Clinical Oncology Society of Australia

POSITION STATEMENT

CANCER-RELATED MALNUTRITION AND SARCOPENIA

About COSA

The Clinical Oncology Society of Australia (COSA) is Australia's peak multidisciplinary society for health professionals working in cancer research, treatment, rehabilitation and palliative care. COSA is recognised as an activist organisation whose views are valued in all aspects of cancer care. We are allied with, and provide high-level clinical advice to Cancer Council Australia.

The overarching mission of COSA is to improve the care of Australians affected by cancer. In order to improve cancer care and control in Australia COSA seeks to (as defined in the Constitution; approved 14 November 2017):

- Promote excellence in the multidisciplinary care and research relating to cancer – from prevention, diagnosis and treatment to follow-up, palliation and survivorship
- Encourage multidisciplinary collaboration of all professionals involved in cancer care and research
- Foster and promote cancer research
- Support the professional development and educational needs of cancer health professionals in the furtherance of the above objects

The Cancer-Related Malnutrition and Sarcopenia Position Statement was produced by a multidisciplinary Working Group of COSA members, under the guidance of the COSA Nutrition Group Executive Committee, Chaired by Dr Nicole Kiss.

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- All people with cancer identified as being 'at risk' of sarcopenia following appropriate screening should have a comprehensive evaluation of muscle status using a combination of assessments for muscle mass, muscle strength and function.
- All people with cancer-related malnutrition and sarcopenia should have access to the core components of treatment including medical nutrition therapy, targeted exercise prescription and physical activity advice, and physical and psychological symptom management.
- Treatment for cancer-related malnutrition and sarcopenia should be individualised, in collaboration with the multidisciplinary team (MDT), and tailored to meet needs at each stage of cancer treatment.
- Health services should ensure a broad range of health care professionals across the MDT have the skills and confidence to recognise malnutrition and sarcopenia to facilitate timely referrals and treatment.

Background

Malnutrition is characterised by loss of weight, loss of muscle and loss of sub-cutaneous body fat.[1] Cancer-related malnutrition can occur due to the presence of the cancer itself, the effect of cancer treatment on the consumption or absorption of nutrients, or patients undertaking 'restrictive' cancer diets.[2] Research over several decades has shown cancer-related malnutrition is associated with serious adverse consequences including reduced survival and ability to complete treatment, poorer quality of life and higher costs to the health care system.[3-7] It is a common condition, occurring in 30-40% of people with cancer, yet it is under-recognised and under-treated.[7] Australian studies have found that almost 50% of people with cancer-related malnutrition are not under the care of a dietitian.[8] Malnutrition can occur in people with any cancer diagnosis, although certain cancers, including head and neck, gastrointestinal, pancreatic and lung cancers, have up to a 4 fold increased risk of malnutrition compared to breast cancer.[9] Malnutrition can occur in people of any body mass index (BMI) category, including those classified as overweight or obese.[10,11] However, with the rising incidence of obesity in Australia the identification of malnutrition and underlying muscle loss is becoming more

complex and concurrently under-diagnosis is likely to rise.

Sarcopenia is characterised by loss of skeletal muscle mass and strength with an impact on physical performance, and is a key component of cancer-related malnutrition.[12,13] This is reflected in recent international definitions of malnutrition where the assessment of muscle mass is a criterion for the diagnosis of malnutrition.[14,15] Sarcopenia associated with ageing is known as primary sarcopenia, as opposed to secondary sarcopenia which is associated with disease, sedentary lifestyle or inadequate nutrition.[12] Research in cancer-related sarcopenia has largely focused on the presence of low muscle mass rather than the presence of both low muscle mass and low muscle function (strength or performance).[16-18] Cancer-related sarcopenia is associated with similar adverse consequences to cancer-related malnutrition and is also a common condition occurring in up to 60% of people with cancer, depending on cancer type.[18-20] Furthermore, sarcopenic obesity, a unique phenotype where low muscle mass and obesity occur simultaneously, is independently associated with reduced survival and increased complications in multiple cancer diagnoses and treatment modalities.[21]

