Section 8

Malnutrition

Topics in this section include:

Our population is aging, and while many older Canadians live healthy and active lifestyles, many others grow weaker, move slower, and become less active over time.[1] These are signs of frailty and malnutrition, which can lead to difficulty with everyday tasks, higher risk for falls and fractures, or need for hospital admissions.[1]

8.1 Malnutrition: Overview

Malnutrition can affect people of all ages, of all body sizes, and in all care settings.[1] Malnutrition is a condition when people do not get enough nutrition from the food they eat or do not consume sufficient food.[1]

Malnutrition presents itself with changes in body composition and decreased function. Being malnourished increases risk of death, delays wound healing, and increases rates of infection.[1]

There are many factors which increase the risk of poor nutrition in seniors such as:[1]

- Poor appetite
- Losing weight without trying
- Dental problems
- Swallowing difficulty/dysphagia
- Financial hardship
- Loss of taste and smell
- Physical disability such as arthritis or poor mobility
- Medication side effects
- Chronic illnesses such as cancer, diabetes, or Parkinson's
- Being in hospital
- Poor hydration status
- Mental health and dementia
- Lack of appropriate cultural and religious foods

Remember:

- Malnutrition is common in senior populations and is one of the main risk factors for the onset of frailty.[2]
- Incidence of frailty is also much higher among seniors who are malnourished.[2,3]
- Research from the Canadian Malnutrition Task Force (CMTF) found that that nearly half of the patients admitted to acute care facilities in Alberta are malnourished.[1]
- Some smaller projects in Alberta and British Columbia found that 42–64% of home care and supportive living clients are malnourished or at risk of malnutrition.[4]
- Malnutrition often is unrecognized and only 1 of 5 clients with malnutrition or at risk of malnutrition are referred to dietitians.[4]

8.2 Frailty

Frailty has multiple causes and presents itself with many signs such as decreased strength, energy, and physiologic function.[3]

The main feature of frailty is increased vulnerability, with reduced physical reserve, and loss of function across multiple body systems.[3] Frailty is most obvious under stress and, is evident by large and rapid changes in health status.[3]

Frailty is associated with risk of functional decline, loss of independence, decline in health status, increased risk of hospitalization, and increased risk of death.[3]

8.3 Sarcopenia of Aging

- Sarcopenia is the age-related gradual decline in muscle mass and function, starting in the 4th decade of life, and is a key cause of disability and mortality.[4]
- It is associated with an increased risk for falls and an overall prevalence for frailty.[5,6]
- It is influenced by nutrition, physical activity, comorbidities, and psychosocial factors with increased loss of muscle mass and function.[4,7]

Nutrition screening:

- is recommended to identify malnutrition in all seniors considered frail[8]
- should be a routine practice and can be carried out by any health care professional[8]
- can be used to identify vulnerable individuals who are at risk of malnutrition and need further assessment to improve care and outcomes once issues are identified [8,9,10]

Nutrition is one of the key areas where treatment for frailty is promising, especially if the individual is also malnourished.[8] It has been shown that early nutrition intervention in seniors at risk can reverse malnutrition and frailty.[8]

8.4 Nutrition Screening for Malnutrition

Nutrition screening is often the first step in identifying residents at risk of malnutrition.[11,12] The purpose of nutrition screening is to identify:

- Residents who are at risk of a poor health outcome due to nutritional factors that decrease intake and/or increase the body's needs for nutrients and/or energy.
- Residents who are at risk of malnutrition.

8.4.1 Nutrition Screening Pathway for Supportive Living

Many residents who are either malnourished or at risk of malnutrition are missed because there is no formal screening process. To identify residents at risk of malnutrition and improve the care of these clients, Alberta Health Services (AHS) has developed a Nutrition Screening Pathway for Supportive Living Clients.[9]

Nutrition Services' managers and dietitians will work with home care staff, supportive living case managers, and other health care providers to implement the Nutrition Screening Pathway.

The Nutrition Screening Pathway for Supportive Living Clients is used by case managers to provide a consistent approach to identifying and providing care for residents at risk of malnutrition.

The Nutrition Screening Pathway is available from:

- Continuing Care Connections (password required)
- AHS external Appendix 8F (available to all)

Once residents who are at risk of malnutrition are identified, the entire team can work together to implement the **'Nutrition Care Pathway'**. Team members can help identify those residents at risk of malnutrition by sharing valuable information on poor intake or weight changes with case managers.

