Dorset HealthCare University
NHS Foundation Trust

Nutrition & Sarcopenia

Phillipa Ryan
Community Dietitian
Community & Specialist Dietetic Service

Healthier lives Empowered citizens Thriving communities

November 2025

Overview

Dorset HealthCare University NHS Foundation Trust

Introduction

– Who are the Dietitians?

What is sarcopenia

- Sarcopenic obesity
- The importance of screening

Optimising nutritional intake

- Food first
- Fortifying diet
- Fortified milk

Appropriate use of ONS

- How to choose an ONS
- Link to formulary

Supporting information & questions

Who are the Dietitians?

NHS
Dorset HealthCare University
NHS Foundation Trust

BDA The Association of UK Dietitians

hcpc registered
www.hcpc-uk.org

Dietitians are qualified and regulated health professionals that assess, diagnose and treat dietary and nutritional problems at an individual and wider public health level.

They work in the NHS and in private clinics. They can work in the food industry, workplace, catering, education, sport and the media.

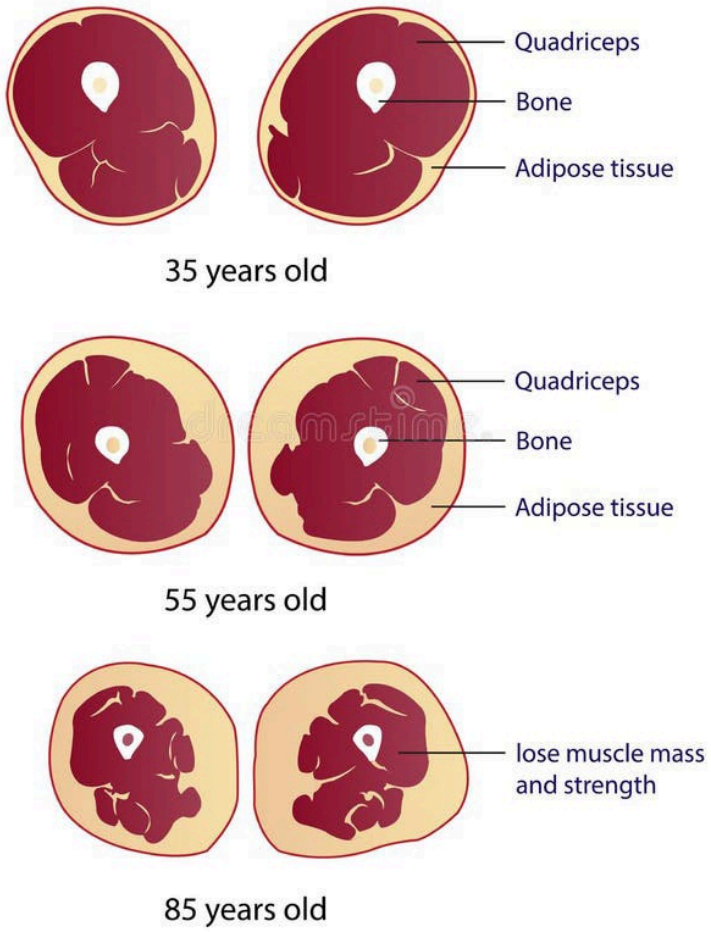
Specialist areas include paediatrics, gastro, enteral feeding, diabetes, eating disorders, bariatrics, renal, oncology, mental health and many more.

What is Sarcopenia?

NHS
Dorset HealthCare University
NHS Foundation Trust

Sarcopenia is a progressive and generalised **skeletal muscle disorder** that is associated with increased likelihood of adverse outcomes including falls, fractures, physical disability, and mortality.[1] Depending on the definition used, sarcopenia affects between 4–25 % of older, free-living adults in the UK.[2-4]

Evidence suggests that incidence increases with age, so older adults are particularly at risk, especially those with conditions which limit activity or result in periods of bed rest.[5]



