2025

ONCOLOGY NURSES NUTRITION ONLINE LEARNING

THIS INFORMATION IS FOR HEALTHCARE PROFESSIONALS ONLY

Accurate at time of publication February 2025

WHAT YOU WILL LEARN IN THIS TRAINING:

- The important role of the oncology nurse in nutritional care
- Understanding malnutrition/cancer cachexia and the impact on patients
- Understanding patients nutritional requirements
- Identifying malnutrition through nutrition screening
- Management of malnutrition in cancer and the role of medical nutrition

IMPORTANCE OF ADDRESSING MALNUTRITION

In patients with cancer, weight and muscle loss can detrimentally affect patients lives, impacting their treatment outcomes, well-being and quality of life.[1-6]

Increased toxicity of treatments[1-2]

Impaired physical function[3]

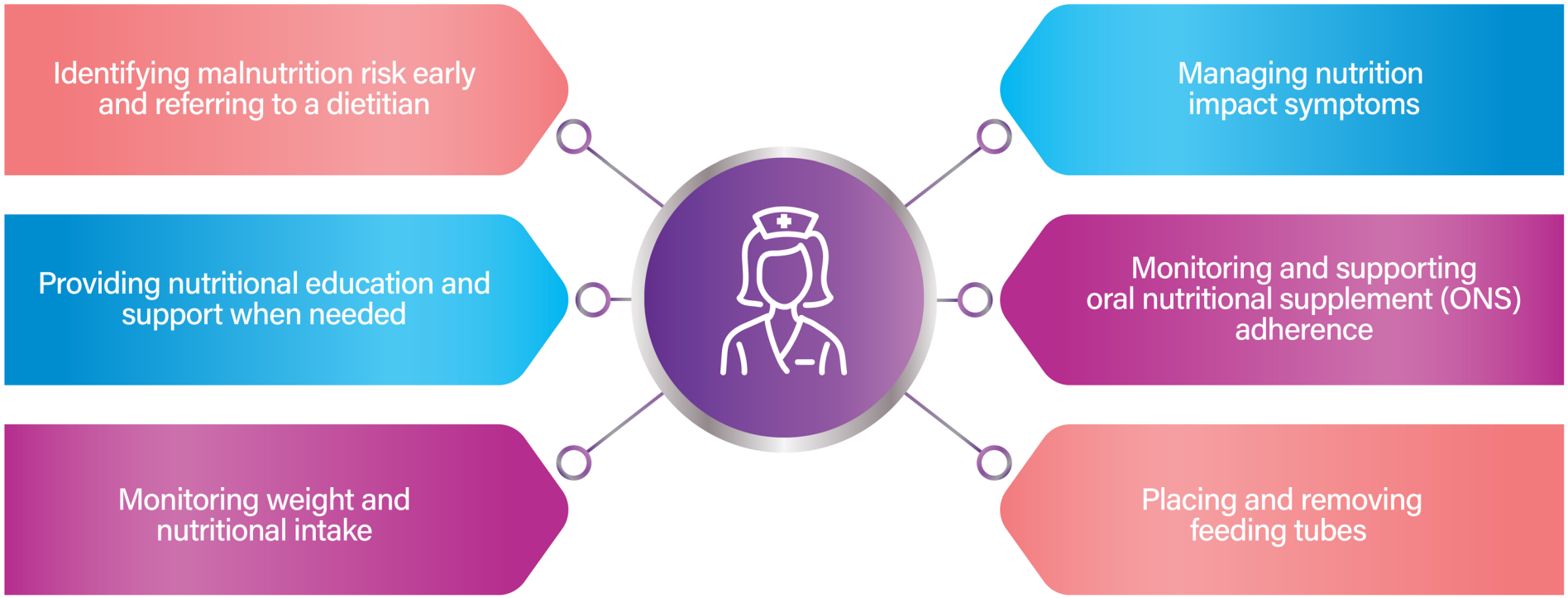
Prolonged length of hospital stay[4,5]

Decreased quality of life[4,6]

References: 1. Ryan AM, et al. Nutrition. 2019;67-68:110539. 2. Hsueh, et al. Support Care Cancer. 2021;29 [9]:5455-5462. 3. Muscaritoli et al. 2021. Front. Oncol. 11:682999 4. Zhang, et al. J Geriatr Oncol. 2019;10[6]:874-883. 5: Loan, et al. Nutrition. 2018:48:117-121. 6. Langius, et al. Nutr Cancer. 2013;65 [1]:76-83.

THE ROLE OF THE ONCOLOGY NURSE IN NUTRITIONAL CARE

As an oncology nurse, you play a crucial role in supporting patients with cancer. In a European survey (UK, FR, NL) of 113 nurses working with oncology patients, more than 80% of nurses play an important role in nutritional management[1]



References: 1. HRW Oncology Nurse Survey, 2023. Data on file.

MALNUTRITION AND CANCER CACHEXIA

THERE IS AN INTERPLAY AMONG MALNUTRITION, SARCOPENIA, PHYSICAL FRAILTY, AND CACHEXIA

POTENTIAL CAUSES

- Aging
- Age-related hormonal changes
- Anorexia
- Sedentarism
- Illness/injury
- Oxidative stress
- Inflammation
- Altered glucose and insulin homesotais
- ↓ Myostatin
- ↓ Number of capillaries within muscle tissue
- ↓ Arterial blood flow
- ↓ Alpha motor neurons

CONSEQUENCES

MALNUTRITION

Weight loss
Low BMI
Reduced muscle mass
Reduced food intake

SARCOPENIA

Low muscle mass
Low muscle function
Low muscle strength
Poor physical performance

PHYSICAL FRAILTY

Weakness
Slow walking speed
Balance impairment

CACHEXIA

Weight loss
Low BMI
Low muscle mass

Malnutrition is one of the factors that can lead to loss of muscle mass and function (i.e., sarcopenia), which may progress to physical frailty. Malnutrition and low muscle mass may progress to cachexia in individuals with cancer. Therefore, early identification and nutrition intervention is needed in patients at risk of malnutrition.