Nutrition Care Pathway, Risk of Malnutrition and Nutrition Care

Nutrition Care Pathway	Weight Loss	Intake	Risk of Malnutrition	Responsibility	Dietitian Consult
Standard Nutrition Care	No weight loss	Good/ adequate intake	Low risk (Not malnourished)	• All site staff to monitor	
Advanced Nutrition Care	No weight loss	Poor intake	Risk of Malnutrition	• All site staff to monitor • Case manager	At discretion of case manager
Specialized Nutrition Care	Weight loss	Poor intake	Malnourished	• All site staff to monitor • Case manager • Dietitian	Dietitian consult

Print out the Tips to Get Residents Ready poster (Appendix 8G) and display in nursing offices and dining rooms as a quick reference tool for staff.

Standard Nutrition Care – Residents with no weight loss and good or adequate intake

Standard Nutrition Care

- Client is wearing glasses and has dentures in-place when eating, when applicable
- Food and fluids are available and accessible
- Address any issues of pain, nausea, vomiting or diarrhea
- Encourage a healthy diet
- Offer snacks between meals if needed (2-3 snacks per day)
- Monitor for signs of dysphagia/swallowing difficulty
- Monitor weight and intake as per site policy

This quality of Nutrition Care should be provided to all residents.

Advanced Nutrition Care – Residents with no weight loss but poor intake

Advanced Nutrition Care

Continue Standard Nutrition Care and:

- Inform nursing staff of residents with poor food or fluid intake
- Encourage comfort foods and snacks
- Offer high protein and/or high calorie food choices such as offering milk with meals, eggs, cheese, butter, etc.
- Discuss with dietitian or physician if diet can be liberalized
- Track food intake using site guidelines (such as 3-day food diary)
- Monitor weights monthly

Dietitian Consult: Specialized Nutrition Care – Residents with weight loss and/or poor intake

Specialized Nutrition Care

Continue Advanced Nutrition Care and:

- Submit referral to dietitian for comprehensive nutrition assessment
- Dietitian will individualize treatment and monitoring for resident

The Nutrition Screening Pathway uses the Mini-Nutrition Assessment® – Short-Form (MNA-SF®).

8.4.2 Mini Nutrition Assessment® Short Form (MNA-SF®) Screening Tool:

- The (MNA-SF®) is a validated nutrition screening tool for elderly population >65 years to determine those who are malnourished or at risk of malnutrition.[13]
- Consists of 6 questions focused on risk of malnutrition including decreased food intake as a result of loss of appetite, unintentional weight loss, low body mass index, difficulty with mobility, psychological stress or acute disease, and neuropsychological problems. [13]

Considerations for using this tool:

- Extensively validated in both community dwelling and hospitalized elderly population >65 years
- Can be used for repeated measurements
- Requires measured height and weight (mid arm and calf circumference, if assessment needed)

The MNA-SF® (http://www.mna-elderly.com/forms/mini/mna_mini_english.pdf) and guidelines for implementation are available at: http://www.mna-elderly.com/[13]

These can also be accessed from:

- Nutrition Practice Resources page at Continuing Care Connections under malnutrition (password required).
- Nutrition Services' Insite webpage, search for "Continuing Care & Seniors". This page also includes guidelines for referral to a dietitian.

Support tools:

- 3-Day Food and Activity Journal
- Tracking Resident Meal Intake, see Appendix 8B
- CMTF: How Much Did I Eat?
- CMTF: My Meal Intake
- Tracking Resident Weights, see Appendix 8C
- Nutrition Screening Pathway for Supportive Living Clients, see Appendix 8F
- For more information on malnutrition, go to:
  Healthy Eating to Address Malnutrition[9]

8.5 Med Pass Program[14]

Residents with malnutrition may benefit from high protein, high calorie drinks or Oral Nutritional Supplements (ONS). However, residents may find it difficult to finish an entire serving of ONS at one time.

Med Pass is a program in which ONS is provided to residents with medications or in between meals, 3-5 times a day in smaller quantities.[14] By spreading out the ONS throughout the day, residents receive extra protein and calories without decreasing appetite or taking the place of food at mealtimes.

Oral Nutritional Supplements (if required) should generally be provided after meals or as part of a MedPass program rather than being provided before/during meals, as these can interfere with appetite.