Consequences of muscle loss

Dorset HealthCare University NHS Foundation Trust

- Breathing problems (e.g. with COPD)
- Heart health and failure
- Decreased metabolic rate – risk of sarcopenic obesity
- Insulin resistance (muscles use glucose for fuel)
- Mortality - muscle mass is inversely associated with all-cause mortality in older adults [9]
- Risk of infections and pressure ulcers [10]
- Mobility – ↑ falls and fracture risk

The link with malnutrition

Dorset HealthCare University
NHS Foundation Trust

Malnutrition, resulting from under or over nutrition, can lead to sarcopenia. Recent evidence has found patients with malnutrition had approximately **three to four times the risk** of developing sarcopenia than those without malnutrition [6,7]. Whilst sarcopenia is common among adults of older age it can also occur earlier in life[5] . Disease, inactivity, and poor nutrition[5] can all contribute.

Malnutrition = a state of nutrition in which a deficiency or excess (or imbalance) of energy, protein and other nutrients causes measurable adverse effects on tissue/ body form (body shape, size and composition) and function and clinical outcome[8]

Sarcopenic obesity

Dorset HealthCare University
NHS Foundation Trust

Sarcopenic obesity (SO) is defined as the co-existence of obesity and sarcopenia. The prevalence of obesity in combination with sarcopenia – or 'sarcopenic obesity' is on the rise.

SO is characterized by the combination of obesity, defined by high body fat percentage, AND sarcopenia, defined as low skeletal muscle mass accompanied by low muscle function.

SO is more frequently present in older adults, in part, due to the changes observed in body composition which in general accompany the aging process.

Sarcopenic obesity has consistently been demonstrated to be a strong and independent risk factor for frailty, comorbidities and mortality in various highly prevalent disease conditions, as well as for mortality in the general and especially in the older population.