References: Prado et al. Clin Nutr. 2022; 41(10):2244-2263

LOW MUSCLE MASS CAUSED BY MALNUTRITION / CANCER CACHEXIA IS ASSOCIATED WITH UNFAVOURABLE OUTCOMES[1–3]

Decreased survival[1–3]

Increased risk of hospital re-admissions and extended stays[4,5]

Increased post-operative complications[6]

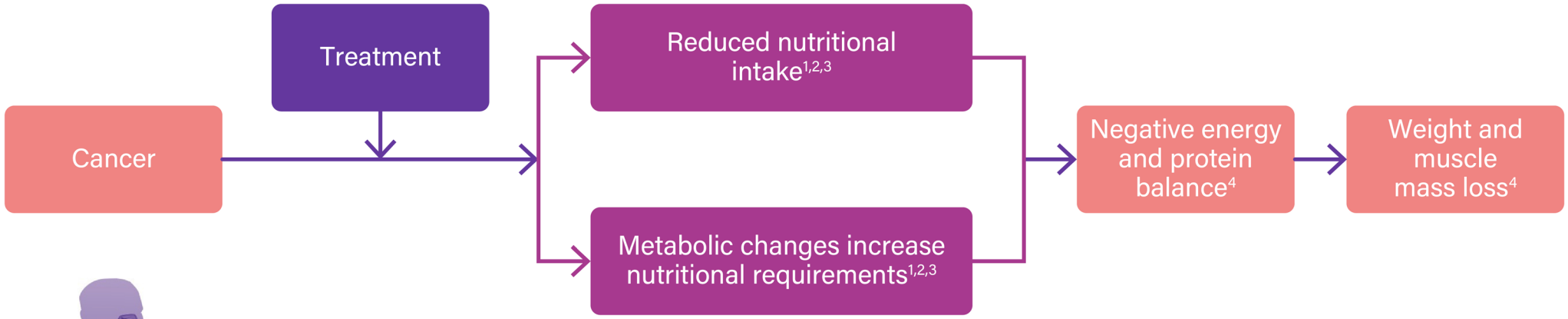
Increased chemotherapy toxicities[1]

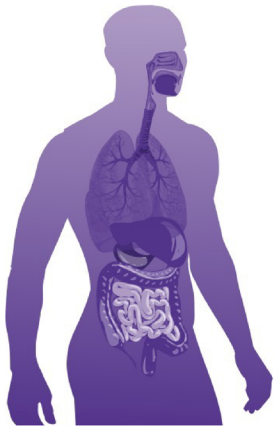
Decreased physical function[7]

Poor quality of life[8]

References: 1. Ross et al. Br J Cancer. 2004;90(10):1905-1911. 2. Martin et al. J Clin Oncol. 2015;33(1):90-99. 3. Gannavarapu et al. J Oncol Pract. 2018;14(4):e238-e250 4. Planas et al. Support Care Cancer. 2016;24(1):429-435. 5. Gourin et al. Ann Otol Rhinol Laryngol. 2014;123(2):101-110. 6. Yu et al. Eur J Clin Nutr. 2013;67(7):732-737. 7. Mariani et al. Support Care Cancer. 2012;20(2):301-309. 8. Sánchez-Lara et al. Nutr Cancer. 2012;64(4):526-534.

WHY IS MALNUTRITION PREVALENT IN PATIENTS WITH CANCER?





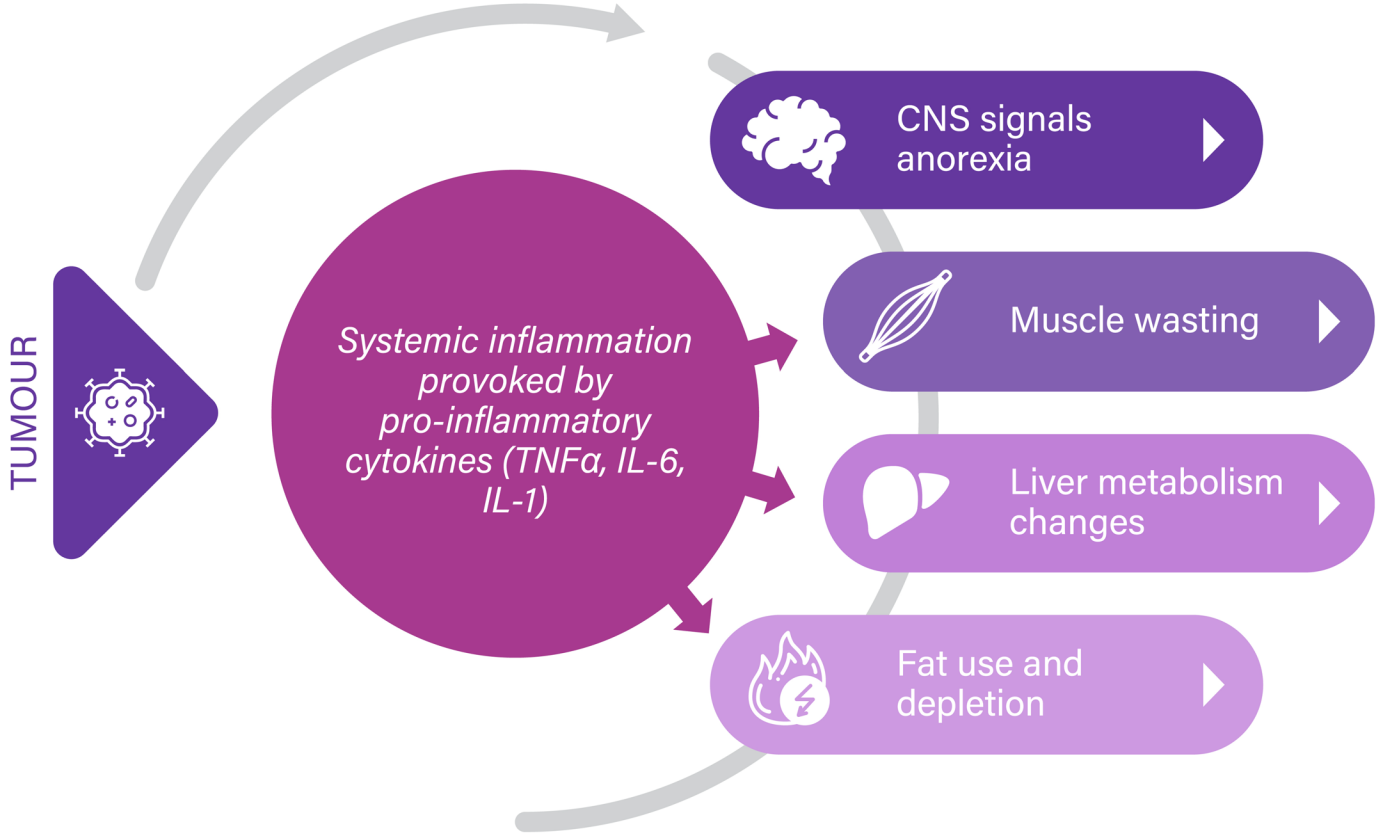
Cancer and the effect of treatment can impact the nutritional status of patients which can lead to **cancer related malnutrition and poorer outcomes**[3] if not addressed.