Loss of muscle mass in cancer-related malnutrition and sarcopenia may simply be related to reduced nutritional intake.[2] Alternatively, muscle loss may develop as a result of tumour-related metabolic alterations or the presence of systemic inflammation.[2] This is particularly evident in cancer cachexia, a multifactorial syndrome with a complex underlying pathology.[22] While there are similarities across these conditions, it is generally accepted that weight and muscle loss occurring in cancer-cachexia cannot be reversed by conventional nutrition intervention.[23]

Evidence from national and international guidelines strongly supports the importance of identification and treatment of cancer-related malnutrition and sarcopenia prior to, during and post-treatment in order to improve outcomes for people with cancer.[3,6,24,25] Despite this considerable variation in screening, diagnosis and intervention occur across Australian health care settings. Barriers to improving care largely include inadequate time and services and varying perception of responsibility for identification and treatment.[26] Nevertheless, international studies demonstrate failure to improve care has a considerable financial burden that is likely to translate to a similar impact on the Australian health care system.[27,28]

This document outlines the position of COSA on the role of health professionals and health services in recognising and treating patients with cancer-related malnutrition and sarcopenia, with a focus on practice tips to support implementation of optimal management. It is intended for use by clinicians and health services to advocate for the resources and services required to support optimal management of cancer-related malnutrition and sarcopenia. Malnutrition and muscle loss also occur in adolescents and young adults with cancer; however, this document is intended to address the management of these conditions in adults.

Definitions

Malnutrition: A condition characterised by loss of weight, loss of muscle or low body mass index plus reduced food intake/ assimilation or inflammation.

Sarcopenia: Currently no global definition, however most definitions include low appendicular lean mass with low muscle strength and/or performance (refer Table 4).

Cachexia: A multifactorial syndrome characterised by progressive loss of skeletal muscle, that may or may not include loss of fat mass, which cannot be completely reversed by nutrition intervention.

Screening: The first line process of identifying if a patient is at risk of malnutrition or sarcopenia through the use of validated screening tools.

Nutrition assessment: A comprehensive investigation using validated assessment tools or processes to diagnose the presence or absence of malnutrition.

Medical nutrition therapy: An evidence-based approach to nutritional treatment of a medical condition that involves comprehensive nutrition assessment, nutrition diagnosis, intervention using individualised counselling to meet goals tailored to the medical condition, lifestyle, socioeconomic concerns and social circumstances, and requires ongoing monitoring and evaluation.

Skeletal muscle mass: Represents the combined weight of all skeletal muscle in an individual.

Lean body mass: Excluding fat mass, this represents the combined weight of internal organs, bone, muscle, connective tissue and body fluids.

Fat mass: The combined weight of all fatty tissue.

Appendicular lean mass: The combined weight of lean body mass from arms and legs.

Physical activity: Any bodily movement produced by the contraction of skeletal muscles that requires energy expenditure.

Exercise: A type of physical activity consisting of planned, structured and repetitive bodily movement for the purpose of improving and/or maintaining health and physical fitness.

Multidisciplinary team: A team comprising a range of health professionals, including nursing and a variety of medical and allied health disciplines.

Prehabilitation: A structured program designed to improve physical and psychological health through nutrition, exercise and psychological intervention provided soon after diagnosis or prior to anti-cancer treatment.

Rehabilitation: A structured program to support the recovery of physical and psychological health through nutrition, exercise and psychological intervention provided during or following anti-cancer treatment.

Health service: An organisation providing services to people with cancer and includes hospitals, rehabilitation centres, community and primary care settings and private practice.