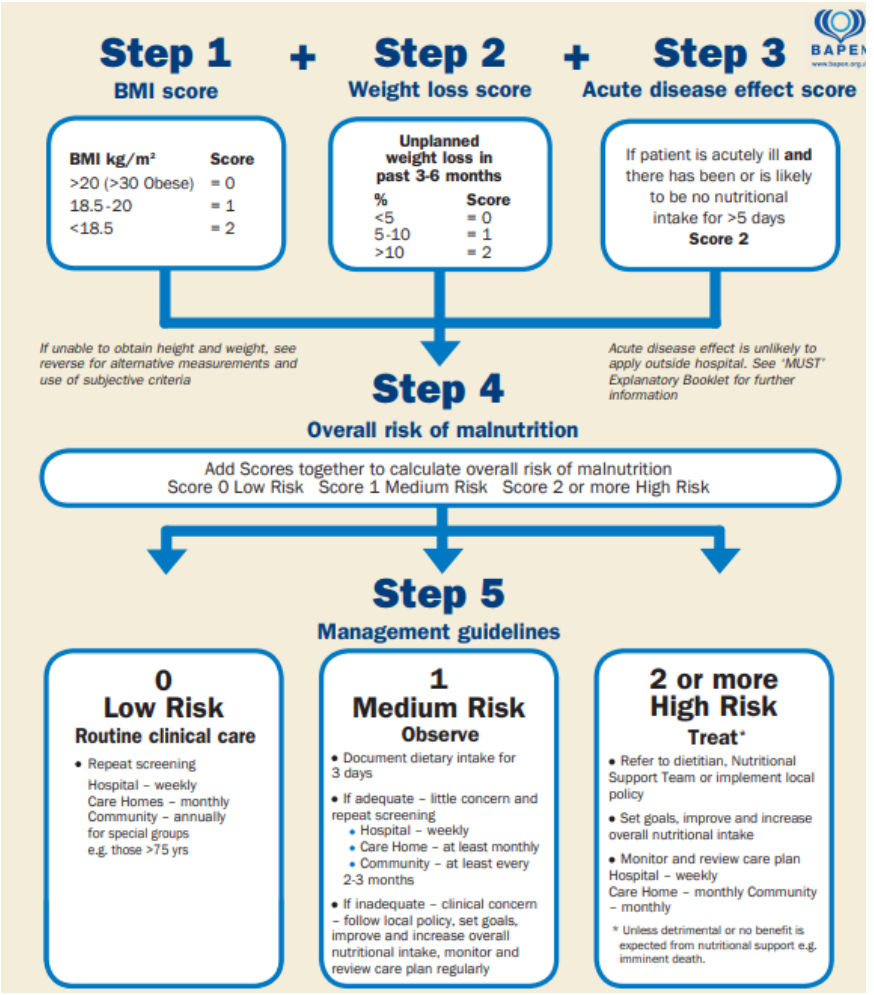
The importance of screening

Dorset HealthCare University NHS Foundation Trust

In some settings (i.e. acute), body composition can be assessed using CT scans, DEXA scans or even skin fold analysis.

In community settings other screening tools like the SARC-F questionnaire can be used [11]. Physical performance and assessments to determine one's ability to balance can also be used to identify sarcopenia.

For malnutrition, early screening to identify individuals at nutritional risk for unintended weight loss and undernutrition or malnutrition is essential. Validated screening tools like the Malnutrition Universal Screening Tool (MUST) should be used (12, 13).



Optimising nutritional intake

Dorset HealthCare University
NHS Foundation Trust

Protein - Adequate protein intakes are essential to maintain muscle mass and promote muscle synthesis. Older adults however often have a reduced food intake which can result in lower protein intakes.

Omega-3 fatty acids

Vitamin D and calcium

Oral nutritional supplements (ONS) - When protein/calorie deficit is significant, diet fortification may not be enough, particularly in the presence of poor appetite.

Food first

Dorset HealthCare University
NHS Foundation Trust

Would you rather eat ‘real’ food or have an artificially produced drink?

We can add extra nutrition to food to make it higher in calories and protein

Think: *look, smell, taste, enjoyment*

Fortification – adding calories and protein

Dorset HealthCare University
NHS Foundation Trust

Regular Version	Fortified version
1 ladle of **Custard / Porridge / Milk Pudding** Provides **150 calories**	1 ladle of **Custard / Porridge / Milk pudding** plus 1 tbsp milk powder and 2 tbsp double cream Provides **450 calories**
1 ladle of **Soup** Provides **80 Calories**	1 ladle of **Soup** plus 1 tbsp milk powder and 2 tbsp double cream Provides **350 Calories**
1 pint whole **Milk** Provides **375 Calories**	1 pint of Milk plus 5 tbsp of milk powder Provides **630 calories**

Protein content of foods

NHS
Dorset HealthCare University
NHS Foundation Trust

Foods high in protein should be included in 2 or 3 meals each day

Food	Average portion	Approx protein content
Chicken breast	100g	32g
Battered cod	180g	25g
Tofu	80g	19g
Egg	1 (medium)	10g
Cheddar cheese	40g	10g
Baked beans	1 small can (150g)	8g
Peanut butter	1 portion pack (25g)	6g
Semi skimmed milk	100ml	4g

For optimal muscle protein synthesis, aim for 25-30g protein per meal [14]

Appropriate use of ONS

Dorset HealthCare University
NHS Foundation Trust

ONS should be given in accordance with an evidence-based pathway

A patient should be encouraged to take ONS when they most feel like taking them; this may be between meals, like a snack, first thing in the morning or before bed. Alternatively, ONS can be incorporated into everyday foods e.g. in jellies and sauces

Generally, an addition to,

not a replacement for food

How to choose and use ONS

Dorset HealthCare University NHS Foundation Trust

Patient preference regarding milky or juice based, ready to drink or powdered sachets (consider ease of use)

Compact types used more as patients find the smaller volume easier and are more likely to finish

Flavour preferences - some flavours are only made by one company

Special dietary considerations - e.g. vegan, lactose free, Crohn's Disease, texture modified, kidney disease, diabetes

Trial free samples/short prescription/starter pack first to help reduce waste

Dorset Formulary (dorsetformulary.nhs.uk) for guidance, with overall choice based on individual's needs

Review of use is essential – check compliance!