Cancer related malnutrition is driven by a combined effect of reduced nutritional intake and metabolic changes.

These factors contribute to negative energy and protein balance leading to **weight and muscle mass loss.**[4]

References: 1. Marín Caro et al. Clin Nutr. 2007;26(3):289-301. 2. Fearon, et al. Lancet Oncol. 2011;12(5):489-495. 3. Arends et al. Clin Nutr. 2016;36(1):11-48. 4. Arends et al. Clin Nutr. 2017;36(5):1187-1196.

METABOLIC CHANGES INCREASE NUTRITIONAL REQUIREMENTS



Why are nutritional requirements increased?

Systemic inflammation is frequently activated in patients with cancer leading to metabolic changes which can lead to an increase in nutritional requirement.

Adapted from Arends et al. 2017[1]

References: 1. Arends et al. Clin Nutr. 2017;36(5):1187-1196.

YOU KNOW BETTER THAN ANYONE HOW CANCER TREATMENT SIDE EFFECTS IMPACT YOUR PATIENT'S WELLBEING

Cancer and its treatment can lead to:

Extreme fatigue[1,2]

Loss of appetite[2,3]

Taste alterations[4]

Weight loss[5,6]

Muscle loss[7]

Gastrointestinal symptoms[7-9]

You are your patient's rock every day
HELP THEM MEET THEIR NUTRITIONAL NEEDS THROUGHOUT THEIR TREATMENT JOURNEY.

These symptoms that impact a patient's ability to meet their nutritional needs can also be considered "nutrition impact symptoms" in the context of malnutrition in cancer.

References: 1. Al Maqbali M. 2021, J Pain Symptom Manage;61(1):167-189.e14. 2. Jacobs et al. 2019, J Natl Compr Cancer Netw; 17(3):221-228. 3. Muscaritoli M, et al. 2017, Oncotarget; 8(45):79884-79896. 4. Spotten LE, et al. 2017, Ann Oncol; 28(5):969-984. 5. Martin et al. 2015, J Clin Oncol; 33(1):90-9. 6. Muscaritoli M, et al. 2019, J Cachexia Sarcopenia Muscle; 10(3):517-525. 7. Ryan et al. 2019, Nutrition; 67-68,110539. 8. Arends J, et al. 2021, ESMO Open; 6(3):100092. 9. Arends J, et al. 2017, Clin Nutr; 36(1):11-48.

NUTRITIONAL REQUIREMENTS IN CANCER

NUTRITIONAL REQUIREMENTS ARE INCREASED IN PATIENTS WITH CANCER

Protein requirements can increase by up to double the standard recommended intake for patients with cancer.

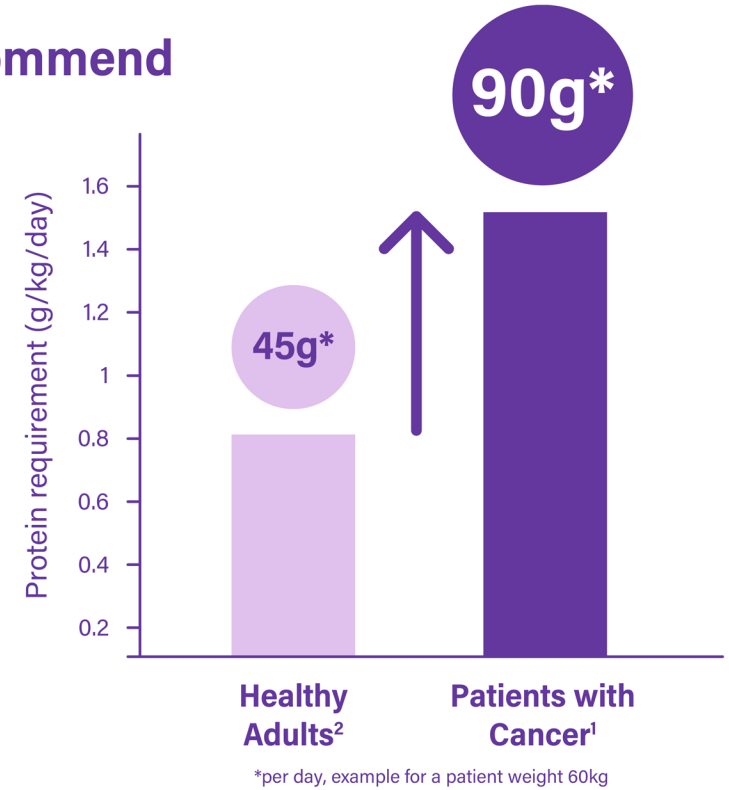
ESPEN* guidelines on nutrition in patients with cancer recommend an increased protein intake, as follows[1,2]:

ESPEN Protein requirements

Recommended protein intake (g/kg/day)

Healthy adults[3]
0.75g/kg/day

Patients with cancer [1,2]
above 1g/kg/day and up to 1.5g/kg/day



*per day, example for a patient weight 60kg

Energy requirements:[1,2] 25 – 30 kcal/kg/day

Micronutrient intake needs to be supplied in appropriate amount equal to the RDA[1,2]

*The European Society for Clinical Nutrition and Metabolism.

