters in ageing. This is multifactorial and is impacted by a reduced oral intake, inflammation, impaired metabolism related to ageing, anabolic resistance and muscle loss.^{12, 13, 14}

Accounting for the altered metabolism and the risks associated with malnutrition, the European Society for Clinical Nutrition and

Metabolism (ESPEN) recommend higher protein requirements for older adults⁴ than the UK's general recommendation 0.75g of protein per kg of body weight¹⁵ – see **Table 1**.

Table 1: ESPEN's protein recommendations for older adults⁴

	Protein per kg of bodyweight
Healthy older adults	1-1.2 g protein
Older adults with acute or chronic illness	1.2-1.5 g protein
Older adults with severe illness, injury or malnutrition	Up to 2.0 g

When accounting for the aforementioned barriers alongside the elevated protein requirements of healthy ageing, a significant nutritional deficit ('a nutrition gap') emerges. It is estimated that fewer than 50% of older adults meet the current UK general adult recommendations and fewer than 15% meet the higher ESPEN age-specific recommendation.¹⁶

Alongside weight loss, inadequate intake of energy also increases protein requirements⁴ (low energy intakes causes the body to divert protein from its role of being a building block in tissue repair, enzyme production and immunity etc., to a fuel source in the absence of adequate energy). Thus, it is imperative to focus on improving energy and protein intakes to optimise nutritional status.

When food first is not enough

Studies have shown that dietary counselling given with or without ONS is effective at increasing nutritional intake and weight.^{17, 18, 19} Therefore, interventions based on a 'food-first' or 'food-only' approach is often used and recommended as first line intervention across many parts of the UK in line with the key priority of reducing ONS prescribing costs.^{6, 7, 8}

While ‘food-first’ approaches can offer long-term benefits and do not incur direct costs to the healthcare system, failure to effectively treat malnutrition, whether due to patient-related barriers or delayed clinical intervention, is associated with substantial downstream costs. Not only does it cost 3 times more to treat a patient with malnutrition than to treat a similar patient without malnutrition (£7,408 vs £2,155),^{1, 20} it also negatively impacts the patient (increased risks of infection, falls, hospitalisation, reduced quality of life, and higher mortality, etc.).⁵

Food-first approaches are likely to be suitable and adequate for individuals at low risk of malnutrition. However, the clinician should be mindful that a low-risk classification based on the ‘Malnutrition Universal Screening Tool’ (‘MUST’) may still meet the diagnostic criteria for malnutrition under the Global Leadership Initiative on Malnutrition (GLIM), due to current limitations with the ‘MUST’ and other validated screening tools. It is well documented that energy,²¹ protein,²¹ and micronutrient (namely thiamine, riboflavin, vitamin D, calcium, magnesium and selenium)²² deficits are common within the older adults’ population and can be present even in those with normal nutritional status (see case study for a real-life example).²¹

For older adults with malnutrition or at risk of malnutrition, and who are unable to meet their protein and energy requirements through food alone, an appropriate ONS would be of benefit. The National Institute for Health and Care Excellence (NICE)³ and ESPEN⁴ recommends that healthcare professionals (HCPs) should consider oral nutrition support to improve nutritional intake for people who are malnourished or at risk of malnutrition.

Despite many studies demonstrating the positive impacts of ONS^{17, 18, 19} on overall appetite, energy intake, body weight and BMI, there are significant disparities in the implementation of ONS in the elderly, which impairs the potential of ONS to achieve sufficient health outcomes in the nutritional status of the older adults.

Specifically in primary care, there is evidence to support the use of ONS alongside dietary advice, which demonstrated healthcare use reduced with the use of ONS²³ (HCP visits by 34%, emergency admissions by 50%, length of stay by 62%) when compared with dietary advice only.

It is imperative not to delay the appropriate initiation of ONS as this places the patient who may already be in a catabolic state at more complications due to their malnutrition status. Malnutrition is often easier to treat before a patient enters a state of severe cachexia, where the body becomes less responsive to nutritional interventions.

A case study: acting early

Patient profile: 75-year-old male, living alone, housebound (in the last 12 months), struggling with self-care due to severe fatigue and severe frailty.

Medical history: Recurrent falls, hypercholesterolemia, hypertension.

The paradox: His ‘MUST’ score was 0 (low risk of malnutrition) because his BMI was healthy and his weight was stable over the last year, however a GLIM assessment revealed severe malnutrition based on ‘historic’ weight loss (32% of body weight over 6 years).

Mobility: He was struggling to use the stairs, struggling with self-care and personal hygiene due to fatigue. He had become too tired to cook and was relying on ready-meals.

Oral intake: 50-75% of his meals. He was already using high calorie options and did not feel he could manage any snacks due to low appetite and early satiety. There were no concerns of constipation and bowels opened daily (type 4).

Barriers to oral intake: Severe fatigue (unable to stand to cook or ‘face a meal’), early satiety, loneliness, polypharmacy and clinical vitamin D deficiency (10 nmol/L).

Other teams’ involvement: Under the Falls Team for recurrent falls and receiving physiotherapy for the last 6 months.

See **Table 2** for his nutritional requirements based on his current weight of 74 kg (using ESPEN’s age specific recommendations).⁶

Intervention strategy: ‘ONS first’

Because the patient was too fatigued to implement ‘food-first’ fortification (like snacks or cooking), traditional dietary therapy was bypassed initially and ONS was started early as this was the most appropriate intervention.