Identifying Cancer-Related Malnutrition and Sarcopenia

Cancer-related malnutrition and sarcopenia are under-recognised and therefore under-treated conditions. Neither malnutrition nor sarcopenia should be associated exclusively with being underweight, as these conditions can also be present at any body weight or BMI including obesity.[18,29] Timely and accurate identification of malnutrition and sarcopenia in all clinical practice settings is essential to support the initiation of optimal multidisciplinary care for people with these conditions, and a subsequent reduction in disability, mortality and healthcare costs.[3,7,30] This identification process, commonly known as screening, enables recognition of people with cancer as 'at risk' or 'not at risk' of these conditions.

Screening for malnutrition should be undertaken on all people with cancer at diagnosis, and repeated as clinically indicated throughout each modality of treatment (e.g. surgery, radiation therapy, chemotherapy), post-treatment and surveillance.[3,24,25] Where limited resources restrict the ability to screen all patients, resources should be devoted to ensuring those at highest risk are screened (Table 1). Malnutrition screening should be undertaken using a malnutrition screening tool validated in the setting in which it is intended for use.[6,24] A number of malnutrition screening tools have been shown to be valid and reliable for identifying malnutrition in people with cancer including the Malnutrition Screening Tool (MST), Malnutrition Universal Screening Tool (MUST), Malnutrition Screening Tool for Cancer Patients (MSTC) and the Patient–Generated Subjective Global Assessment Short Form (PG-SGA SF) (Table 2).[3] The MST and MUST are most commonly used in Australia and can be self-administered or completed by any health professional.[31,32] Screening for malnutrition can be bypassed for people with a cancer diagnosis or treatment plan known to lead to high risk of malnutrition, e.g. radiation therapy with or without chemotherapy to the gastrointestinal tract or head and neck area.[6,25] All people with cancer identified as being 'at risk' of malnutrition following screening, or with a diagnosis or treatment that places them at high risk of malnutrition, should be referred to an accredited practising dietitian for a comprehensive nutritional assessment and initiation of appropriate treatment.[3,6,24]

Table 1: Factors indicative of high risk of malnutrition

Cancer diagnosis	*Treatment*	*Other*
• Head and neck • Upper or lower gastrointestinal • Thoracic • Acute leukaemia (myeloid and lymphoid)	• Radiation therapy to oral cavity or gastrointestinal tract • Chemotherapy, immunotherapy or targeted therapies with risk of gastrointestinal toxicity • Stem cell transplant • Surgery to the oral cavity or gastrointestinal tract • Steroid use with treatment	• Advanced stage disease • Older age (> 65 years)

Table 2: Valid and reliable tools to screen for malnutrition risk in people with cancer

Screening Tool	*Inpatient setting*	*Outpatient setting*	
		Chemotherapy	Radiation therapy
Malnutrition Screening Tool (MST)	✓	✓	✓
Malnutrition Universal Screening Tool (MUST)	✓	✓	✓
Malnutrition Screening Tool for Cancer Patients (MSTC)	✓		
Patient-Generated Subjective Global Assessment Short Form (PG-SGA SF)		✓	

Screening for sarcopenia should be completed in all people with cancer at diagnosis and as clinically indicated throughout each modality of treatment (e.g. surgery, radiation therapy, chemotherapy), post-treatment and surveillance. The SARC-F is a sarcopenia screening tool that has been well studied and validated in older adults.[33] The SARC-F has recently been validated for use in people with cancer, either alone or in combination with measurement of calf circumference for greater sensitivity.[34] All people identified as 'at risk' of sarcopenia should be referred to an accredited practising dietitian and exercise specialist i.e. accredited exercise physiologist and/or physiotherapist, experienced in the cancer setting and with knowledge of body composition science, for assessment of muscle strength, muscle mass and physical performance, and initiation of appropriate treatment.

Recommendations

1. All people with cancer should be screened for malnutrition in all health settings at diagnosis and repeated as the clinical situation changes, using a screening tool that is valid and reliable in the setting in which it is intended for use.
2. All people with cancer should be screened for sarcopenia at diagnosis and repeated as the clinical situation changes, using the validated screening tool SARC-F or SARC-F in combination with calf circumference.