References: 1. Arends et al.Clin Nutr. 2016;36(1):11-48. 2. Muscaritoli, Arends, Bachmann et al. Clin Nutr. 2021; 40: 2898-2913. 3. Gandy et al. Blackwell Publishing, 2014.

MANY PATIENTS WITH CANCER STRUGGLE TO EAT ENOUGH PROTEIN

ADVANCED CANCER

Low protein intake (<1g/kg/d) was reported in **66%** of patients with **advanced cancer undergoing chemotherapy**[1]

HEAD & NECK CANCER

52% failed to achieve protein intakes above minimum ESPEN* requirements **(>1.0 g/kg/d)**[2]

CANCER SURGERY

Within the first week post major abdominal cancer surgery, **protein intake was insufficient in 90% of patients**[3]

*European Society for Clinical Nutrition and Metabolism

References: 1. Stobaus et al. Nutr Cancer 2015, 67(5):818. 2. McCurdy, et al. Nutrients. 2019 Nov 12;11(11):2743. 3. Constansia RDN, et al. Nutr Clin Pract. 2022 Feb;37(1):183-191.

CONSIDER THE AVERAGE AMOUNT OF PROTEIN IN COMMONLY EATEN FOODS, AND WHAT THIS MIGHT MEAN FOR A PATIENT TRYING TO MEET THE RECOMMENDED REQUIREMENTS FOR PROTEIN[1,2]

Pot of yoghurt
= 7g protein

x2 medium-sized boiled eggs
= 14g

250ml whole cow's milk
= 8.5g

250ml oat milk
= 1.6g

Tin of tuna
= 25g

½ chicken breast
= 27g

Handful of mixed nuts (30g)
= 6g

½ Tin of Baked Beans
= 9.5g

100g Tofu*
= 8-23.5g

*Variation across type and brands.

References: 1. McCance and Widdowson. The Composition of Foods Integrated Dataset 2021. Available at: www.gov.uk/government/publications/composition-of-foods-integrated-dataset-cofid [Accessed: August 2024]. 2. www.tesco.ie/groceries/en-IE.

WHAT DOES THIS LOOK LIKE IN PRACTICE?
LETS USE A CASE STUDY

CASE STUDY: MR HARDING*

- 75-year-old male referred for nutritional support
- Presenting condition: lung cancer
- Recent weight loss of 10kg
- Persistent breathlessness, a persistent painful cough and muscle wasting

PARAMETER	MEASURE
Height	1.70m
Current Weight	60kg
Previous Weight (3-6 months ago)	70kg
Current BMI	20.8kg/m^2
MUST**Score	2

*Fictional case example, provided for illustrative purposes only. **Malnutrition Universal Screening Tool.

WHAT DOES THIS LOOK LIKE IN PRACTICE?
CASE STUDY CONTINUED

ESTIMATED REQUIREMENTS		
ENERGY: 2000-2300kcals	**PROTEIN:** 60-90g	**FLUID:** 1800ml
25-30kcal/kg/day	1-1.5g/kg/day	30mls/kg/day

A TYPICAL DIETARY INTAKE FOR MR HARDING*			
Breakfast 1 slice wholemeal toast with butter and Marmite 1 sliced banana ½ cup fruit yoghurt 1 cup of tea with milk and 1 tsp sugar	**Lunch** 1 small bowl of vegetable soup 1 slice of wholemeal bread with butter ½ cup grapes	**Dinner** 1 small portion of fish pie ½ cup vegetables 1 small pot of custard	**Snacks** 2 biscuits 1 pear ¼ cup dried fruit 4 boiled sweets 1 cup of tea with milk and 1 tsp sugar

TOTAL DAILY INTAKE	
ENERGY: 1400kcal	**PROTEIN:** 28g

*Fictional case example, provided for illustrative purposes only.

WHAT DOES THIS LOOK LIKE IN PRACTICE?

NOTE THE DIFFERENCES BETWEEN ACTUAL FOOD INTAKE AND REQUIREMENTS

ENERGY & PROTEIN DEFICIT	
ENERGY DEFICIT: 600kcal	**PROTEIN DEFICIT: 32g**

THE EXTRA FOOD REQUIRED TO BRIDGE THE GAP:

Egg mayonnaise sandwich
240kcal and **12g protein**

2 x 200ml glasses of whole milk
260kcal and **15g protein**

Rice pudding
100kcal and **5g protein**

Think about actions that you could take as a nurse to support a patient who is struggling to make up this deficit in calories and protein alongside other nutrition impact symptoms.

Fictional case example, provided for illustrative purposes only.

EARLY IDENTIFICATION OF MALNUTRITION

NUTRITIONAL SUPPORT SHOULD BE AN INTEGRAL PART OF PATIENT CARE ALONG THE CANCER JOURNEY

FIRST SYMPTOMS / DIAGNOSIS

From cancer diagnosis onward, **focus on optimising nutritional status for better adherence to treatment**

Focus on assessing nutritional risk to implement early nutritional support: consider prehabilitation strategies as needed

Up to **65%** of cancer patients have experienced weight loss at first hospital visit.[1]

DURING TREATMENT

SURGERY

CHEMOTHERAPY

RADIOTHERAPY

TARGETED THERAPY/ IMMUNOTHERAPY

Focus on supporting nutritional needs to optimise treatment outcomes

Side effects from treatment such as nausea, vomiting, mucositis, taste alterations, dry mouth and diarrhea, adversely impact food intake and increase the risk of malnutrition.[2]

Major surgeries can cause metabolic stress, increase need for protein, and lead to skeletal muscle breakdown and loss.[3]

RECOVERY AFTER TREATMENT

Focus on getting back in shape, enhanced recovery and returning to normal food.

1/3 of cancer patients report functional impairments.[4-5]

LIVING WITH CANCER

Patients now live longer with cancer. **Focus on optimising quality of life in patients living with incurable cancer.** End of life care, when needed, focuses on comfort.

Oncology patients report to have on average up to 4 nutrition related challenges.[6]

Nutritional challenges are associated with ongoing symptoms or disease progression, and can negatively impact on health and quality of life.

Consider the focus point for nutrition each step of the way.