- ▶ **Phase 1 – Stabilise (initial)**
Aim: Correct deficits, reduce catabolism
High-protein ONS: 2/day
Vitamin D correction
Basic advice on fatigue management to support self-care
→ Food-first not feasible due to severe fatigue
- ▶ **Phase 2 – Enable function (4 weeks)**
Aim: Support recovery and re-introduce food
Energy levels improved; patient able to shower
Food fortification introduced
High-protein ONS continued 2/day
- ▶ **Phase 3 – Rebuild appetite (12 weeks)**
Aim: Shift towards food-based intake
Appetite returned; 75–100% meals consumed
ONS reduced to 1/day (to encourage food intake)
Improved engagement with physiotherapy
- ▶ **Phase 4 – Maintain independence (6 months)**
Aim: Sustain gains without ONS
ONS discontinued
Fully food-based intake
Weight monitored every 4 weeks (via surgery’s frailty register)
Social re-engagement: attending lunch club weekly
Open dietetic follow-up if required.

This case study demonstrates how early (and appropriate) ONS intervention supports nutritional intake and improves outcome measures – see **Table 3**.

Table 2: Nutritional requirements

	Energy	Protein	Fluid
Estimated Requirement	2200 kcal	74-148 g	2200 ml
Estimated Intake	1100-1650 kcal	37 g	1350 ml
Estimated Deficit	1100-550 kcal	37-111 g	850 ml

Table 3: ONS intervention

	On referral	6 months post dietetic input
Weight	74	82
BMI (kg/m²)	21.6	24
SARC-F	7	4
‘MUST’ score	0	-
GLIM diagnosis	Severe malnutrition	Resolving
Clinical frailty score	7	5
Frailty	Severely frail	Moderately frail
Number of falls	3 in the last 12 months	0 in the last 6 months
Dynamometer	14.2 kg (weak)	20.2 kg (weak, but improved)
Social status	Housebound	Goes to lunch club once a week

By improving the patient's above markers, costs savings can be observed from a reduction in his healthcare needs – see **Table 4**.

The cost of ONS intervention for 6 months was £630 (Fortisip 2kcal). This was offset by a cost saving of at least £2,618.6. This highlights the positive impacts of early detection and the treatment of malnutrition with ONS supports costs savings in healthcare.²⁷

For effective nutritional intervention, regular reviewing, monitoring and optimising the plan is important. There is no agreed national timeframe for follow-up: NICE recommends monitoring patients receiving oral nutrition support every 3-6 months, or more frequently if their clinical condition changes, while the Scottish Dietetic Care Pathway advises reviews every 4-8 weeks for up to 6 months, with flexibility for clinical judgement as needed.^{3, 28}

When initiating ONS it is important to set clear goals or targets with the patient. This can help with ONS reduction/cessation once the goal/target has been achieved and helps the patients to adopt dietary change.²⁹ For many people with chronic long-term conditions that are known to increase nutritional requirements (like COPD), it may be that ONS will be part of the long-term intervention with no realistic cessation date as usually this is a progressive condition whereby nutritional requirements increase and nutritional intake reduces.

Intervention goals can include traditional markers like weight and BMI (which is sometimes not appropriate especially as many patients are experiencing sarcopenic obesity). Other markers can be used to

support the patient's nutritional needs, such as handgrip strength or functional markers like sit-to-stand test.

NICE³ recommends ONS support should be stopped when the patient is established on adequate oral intake from normal food, and the Scottish Dietetic Care Pathway,²⁸ when treatment goal has been reached (target weight gain/BMI, BMI stable for a defined period, etc).

Conclusion

To address malnutrition in the UK's older adult demographic, especially with the increase in lifespan, and decline in 'healthspan' (healthy lifespan or healthy longevity),^{30, 31} a nuanced approach is needed toward individualised nutritional therapy. Due to age-related physiological changes and complex socio-biological barriers, relying solely on food fortification is often insufficient (and inappropriate) to address established deficits and to optimise nutrition for healthy ageing.

As demonstrated by the clinical evidence and the case study presented, delaying ONS in favour of traditional dietary advice can inadvertently prolong a patient's catabolic state, increasing the risk of falls, hospitalisations, and irreversible muscle wasting. The 'ONS first' strategy (when clinically appropriate) does not replace food; rather, it provides the metabolic foundation necessary for patients to regain the strength and appetite required to eventually return to a food-based diet.

By treating ONS as a targeted, clinical intervention rather than a last resort, HCPs can effectively close the nutrition gap, promoting independence and resilience in our older community.

Table 4: Estimated healthcare cost savings following nutritional improvement

Outcome improved	Assumption	Estimated saving
Improvement in frailty (severe → moderate) ^{24, 25}	Difference in annual healthcare costs per patient	£899.60
Reduced falls (no falls in last 6 months) ²⁵	No ambulance call-outs (3 avoided)	£1,377.00
Avoided A&E attendances ²⁶	No A&E attendance related to falls (3 avoided)	£342.00
Total estimated cost saving*		£2,618.60

*Conservative estimate based on no further falls, no ambulance call outs, and no A&E attendance.

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