Implementation Tips

1. Consider incorporating screening for malnutrition and sarcopenia into existing multidisciplinary and/or supportive care screening processes or patient-reported outcomes to aid ease of completion and compliance, reduce the need for additional resources and to support the initiation of appropriate assessment and care.

2. Screening should focus on early identification using a systematised model of care or pathway that defines the tools to be used, who will conduct screening, the timing and frequency of screening, and pathways for treatment referrals appropriate to the setting.

Assessing Cancer-Related Malnutrition and Sarcopenia

Nutrition assessment is recommended for all people with cancer identified as 'at risk' of malnutrition following screening or with a cancer diagnosis or treatment plan known to lead to high risk of malnutrition e.g. patients receiving radiation therapy to the head and neck area or gastrointestinal tract.[6,25] Nutrition assessment and malnutrition diagnosis should be completed by an appropriately trained health care professional such as an accredited practising dietitian or if not available, other allied health or medical professional. Nutrition assessment should be repeated as the clinical situation changes and incorporated into routine clinical consultations to monitor the effects of nutrition intervention.[3] Nutrition assessment should incorporate measures of involuntary weight loss, BMI, body composition, food intake and nutrient absorption, functional status and inflammation.[3] The 2019 Global Leadership Initiative on Malnutrition (GLIM) have produced a consensus statement outlining the recommended assessment domains for a diagnosis of malnutrition (Table 3).[15] The Patient-Generated Subjective Global Assessment (PG-SGA)[35] and Subjective Global Assessment (SGA)[36] are validated assessment tools that align with the GLIM criteria for diagnosing malnutrition and can be used to assess and diagnose malnutrition in people with cancer.[6]

Sarcopenia assessment is recommended for all people identified as 'at risk' of sarcopenia following screening and is ideally performed at the time of cancer diagnosis and before an initial treatment plan is implemented. Reassessment should occur as the clinical situation changes and incorporated into routine clinical consultations during active treatment and then ongoing surveillance throughout the course of care. Sarcopenia assessment and diagnosis should be completed by an appropriately trained health care professional such as an accredited practising dietitian, accredited exercise physiologist, physiotherapist or other allied health or medical professional. Assessment should consider whether it is primary sarcopenia (age-related) or secondary sarcopenia (other causal factors).[13] These causal factors may include:[13]

(i) Disease - secondary to a systemic disease especially where inflammation is present as in cancer;
(ii) Inactivity - sedentary lifestyle or disease-related immobility or disability; or
(iii) Malnutrition - as a result of inadequate energy or protein caused by anorexia, malabsorption, food insecurity or limited ability to eat.

Table 3: GLIM diagnostic criteria for malnutrition[15]

	Etiologic	*Phenotypic*
GLIM criteria: Presence of at least one phenotypic criteria and one etiologic criteria	Reduced food intake or assimilation	Weight loss
	Inflammation	Low body mass index
		Reduced muscle mass

There is no global consensus on the diagnostic criteria for sarcopenia. Commonly used definitions include the European Working Group on Sarcopenia in Older people (EWGSOP) 1,[12] EWGSOP 2,[13] and the Foundation for the National Institutes of Health (FNIH) Biomarkers Consortium Sarcopenia Project (Table 4).[37] However, these definitions and cut-points have been developed based on research in older adults and have not been extensively researched in cancer populations. Most research in cancer has assessed sarcopenia based on low muscle mass alone from Computed Tomography (CT) images using cut-points prognostic for poor survival.[38,39] The various methods used for diagnosing sarcopenia are presented in Table 4. Selection of assessment method may depend on patient factors, access to the required technical resources and the purpose of testing. Clinicians and researchers should understand the strengths and limitations of the assessment method being applied and understand these are not interchangeable.[12,13] Ongoing research will contribute to identifying cut-points relative to patient population and ethnicity.

Recommendations

1. All people with cancer identified as being 'at risk' of malnutrition following screening or with a cancer diagnosis or treatment plan known to lead to high risk of malnutrition should have comprehensive nutrition assessment using a tool validated in the oncology population.

