A Best Practice Approach to Identifying and Addressing Muscle Loss in Patients with Cancer

Muscle loss is common among many types of cancer.[1-4] Dietitians are ideally placed to help minimise muscle loss to support improved patient outcomes, but patients at risk of muscle loss first need to be identified. That is why effective screening is so important. This article considers factors for a best practice approach to identify and address muscle loss in patients with cancer.

The challenge of cancer-related muscle loss

Cancer and its treatment can increase the risk of developing sarcopenia, which is observed in up to:

- 71% of metastatic colorectal cancer patients[1]
- 71%* of head and neck cancer patients[2]
- 47%† of non-small cell lung cancer patients[3]
- 45%‡ of oesophago-gastric junction cancer patients.[4]

Muscle loss is also a key feature of cancer cachexia and is linked to longer hospital stays,[5] higher risk of postoperative complications,[6] increased treatment toxicity,[7] and more frequent hospital readmissions.[8] Up to 80% of people with advanced cancer develop some degree of cachexia.[9]

Mean total healthcare costs per patient per month have been found to be significantly higher in patients with cachexia, compared to those without, primarily due to hospital outpatient and inpatient costs.[10]

The impact of malnutrition in oncology

It is important to consider cancer-related muscle loss in the wider context of malnutrition when seeking to optimise care. Malnutrition is common in patients with cancer, due to both the presence of the tumour and the effects of anticancer treatments.[11] Up to 10-20% of cancer patients die from the consequences of malnutrition rather than from the tumour itself.[11]

Nutrition should be addressed from the moment of diagnosis and nutritional support initiated before patients become malnourished.[11] Adequate protein intake is a key factor for maintaining muscle health.[12] A systematic review has also shown that oral nutritional supplements containing HMB (most tested dose of 3 g Ca-HMB/day) have beneficial effects on muscle mass, function, hospitalisation outcomes, and survival in patients with cancer.[12]

Patients should also be screened regularly.[11] In addition, exercise is recommended to support muscle mass, physical function and metabolism.

HMB, β-hydroxy-β-methylbutyrate; ONS, oral nutritional supplement; ESPEN, European Society for Clinical Nutrition and Metabolism; R-MAPP, Remote Malnutrition Application for Primary Practice.
*Rounded up from 70.9%. †Rounded up from 46.8%. ‡Rounded up from 44.9%.

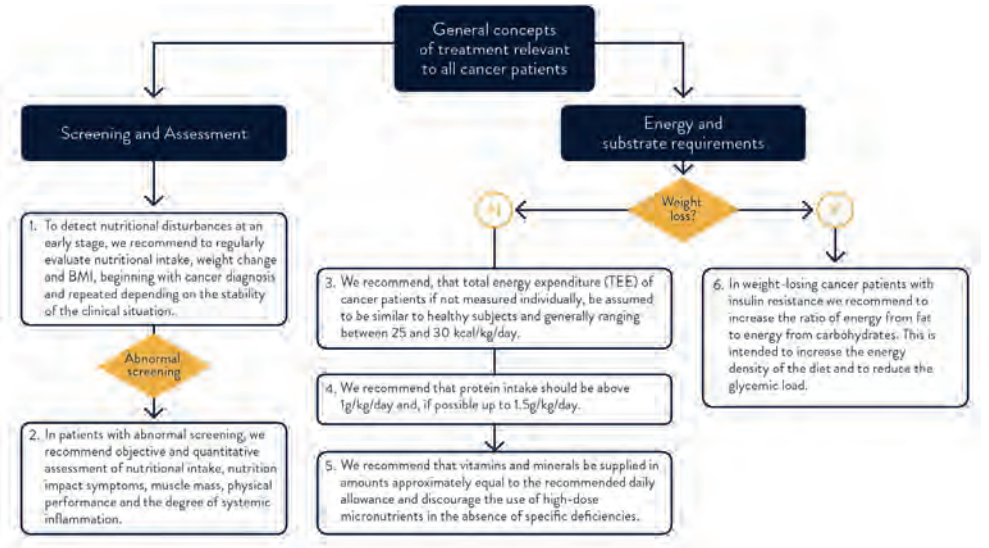
"It is important to consider cancer-related muscle loss in the wider context of malnutrition when seeking to optimise care."