When to stop? Acute illness or recent hospital discharge? Wound healing? Chronic conditions (COPD, cancer, frailty)?

Resources

Dorset HealthCare University
NHS Foundation Trust

Healthier lives Empowered citizens Thriving communities

- www.malnutritionpathway.co.uk - guidance on managing malnutrition plus info on sarcopenia, COPD etc. Includes a pathway for the appropriate use of oral nutritional supplements (ONS) and resources for patients
- www.bda.uk.com/resource/malnutrition.html - guide to spotting and treating malnutrition
- www.bda.uk.com/resource/muscle-health-nutrition-and-ageing.html - printable patient resource
- www.bapen.org.uk – British Association of Parenteral and Enteral Nutrition – resources and guidelines for malnutrition and MUST tool

NHS
Dorset HealthCare University
NHS Foundation Trust

Thank you for listening!

Any questions?

References

1. Cruz-Jentoft AJ, Bahat G, Bauer J, et al. Sarcopenia: revised European consensus on definition and diagnosis. Age Ageing. 2019;48(1):16-31.

2. Sarcopenia and Malnutrition -definitions, prevalence, causes and interrelationship Table 1 -Definitions Sarcopenia: loss of muscle mass A HEALTHCARE PROFESSIONAL FACT SHEET Managing Adult Malnutrition in the Community]. 2021. Available from: https://www.malnutritionpathway.co.uk/library/facts heet_sarcopenia.pdf [Accessed April 2024].

3. Patel HP, Syddall HE, Jameson K, et al. Prevalence of sarcopenia in community-dwelling older people in the UK using the European Working Group on Sarcopenia in Older People (EWGSOP) definition: findings from the Hertfordshire Cohort Study (HCS). Age Ageing. 2013;42(3):378-84.

4. Dodds RM, Murray JC, Robinson SM, et al. The identification of probable sarcopenia in early old age based on the SARC-F tool and clinical suspicion: findings from the 1946 British birth cohort. Eury Geriatr Med. 2020;11(3):433-441.

5. Cruz-Jentoft A, Sayer A. Sarcopenia. The Lancet. 2019; 393(10191): 2636-2646.

6. Beaudart C, et al. Malnutrition as a strong predictor of the onset of sarcopenia. Nutrients. 2019; 11(12): 2883.

7. Batsis JA, et al. Variation in the prevalence of sarcopenia and sarcopenic obesity in older adults associated with different research definitions: dual energy x-ray absorptiometry data from the National Health and Nutrition Examination Survey 1999–2004. J Am Geriatr Soc. 2013; 61.6: 974-980.

8. The 'MUST' report. Nutritional screening for adults: a multidisciplinary responsibility. Elia M, editor. 2003. Redditch, UK, BAPEN.

9. Srikanthan P, Karlamangla AS. Muscle mass index as a predictor of longevity in older adults. Am J Med. 2014; 127(6):.547-553.

10. Landi, F et al. The association between sarcopenia and functional outcomes among older patients with hip fracture undergoing in-hospital rehabilitation. Osteoporos Int. 2017; 28(5):1569-1576

11. Malmstrom T, Miller D, Simonsick E, et al. SARC-F: a symptom score to predict persons with sarcopenia at risk for poor functional outcomes. J Cachexia Sarcopenia Muscle. 2016;7(1):28-36.

12. Elia M. The “MUST” Report THE “MUST” REPORT Nutritional screening of adults: a multidisciplinary responsibility Development and use of the “Malnutrition Universal Screening Tool” (“MUST”) for adults Chairman of MAG and Editor Advancing Clinical Nutrition. 2003. Available from:https://www.bapen.org.uk/pdfs/must/must-report.pdf [Accessed April 2024]

13. Overview | Nutrition support in adults | Quality standards | NICE. Available from: https://www.nice.org.uk/guidance/qs24 [Accessed April 2024]

14. Bauer J, Biolo G, Cederholm T, et al. Evidence-based recommendations for optimal dietary protein intake in older people: a position paper from the PROT-AGE Study Group. J Am Med Dir Assoc. 2013;14(8):542-59.