References: 1. Muscaritoli et al. 2017 Oncotarget, 8(45):79884-798. 2. Sonneborn-Papakostopoulos et al. 2021 Med Oncol, 38(2):20. 3. Weimann et al. 2017 Clin Nutr, 36 (3): 623-650. 4. Neo et al. Cancer Treat Rev. 2017. 61:94-106. 5. Maňásek et al. 2016 Klin Onkol, 29(5):351-357. 6. Ipsos European Oncology Patient Survey, 2023. Data on file.

YOU HAVE A CENTRAL ROLE TO PLAY IN THE EARLY RECOGNITION AND TREATMENT OF MALNUTRITION IN PATIENTS WITH CANCER

ESMO* cancer cachexia guidelines[1] acknowledge the important role of oncology nurses:

1.
Screen for nutritional risk

2.
Take action for those identified as malnourished/ low muscle mass

3.
Action includes:
- Dietary advice
- Oral nutritional supplements as required .

Find out what is available in your Trust

4.
Refer to the dietitian as required.

5.
Your role as nurse is key in managing nutrition impact symptoms (dry mouth, nausea, taste changes, pain etc.)

SCREENING FOR MALNUTRITION CAN BE QUICK AND EASY

Use of screening tools vary between hospitals and Trusts, please check your local practices.

*European Society for Medical Oncology.

References: 1. Arends et al. ESMO Open. 2021; 6(3):100092.

NUTRITION SCREENING TOOL USED WIDELY IN THE UK:

THE MALNUTRITION UNIVERSAL SCREENING TOOL (MUST)

LINKS:

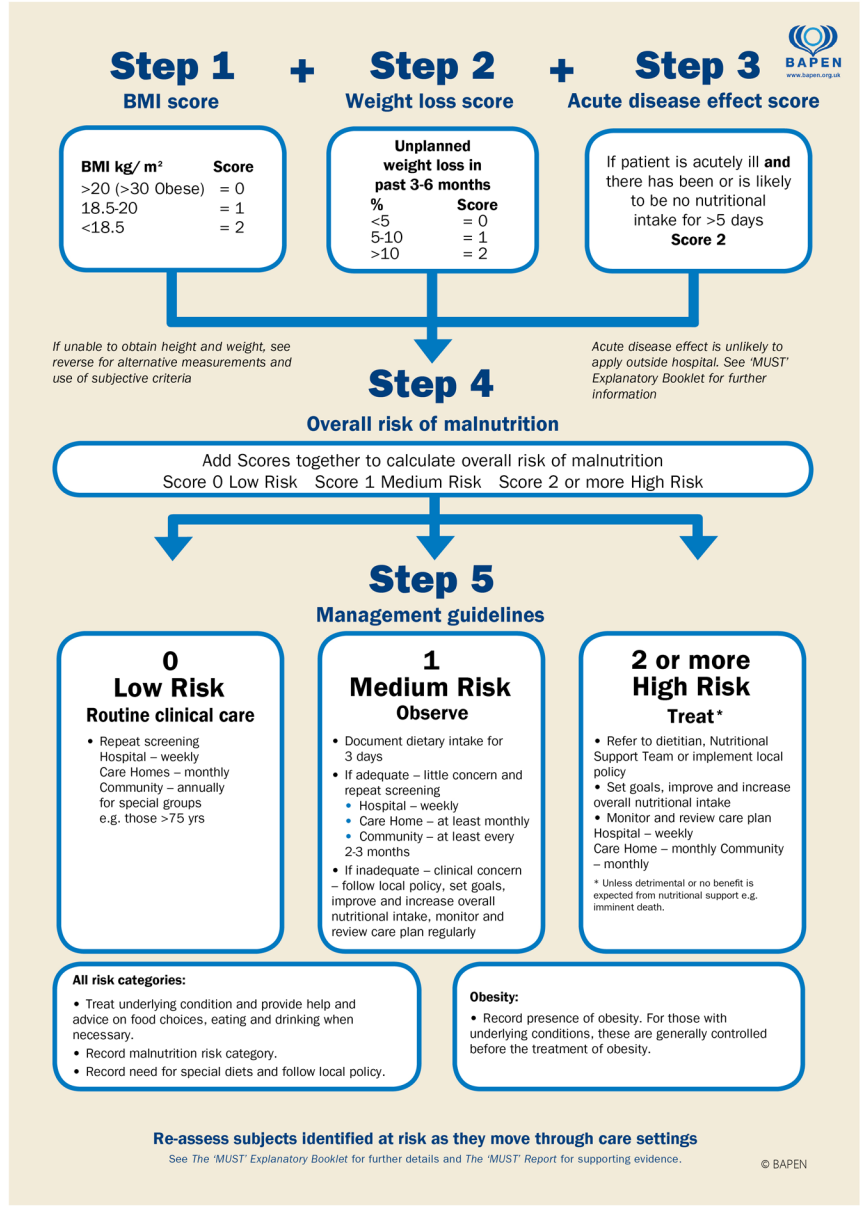
The ‘MUST’ Toolkit | BAPEN

‘MUST’ Calculator | BAPEN

Patients self-screening:

Unexplained Weight Loss, Poor Appetite - BAPEN Malnutrition Self-Screening

Please check your Trust policy on screening tools as practices vary, and ask your manager or local dietitian for training



BAPEN. The Malnutrition Universal Screening Tool (MUST. https://www.bapen.org.uk/must-and-seld-screening/must-toolkit/

BUILD THESE QUESTIONS ON NUTRITION AND MUSCLE MASS LOSS INTO YOUR HOLISTIC NEEDS ASSESSMENT CONVERSATIONS[1]

RED FLAGS OF MALNUTRITION:

- Loss of appetite
- Unintentional weight loss
- Loss of muscle mass
- Reduced handgrip strength

ASK:

- Do you have problems with eating?
- Have you lost weight without trying?
- Do you have taste changes/ nausea/ dry mouth/ pain?
- Do you feel weaker and more fatigued?

OBSERVE:

- Are clothes fitting loosely?
- Is their jewellery or watch falling off?
- Is your patient often sleepy, tired or cold?

If you observe signs of malnutrition in patients with cancer, promptly refer at-risk patients to a dietitian

Which questions will you start asking your patients today?