Dietitians can help to optimise cancer care by:[11, 13, 14]

- **Assessing** early to identify patients at risk of muscle loss
- **Supporting** training of other healthcare professionals to help the screen early for muscle loss
- **Supporting** muscle mass through optimal nutrition
- **Encouraging** exercise to help maintain muscle function.

ESPEN recommendations highlight the importance of early nutritional intervention for patients with cancer[11] – see **Figure 1**.

Figure 1: The importance of early nutritional intervention



Supporting cancer prehabilitation

Consideration of a patient's nutritional status as part of prehabilitation prepares them for the journey ahead, maximises treatment resilience, and improves long-term health.[13] Nutritional risk screening should be carried out regularly in all cancer patients undergoing anticancer treatment, from diagnosis to living with and beyond cancer.[13, 14] However, muscle mass can be hard to identify, as it can occur before weight loss and up to 60% of cancer patients are overweight.[15] Screening and assessment tools are important clinical aids, as explained below.

Easy-to-use screening & assessment tools

Multiple tools are available to assist screening and assessing patients' muscle function/mass, which can be used to help identify the most vulnerable patients for NHS prioritisation:

Screening

PRONTO[16]

PROtocol for NuTritional risk in Oncology – or PRONTO for short – is an easy-to-use tool for identifying patients at risk of malnutrition and/or loss of muscle function. There are three simple PRONTO questions:

1. Unintentional weight loss?
2. Eating less than usual?
3. Lost strength/feeling weaker.

If a patient answers 'yes' to any of these questions they should be considered for a detailed assessment.

R-MAPP[17]

A screening and guidance protocol for managing nutrition and sarcopenia, developed by European nutrition experts, used face-to-face or in remote consultations.

R-MAPP enables healthcare professionals to:

1. Use a step-by-step approach to screen patients remotely or in person
2. Incorporate 'MUST' (Malnutrition Universal Screening Tool)'[18] and SARC-F (Strength, Assistance with walking, Rising from a chair, Climbing stairs, and Falls)[19] to identify risk of malnutrition and sarcopenia
3. Use the screening results to provide management guidelines
4. Tailor therapy according to patient needs.

Assessment

Calf circumference[20-25]

An indirect measure of skeletal mass, widely used in clinical settings.[23] In addition to aiding the diagnosis of malnutrition and sarcopenia, calf circumference can also be used to predict fall, fragility, length of hospital stays and mortality.[23] Calf circumference measurements can be taken in standing position,[24] or in a seated position with the leg at a 90 degree angle[25] – see **Figure 3**.

Figure 3: Calf circumference measurements

Hand grip strength[26, 27]

A simple assessment to help identify functional decline.

"Adequate protein intake is a key factor for maintaining muscle health.[12]"

Visit ProConnect for more information on screening and nutrition

You will find a wealth of resources and tools to help dietitians address malnutrition and/or muscle loss in patients with cancer.

"We know that muscle loss is one of the main factors impacting someone's nutritional status in cancer." – Jaime Bevan, Prehabilitation Lead Dietitian, University Hospital Wales.

Summary

- Muscle loss is common among many types of cancer[1-4]
- Dietitians are ideally placed to recognise cancer-related muscle loss
- Screening allows early identification of muscle loss for NHS prioritisation
- Nutritional risk screening should be carried out regularly in all cancer patients undergoing anticancer treatment[13, 14]
- Easy-to-use tools are available to help dietitians integrate screening and assessment for cancer-related muscle loss into practice: **Screening:** • PRONTO[16] • R-MAPP[17] **Assessment:** • Calf circumference[20-25] • Hand grip strength[26, 27]
- Once cancer-related muscle loss is recognised, dietitians can provide optimal high-protein nutrition support and encourage muscle-building exercise.

Visit: www.proconnect.abbott/uk/en/home/adult/resources/public/sfl-ways-to-screen-v2.html to learn more.

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