2. All people with cancer identified as being 'at risk' of sarcopenia following appropriate screening should have a comprehensive evaluation of muscle status using a combination of assessments for muscle mass, muscle strength and function.

3. Interpretation of diagnostic criteria for sarcopenia should be applied recognising that:
   a. Threshold values for assessing muscle mass, muscle strength and physical performance are variable.
   b. Care should be taken to determine the appropriate cut-off values in the population in which they are being applied.
   c. Most data regarding muscle strength and performance comes from older populations.
   d. The applicability of diagnostic criteria in different ethnicities is uncertain.

Implementation Tips

1. Malnutrition assessment should be incorporated into the appropriate nutrition care policy directives with local governance, management committees and performance review processes embedded to support successful and sustainable implementation.

2. A measure of muscle mass should be a component of assessment of malnutrition and sarcopenia and incorporated into routine clinical practice.

3. Identification of barriers and enablers to malnutrition and sarcopenia assessment at individual, team and system levels is the first step to facilitate adherence to evidence-based nutrition care recommendations and policies.

Table 4: Definitions of sarcopenia

Definition	*Low muscle strength*	*Low muscle mass*	*Poor muscle function*
EWGSOP 1 (2010) Low muscle mass + low muscle strength or low physical performance	**Grip strength** <30 kg men <20 kg women	**ALM*/height (m)^2** <7.26 kg/m^2 men <5.50 kg/m^2 women	**Gait Speed** ≤0.8 m/sec (4m walk) **or** **SPPB Score** ≤8 points
FNIH (2014) Low muscle mass + low muscle strength	**Grip strength** <26 kg men <16 kg women	**ALM/BMI** <0.789 kg/BMI men <0.512 kg/BMI women	N/A
EWGSOP 2 (2019) Low muscle strength + low muscle mass or low physical performance	**Grip strength** <27 kg men <16 kg women **or** **Chair Stands** >15 sec five rises	**ALM/height (m)^2** <7.00 kg/m^2 men <5.50 kg/m^2 women **or** **ALM** <20 kg men <15 kg women	**Gait Speed** ≤0.8 m/sec (4m walk) **or** **SPPB Score** ≤8 points **or** **TUG** ≥20 sec **or** **400m walk** ≥6 minutes or non-completion *Only used to classify severity of sarcopenia*
Cancer-specific CT image analysis research# Low muscle mass	N/A	**SMI [SMA/height (m)^2] at L3** <52.4 cm^2/m^2 (men)[18] <38.5 cm^2/m^2 (women)[18] **or** <43 cm^2/m^2 (men with BMI<24.9)[39] <53 cm^2/m^2 (men with BMI ≥ 25)[39] < 41 cm^2/m^2 (women of any BMI)[39]	N/A

*EWGSOP 1, European Working Group on Sarcopenia in Older People; EWGSOP 2, European Working Group on Sarcopenia in Older People updated definition; FNIH, Foundation for the National Institutes of Health Biomarkers Consortium Sarcopenia Project; ALM, appendicular lean mass; BMI, body mass index; SPPB, Short Physical Performance Battery; TUG, Timed Up and Go; CT, Computed Tomography; SMI, Skeletal Muscle Index; SMA, skeletal muscle area determined from cross-sectional CT image at the third lumbar vertebrae. *ALM can be assessed using Dual energy X-Ray Absorptiometry (DXA), Magnetic Resonance Imaging (MRI), CT, raw Bioelectrical Impedance Analysis (BIA) or Bioelectrical Impedance Spectroscopy (BIS). Muscle mass outputs produced automatically by BIA and BIS devices may be less accurate due potential to be affected by fluid shifts and a lack of transparency regarding the population-specific regression equations underpinning their outputs owing to their proprietary nature,[40-43] however, some guidelines support use in clinical practice.[13] #Multiple cut-points for SMI at the third lumbar vertebrae are used in the literature, depending on population and ethnicity. These are suggested cut-points; however, clinicians are advised to research the most appropriate cut-point for their population.*