References: 1. European Cancer Nursing Society, NutriCaNurse Project, 2021. Clinical Practice Guidance for Cancer Nurses: Nutrition in people with cancer.

IF YOU ARE VERY SHORT ON TIME AND CAPACITY, HERE ARE 3 SIMPLE QUESTIONS YOU CAN ASK[1]:

1 

Have you lost weight unintentionally (5-10% or more) in the last 3-6 months/ since your last consultation?

2 

Have you eaten less than usual in the last week/ since your last consultation?

3 

Have you lost your strength or feel weaker than usual/ since your last consultation?

IF 'YES' TO ANY OF THESE QUESTIONS, THEN INTERVENE

Refer to a nutrition expert for screening/assessment and nutritional counselling. Patient may need medical nutrition intervention.

References: 1. Muscaritoli, M. et al. Cancers. 2023, 15, 380.

MANAGEMENT OF MALNUTRITION IN CANCER: FIRST LINE DIETARY ADVICE AND THE ROLE OF MEDICAL NUTRITION

MANAGING MALNUTRITION: ACTIONS TO CONSIDER AS A NURSE

- Find out what booklets and information are available at your Trust, including leaflets, recipe books and the types of oral nutritional supplements your dietitians like to use as first line.
- Is there a nutritional care pathway in place that you could follow or ask your dietitian if you can collaborate to develop one?
- Have some first line booklets and recipe ideas available in clinic.
- Get to know your local dietitians and how they work, and how you can refer.
- If a patient is on an oral nutritional supplement check that they are taking it as prescribed. If not, find out why.
- If a patient tells you they are struggling to take an oral nutritional supplement, think of practical suggestions to improve matters: ask the dietitian about alternative options or flavours. Lolly moulds and recipe cards are available from manufacturers to support adherence.

Have you identified that a patient is malnourished?
TAKE ACTION and ALWAYS put a follow-up plan in place.

MANAGING MALNUTRITION: FIRST LINE DIETARY ADVICE

Better nutrition in cancer is about listening to your patient about how they are relating to food and social experiences around food and suggesting practical ways to support and manage a reduced food intake.

? **Ask your patients about barriers to eating e.g. symptoms or side effects of treatment that they might be experiencing.**

Suggest small, frequent meals, the "little & often" approach

Eat from a smaller plate if a large plate of food is overwhelming and build in snacks

Look for opportunities to add protein foods to meals and snacks

e.g.

- Grated cheese on vegetables and potatoes
- Peanut butter toast
- Yoghurt & milky puddings e.g. rice pudding, custard

TO FIND OUT MORE ABOUT SPECIFIC RECOMMENDATIONS, HERE ARE 2 GUIDELINE DOCUMENTS YOU CAN READ:

European Society for Parenteral and Enteral Nutrition has published 2 guidelines which you can access here:

ESPEN (2016)[1] guidelines on nutrition in cancer patients.

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

ESPEN Guideline

ESPEN guidelines on nutrition in cancer patients☆

Jann Arends [a], Patrick Bachmann [b], Vickie Baracos [c], Nicole Barthelemy [d], Hartmut Bertz [a], Federico Bozzetti [e], Ken Fearon [f, j], Elisabeth Hütterer [g], Elizabeth Isenring [h], Stein Kaasa [i], Zeljko Krznaric [j], Barry Laird [k], Maria Larsson [l], Alessandro Laviano [m], Stefan Mühlebach [n], Maurizio Muscaritoli [m], Line Oldervoll [i, o], Paula Ravasco [p], Tora Solheim [q, r], Florian Strasser [s], Marian de van der Schueren [t, u], Jean-Charles Preiser [v, *]

[a] Department of Medicine I, Medical Center – University of Freiburg, Faculty of Medicine, University of Freiburg, Germany
[b] Centre Régional de Lutte Contre le Cancer Léon Bérard, Lyon, France
[c] Department of Oncology, University of Alberta, Edmonton, Canada
[d] Centre hospitalier universitaire, Liège, Belgium
[e] University of Milan, Milan, Italy
[f] Western General Hospital, Edinburgh, United Kingdom
[g] Medical University of Vienna, Austria
[h] Bond University, Gold Coast, Australia
[i] Norwegian University of Science and Technology, Trondheim, Norway
[j] University Hospital Center and School of Medicine, Zagreb, Croatia
[k] Beatson West of Scotland Cancer Centre, Edinburgh, United Kingdom
[l] Karlstad University, Karlstad, Sweden
[m] University of Rome La Sapienza, Roma, Italy
[n] University of Basel, Basel, Switzerland
[o] The Norwegian Heart and Lung Association (LHL), Oslo, Norway
[p] Faculty of Medicine, University of Lisbon, Lisbon, Portugal
[q] European Palliative Care Research Centre (PRC), Department of Cancer Research and Molecular Medicine, Faculty of Medicine, NTNU, Norwegian University of Science and Technology, Norway
[r] Cancer Clinic, St. Olavs Hospital, Trondheim University Hospital, Trondheim, Norway
[s] Oncological Palliative Medicine, Clinic Oncology/Hematology, Dept. Internal Medicine and Palliative Center, Cantonal Hospital St. Gallen, Switzerland
[t] VU University Medical Center (VUmc), Amsterdam, Netherlands
[u] HAN University of Applied Sciences, Nijmegen, Netherlands
[v] Erasme University Hospital, Université Libre de Bruxelles, Brussels, Belgium

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SUMMARY

Cancers are among the leading causes of morbidity and mortality worldwide, and the number of new cases is expected to rise significantly over the next decades. At the same time, all types of cancer treatment, such as surgery, radiation therapy, and pharmacological therapies are improving in sophistication, precision and in the power to target specific characteristics of individual cancers. Thus, while many cancers may still not be cured they may be converted to chronic diseases. All of these treatments, however, are impeded or precluded by the frequent development of malnutrition and metabolic derangements in cancer patients, induced by the tumor or by its treatment.

These evidence-based guidelines were developed to translate current best evidence and expert opinion into recommendations for multi-disciplinary teams responsible for identification, prevention, and treatment of reversible elements of malnutrition in adult cancer patients.

The guidelines were commissioned and financially supported by ESPEN and by the European Partnership for Action Against Cancer (EPAAC), an EU level initiative. Members of the guideline group were selected by ESPEN to include a range of professions and fields of expertise.

☆ These guidelines have been officially endorsed by the European Society of Surgical Oncology (ESSO), the European Association for Palliative care (EAPC) and the Chinese Society of Clinical Oncology (CSCO).

* Corresponding author.
E-mail address: jean-charles.preiser@erasme.ulb.ac.be (J.-C. Preiser).
† Deceased.

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ESPEN (2021)[2] practical guideline: clinical nutrition in cancer patients.

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ESPEN Guideline

ESPEN practical guideline: Clinical Nutrition in cancer

Maurizio Muscaritoli [a, *], Jann Arends [b], Patrick Bachmann [c], Vickie Baracos [d], Nicole Barthelemy [e], Hartmut Bertz [b], Federico Bozzetti [f], Elisabeth Hütterer [g], Elizabeth Isenring [h], Stein Kaasa [i], Zeljko Krznaric [j], Barry Laird [k], Maria Larsson [l], Alessandro Laviano [e], Stefan Mühlebach [m], Line Oldervoll [n], Paula Ravasco [o], Tora S. Solheim [p], Florian Strasser [q], Marian de van der Schueren [r, s], Jean-Charles Preiser [t], Stephan C. Bischoff [u]

[a] Department of Translational and Precision Medicine University La Sapienza, Rome, Italy
[b] Department of Medicine I, Medical Center – University of Freiburg, Faculty of Medicine, University of Freiburg, Germany
[c] Centre Régional de Lutte Contre le Cancer Léon Berard, Lyon, France
[d] Department of Oncology, University of Alberta, Edmonton, Canada
[e] Centre Hospitalier Universitaire, Liege, Belgium
[f] University of Milan, Milan, Italy
[g] Division of Oncology, Department of Medicine I, Medical University of Vienna, Austria
[h] Bond University, Gold Coast, Australia
[i] Norwegian University of Science and Technology, Trondheim, Norway
[j] University Hospital Center and School of Medicine, Zagreb, Croatia
[k] Institute of Genetics and Molecular Medicine, University of Edinburgh, Edinburgh, UK
[l] Karlstad University, Karlstad, Sweden
[m] University of Basel, Basel, Switzerland
[n] Center for Crisis Psychology, University of Bergen, Norway/Department of Public Health and Nursing, Faculty of Medicine and Health Sciences, The Norwegian University of Science and Technology (NTNU), Trondheim, Norway
[o] Faculty of Medicine, University of Lisbon, Lisbon, Portugal
[p] Cancer Clinic, St.Olavs Hospital, Trondheim University Hospital, Department of Clinical and Molecular Medicine, Faculty of Medicine and Health Sciences, Norwegian University of Science and Technology, Norway
[q] Oncological Palliative Medicine, Clinic Oncology/Hematology, Department Internal Medicine and Palliative Center, Cantonal Hospital St. Gallen, Switzerland
[r] HAN University of Applied Sciences, Nijmegen, the Netherlands
[s] Wageningen University and Research, Wageningen, the Netherlands
[t] Erasme University Hospital, Universite Libre de Bruxelles, Brussels, Belgium
[u] Department for Clinical Nutrition, University of Hohenheim, Stuttgart, Germany

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SUMMARY

Background: This practical guideline is based on the current scientific ESPEN guidelines on nutrition in cancer patients.
Methods: ESPEN guidelines have been shortened and transformed into flow charts for easier use in clinical practice. The practical guideline is dedicated to all professionals including physicians, dieticians, nutritionists and nurses working with patients with cancer.
Results: A total of 43 recommendations are presented with short commentaries for the nutritional and metabolic management of patients with neoplastic diseases. The disease-related recommendations are preceded by general recommendations on the diagnostics of nutritional status in cancer patients.
Conclusion: This practical guideline gives guidance to health care providers involved in the management of cancer patients to offer optimal nutritional care.

* Corresponding author.
E-mail address: maurizio.muscaritoli@uniroma1.it (M. Muscaritoli).

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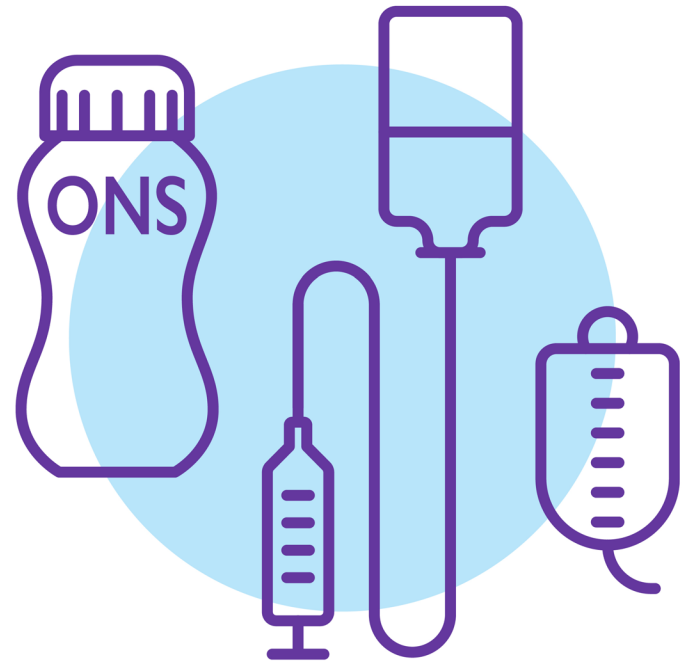
"Nutritional interventions are recommended to increase oral intake in patients with cancer who are able to eat but are malnourished or at risk of malnutrition. This includes dietary advice, the treatment of symptoms and derangements impairing food intake (nutrition impact symptoms) and offering oral nutritional supplements."

References: 1. Arends et al. Clin Nutr. 2016; 36(1):11-48. 2.Muscaritoli, Arends, Bachmann et al. Clin Nutr. 2021; 40: 2898-2913

WHAT IS MEDICAL NUTRITION?

Medical nutrition therapy is a term that encompasses oral nutritional supplements (ONS), enteral tube feeding (enteral nutrition) and parenteral nutrition.[1]

Early and appropriate initiation of medical nutrition benefits patients.