Treating Cancer-Related Malnutrition and Sarcopenia

Treatment of cancer-related malnutrition and sarcopenia aims to provide adequate nutritional intake and participation in exercise in order to optimise body composition with a focus on preserving or improving lean mass and physical function, as well as assisting patients to complete cancer treatment.[6,25,29] However, people with cancer commonly report unmet needs in access and provision of nutritional and exercise advice for the management of their malnutrition or sarcopenia, and are seeking consistent care from health professionals across their treating team to address nutrition needs.[44-47]

Medical nutrition therapy, that considers symptoms, social situation, and treatment plan, has been found to improve nutritional intake, weight and patient-reported physical function, and reduce treatment breaks and unplanned hospital admissions.[3,6,25] Sufficient intake of energy and protein is required to treat malnutrition, with evidence-based guidelines recommending between 105 and 125kJ/kg/day and between 1.0 to 1.5 grams/kg/day in protein.[3] Recent literature suggests that in fact a higher protein of 2.0 grams/kg/day may be required to combat muscle loss, however this is not yet supported by sufficient research.[17] Specific recommendations regarding the use and timing of initiation of medical nutrition therapy, including enteral and parenteral therapy, and Early Recovery After Surgery (ERAS) protocols are available for some cancer types including head and neck and upper and lower gastrointestinal cancers.[3,6,24,25]

For medical nutrition therapy to be optimally effective, it needs to occur alongside exercise intervention.[48] Exercise training provides the necessary support for nutrition intervention to improve (or prevent worsening) in body composition, specifically, preservation or increases in lean tissue, with or without changes in body weight.[3,49,50] Resistance exercise is more effective than aerobic exercise at improving muscle mass and strength.[51] However, aerobic exercise remains relevant as it also modulates muscle metabolism, insulin sensitivity and levels of inflammation in a way that could potentially aid in preservation of muscle mass and function.[51] As such, in line with the most up to date Australian exercise prescription guidelines for people with cancer, individually prescribed multimodal exercise training (including targeted aerobic and resistance exercise) at moderate to high intensity, with emphasis on resistance exercise incorporating exercises for major muscle groups, is recommended.[51]

Although promising, evidence is variable for the use of anabolic or appetite stimulating agents, such as progestins, or non-steroidal anti-inflammatory agents, and their use should be evaluated on an individual basis by the MDT or disease protocol.[3] Supportive care screening to identify unmet needs, including symptom management and psychosocial needs, is important for a holistic approach.

Interventions are most effective when commenced early, with a focus on prevention or the treatment of mild to moderate malnutrition and/or sarcopenia.[22] However, despite the evidence for treatment of cancer-

related malnutrition and sarcopenia, consistent and equitable access to care is lacking.[3,46,47] The potential benefit to the health system through implementing evidence-based treatment of malnutrition and sarcopenia is significant, estimated to be the equivalent of AUD $800K per 100,000 population.[27,52] Detailed recommendations regarding evidence-based treatment for people undergoing different treatment modalities and for specific cancer diagnoses can be found in the evidence-based guidelines listed in the resources page of this Position Statement.

Recommendations

1. All people with cancer-related malnutrition and sarcopenia should have access to the core components of treatment including individualised medical nutrition therapy, targeted exercise prescription and physical activity advice, and physical and psychological symptom management.
2. Treatment for cancer-related malnutrition and sarcopenia should be individualised, in collaboration with the MDT, and tailored to consider multi-morbidities and meet needs at each stage of cancer treatment.

Implementation Tips

1. Models of care to treat malnutrition and sarcopenia should provide consistent information regarding cancer-related malnutrition and sarcopenia across disciplines and throughout phases of treatment to ensure reinforcement of a clear treatment plan.

2. Consider the use of a care pathway, or similar process, developed by MDT members and people with cancer to support implementation of optimal care for cancer-related malnutrition and sarcopenia.