References: 1. Cederholm et al. Clin Nutr. 2017; 36(1):49-64.

ORAL NUTRITIONAL SUPPLEMENTS (ONS) ARE SUPPORTED BY NICE GUIDELINES TO HELP MANAGE MALNUTRITION IN ADDITION TO DIETARY ADVICE

Evidence for oral nutritional supplements (ONS)

NICE CG32 2006[1]

Strong evidence to support the appropriate use of oral nutritional supplements (ONS) in the management of malnutrition across settings and in different patient types.

The appropriate use of oral nutritional supplements (ONS) can result in **significant clinical and health-economic benefits.**

Impact statement 2017:

Oral nutritional supplements (ONS) improve intake, weight, BMI, nutritional status, quality of life, mortality.

Appear to be cost saving and cost effective

NICE National Institute for Health and Care Excellence

UNCHANGED IN JULY 2017 REVIEW

References: 1. NICE. Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition. Clinical Guideline 0G32. https://www.nice.org.uk/Guidance/CG32 [Accessed October 2020].

MEDICAL NUTRITION IMPROVES OUTCOMES IN PATIENTS WITH CANCER

Improved QoL[1,4]

Improvements in nutritional intake and status[1,2,3]

Reduced mortality and positive impact on survival[5,6]

Decreased post operative infections and complications[7,8]

Helps support better tolerance to chemotherapy[11,12]

Improved radiotherapy tolerance[9,10]

References: 1. Bargetzi et al. Annals of Oncology. 2021; 8, P1025-1033. 2. Blackwood et al. Supportive Care Cancer 2020; 28(4):1877-1889. 3. Van der Schueren et al. Ann Oncol 2018; 29(5):1141-115. 4. Nguyen et al. Cancer Medicine 2021; 10(5), 1668-1680. 5. Kaegi-Braun et al. Frontiers in Nutrition 2020; 7:603370. 6. Van der Werf et al. Clin Nutr 2020, 39(10):3005-3013. 7. Cao Y, et. al. Dis Esophagus. 2022 Mar 12;35(3):doab028. 8. Kabata et al. Supportive Care in Cancer 2014; 23, 365-370 9. Kono et al. Head Neck 2021, 43(2):514-519. 10. Huanget al. Oral Oncology 2020, 111:105025. 11. Meng et al. Clin Nutr 2021;40(1):40-46. 12. Tan et al. Clin Nutr 2021;40(1):47-53.

UNDERSTANDING ORAL NUTRITIONAL SUPPLEMENTS (ONS)

Get to know which product is considered a “first line” product in your Trust or area or ask your dietitians what they would use first.

Request some samples* so that you can get to know the flavours, formats and textures available:

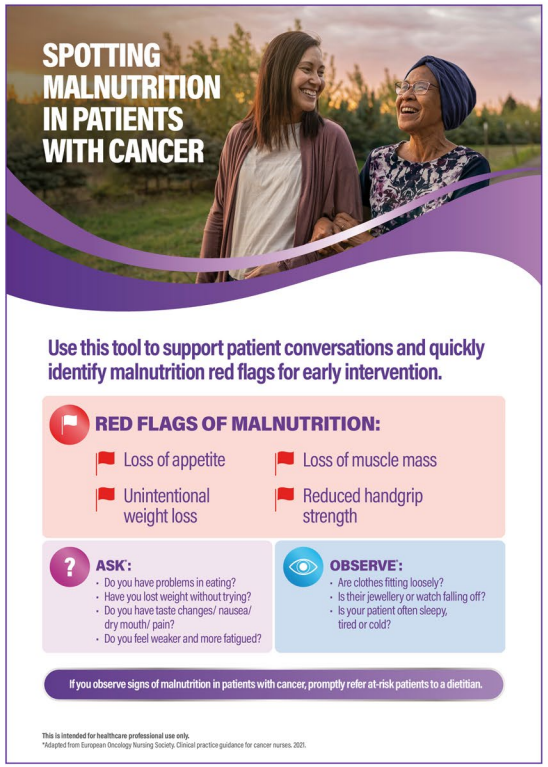
There are various types of ONS:

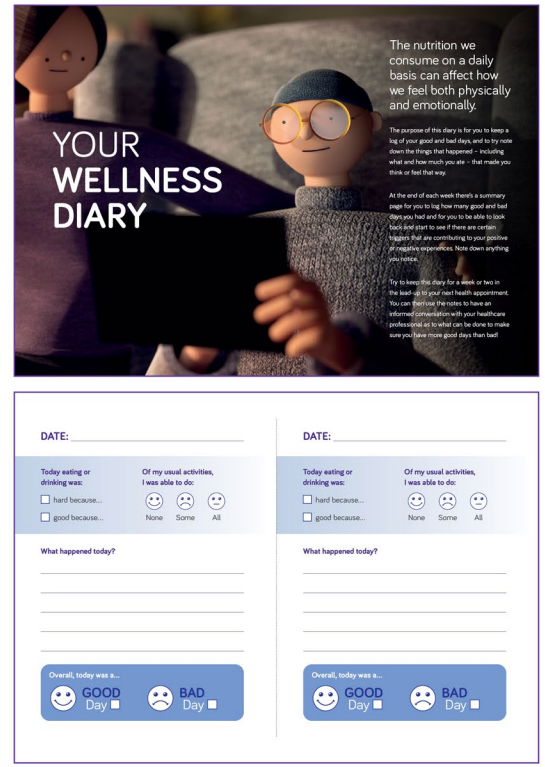
- Low volume
- Milk-based
- Plant-based/ Vegan
- Juice style
- Dessert style
- Sensory adapted flavours

Get to know flavours and options available for patients with cancer that meet their nutritional needs and support their taste preferences.

*Product can be provided to patients upon the request of a Healthcare Professional. They are intended for the purpose of professional evaluation only.

AS PART OF THE NURSE'S TOOLKIT, YOU HAVE ACCESS TO USEFUL RESOURCES TO IDENTIFY MALNUTRITION AND SUPPORT YOUR PATIENTS TO EAT BETTER:





THANK YOU