Role of the Multidisciplinary Team

A multidisciplinary approach to identifying and treating cancer-related malnutrition and sarcopenia is essential. Alongside medical nutrition therapy, interventions that have been shown to contribute to optimising nutritional status and body composition include exercise, management of treatment side effects through optimising medications, and the management of anorexia and dysphagia.[3,25] Frameworks, such as the team mental model, have been found to optimise team processes and functioning.[53]

Multidisciplinary cancer prehabilitation and rehabilitation programs providing individualised care demonstrate capacity to improve nutritional status, strength, fatigue and performance status.[54-57] These interventions require the specialist skills of various MDT members as part of a coordinated approach to individualised treatment of cancer-related malnutrition and sarcopenia and can be accessed through acute hospital services, community-based services or general practices:

Carer/ family/ friends	Assistance with shopping, meal preparation, and encouragement and social support to eat well and engage in exercise
Dietitian	Comprehensive nutrition assessment (including muscle mass) to diagnose malnutrition and provision of individualised medical nutrition therapy
Exercise Physiologist and Physiotherapist	Exercise prescription, including resistance training, to maintain or improve muscle mass and function
General Practitioner (GP)	Nutrition screening and facilitate referrals to other clinicians to support improvement in nutritional and functional status prior to attending hospital
Oncologist/ Specialist Medical Practitioner	Optimise symptom management, facilitate referrals to other clinicians, reinforce the nutrition and exercise plan throughout and beyond treatment
Nurse	Nutrition and functional screening, facilitate referrals to other clinicians, reinforce the nutrition and exercise plan throughout and beyond treatment
Nutrition or Allied Health Assistant	Nutrition screening, monitor dietary intake
Occupational Therapist	Provide support for functional impairment that may affect nutritional intake e.g. eating and preparing meals
Psychologist	Counselling for mental health concerns e.g. anxiety and depression, that may affect nutritional intake, and supporting behavioural change for nutrition and exercise interventions
Social Worker	Organise support services for meal delivery or shopping, address financial hardship that may impact on nutrition and exercise choices
Speech Pathologist	Prevention and management of swallowing dysfunction

Note: all MDT members should monitor clinical and patient-reported outcomes and consider referrals to other health care professionals where appropriate to optimise patient outcomes.

Recommendations

1. Health services should ensure a broad range of health care professionals across the MDT have the skills and confidence to recognise malnutrition and sarcopenia to facilitate timely referrals and treatment.

2. MDTs should work towards an individualised and coordinated approach to treating cancer-related malnutrition and sarcopenia.

Implementation Tips

1. Engage consumers in the development and evaluation of MDT services across the continuum of care.

2. Utilise a framework e.g. team mental model, to develop and refine MDT services to optimise the success of the team, and importantly clinical and patient-reported outcome and experience measures.

Resources

Evidence-Based Practice Guidelines

- European Society for Clinical Nutrition and Metabolism (ESPEN) guidelines on nutrition in cancer patients

  Available via www.espen.org

- Dietitians Association of Australia (DAA) guideline for nutritional management of patients receiving radiation therapy and/or chemotherapy

  Available via doi.org/10.1111/1747-0080.12013

- COSA guidelines for the nutritional management of adults with head and neck cancer

  Available via wiki.cancer.org.au/australia/Guidelines

- Academy of Nutrition and Dietetics (AND) oncology evidence-based nutrition practice guideline

  Available via doi.org/10.1016/j.jand.2016.05.010

- MacMillan UK guidance on prehabilitation for people with cancer

  Available via www.macmillan.org.uk

- Exercise and Sports Science Australia (ESSA) guidelines for exercise in cancer survivorship

  Available via doi.org/10.1016/j.jsams.2019.05.003

- American College of Sports Medicine Exercise Guidelines for Cancer Survivors

  Available via doi.org/10.1249/MSS.0000000000002116

Education

- EviQ Education malnutrition in cancer e-learning modules

  Available via education.eviq.org.au

Service Improvement

- Victorian Cancer Malnutrition Collaborative (VCMC) governance toolkit

  Available via www2.health.vic.gov.au

- Dutch Malnutrition Steering Group Fight Malnutrition

  Available via www.fightmalnutrition.eu

- American Cancer Society guidelines on exercise is medicine in oncology: Engaging clinicians to help patients move through cancer

  Available via doi.org/10.3322/caac.21579

- The CanEAT pathway: a guide to optimal cancer nutrition for people with cancer, carers and health professionals

  Available via www.petermac.org

- Online and culturally and linguistically translated malnutrition screening tool

  Available via www.petermac.org

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This Position Statement was endorsed by a meeting of COSA Council on 6 March 2020 and remains in effect for three years from that date during which time the Position Statement may be amended by action of COSA Council.

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Dietitians Australia

Cancer Council Australia

Australian and New Zealand Society for Sarcopenia and Frailty Research

Cancer Nurses Society of Australia

SUPPORTING ORGANISATIONS

Australasian Gastro-Intestinal Trials Group
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Australasian Lung Cancer Trials Group
Australian and New Zealand Children's Haematology Oncology Group
Australian and New Zealand Head and Neck Cancer Society
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This information has satisfied the requirements for Dietitians Australia's process of endorsement. For expert nutrition and dietary advice contact an Accredited Practising Dietitian (APD). Visit 'Find an Accredited Practising Dietitian' at dietitiansaustralia.org.au or call 1800 812 942.

Clinical Oncology Society of Australia

CANCER-RELATED MALNUTRITION AND SARCOPENIA

DIAGNOSIS → **TREATMENT** → **RECOVERY**

SCREENING

Screen all patients for malnutrition[1] and sarcopenia[2]

Repeat as the clinical situation changes, e.g. new treatment commences, new symptoms present

Not at risk

At risk

Incorporate into existing supportive care screening processes

In health services with limited resources proritise screening of high risk patient groups[3]

ASSESSMENT

Malnutrition

Refer to a dietitian for comprehensive nutrition assessment using tools validated in oncology populations[4]

Incorporate into existing clinical policies

Sarcopenia

Refer to a dietitian and exercise physiologist/ physiotherapist for comprehensive evaluation of muscle mass, strength and function[5]

TREATMENT

Access to the core components of treatment

Individualised exercise prescription

Individualised medical nutrition therapy

Physical & psychological symptom management

Consider the use of care pathways to support the delivery of optimal care

MULTIDISCIPLINARY COLLABORATIVE CARE

[1]VALID MALNUTRITION SCREENING TOOLS

- Malnutrition Screening Tool (MST)
- Malnutrition Universal Screening Tool (MUST)
- Malnutrition Screening Tool for Cancer Patients (MSCT)
- Patient-Generated Subjective Global Assessment Short Form (PG-SGA-SF)

[2]VALID SARCOPENIA SCREENING TOOLS

- SARC-F
- SARC-F in combination with calf circumference

[3]HIGH RISK PATIENTS

- Head and neck, lung, upper or lower gastrointestinal cancer
- Radiation therapy to the oral cavity or gastrointestinal tract
- Chemotherapy, immunotherapy, or targeted therapies with risk of gastrointestinal toxicity
- Stem cell transplant
- Surgery to the oral cavity or gastrointestinal tract

[4] VALID NUTRITION ASSESSMENT TOOLS

- Patient-Generated Subjective Global Assessment (PG-SGA)
- Subjective Global Assessment (SGA)

[5]METHODS TO ASSESS MUSCLE STATUS

- Muscle mass: Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Dual X-Ray Absorptiometry (DXA), raw bioimpedance analysis (BIA) or bioimpedance spectroscopy (BIS) data for appendicular or whole body muscle mass
- Muscle strength: handgrip strength, chair stand test
- Physical performance: Short Physical Performance Battery (SPPB), usual gait speed, timed up-and-go