Med Pass is suitable for any resident who is recovering from illness, surgery, has poor appetite, is on a fluid restriction, or at risk of developing malnutrition.

For more information see: Med Pass Toolkit (Sips to Stop Malnutrition)

8.6 Dining Experience/Time to Eat Toolkit[15]

Time to Eat is a program to reduce barriers to eating by taking the time to help every resident enjoy their meal.

The Time to Eat Toolkit is for healthcare providers and site staff who want to lead change at mealtimes for the residents at their care setting.[15]

Time to Eat and the dining experience[15,16]

All residents should be provided with a pleasurable and a supportive dining environment for all meals, beverages, and snacks so they can consume and enjoy the foods and fluids they are offered. This helps support their nutrition needs and quality of life. The mealtime experience is influenced by a number of factors including physical and social environments.

A pleasurable mealtime experience can include:

- A supportive dining environment that is comfortable and brings enjoyment to residents at mealtimes. This helps residents thrive in their environment by increasing social interaction, reducing agitation, and improving nutrition intake.

Checklist for a Supportive Dining Room[15]

- An organized and unhurried meal service where the residents know what to expect
- Sufficient food and beverage choices so that the resident can choose their preferences.
- Medications provided before or after mealtimes, rather than interrupting the meals. This practice allows for a more home-like meal environment while reducing the risk that the medications and associated fluids fill-up the resident prior to eating their meal.

Checklist for Organized Meal Service[15]

8.7 Liberalization of Restricted or Special Diets

Restricted or special diets are planned to improve the health and nutrition status of residents. However, restrictive diets can limit the foods and fluid choices available, making foods provided not enjoyable and resulting in decreased intake.[17]

For example, the diabetic diet is used to help manage blood glucose levels and prevent complications such as kidney disease.[18] If a resident on a diabetic diet started to unintentionally lose weight due to decreased appetite, liberalizing the diet may be a way to expand the food choices available. This would make meals more enjoyable and improve intake, while supporting the resident's quality of life and independence.[18]

Liberalization of diets by changing or removing the therapeutic diet order can be a way to support overall quality of life through the enjoyment of shared meals in a social setting.[17] The healthcare team should balance the short and long-term medical implications of liberalizing restricted diets with the risk of malnutrition while keeping the resident's preferences at the center of all decisions.[18] Allowing residents choice and variety to enjoy their meals can further enhance their quality of life.

A resident may request not to follow a therapeutic diet order. Although staff may encourage residents to follow a therapeutic diet, it is difficult to restrict and follow diet restrictions when eating meals with others in a dining room style of service. Residents can see what others are eating and may request to have the same foods.

To allow for both quality and safety, the facility may:

- Base therapeutic menus on the needs of the residents such as providing texture-modified foods, modified fluid consistencies, specific snacks, or Oral Nutritional Supplements (ONS).[17]
- Provide therapeutic and texture modified menus while following the regular menu as closely as possible to provide similar choice, variety, and palatability.[18]
- Allow for liberalization of diets where appropriate. Some residents may prefer to follow a more tightly controlled therapeutic diet, and this option should also be available.[17]

Cultural, Religious, and Personal Considerations

A menu based on nutrient-dense foods, that are appropriate to culture, religion, and traditional foods may be adapted to promote and optimize nutrient intake.

Part of the enjoyment of eating is choosing healthy foods that reflect one's culture, religious beliefs, and preferences. Resident preferences and feedback may be incorporated to ensure foods appropriate to cultural and religious practices are included in the menu selection.

For more information, refer to Cultural, Religious, and Personal Considerations, Section 3 of this toolkit.

Providing a High Protein, High Calorie Diet

A high protein, high calorie diet is used to improve nutrition status and help reduce the risk of malnutrition due to poor intake, decreased appetite, or weight loss. Protein provides building blocks for muscle and keeps the immune system strong. Eating extra protein and calories can help residents maintain or gain weight and improve strength.

For more information, refer to Section 4.4 High Protein, High Calorie Diet of this toolkit.

References

1. Canadian Malnutrition Task Force. Malnutrition overview. 2017; [Cited: Mar 25 2021]. Available from: http://nutritioncareincanada.ca/resources/malnutrition-overview .

2. Artaza-Artabe I, Sáez-López P, Sánchez-Hernández N, Fernández-Gutierrez N, Malafarina V. The relationship between nutrition and frailty: Effects of protein intake, nutritional supplementation, vitamin D and exercise on muscle metabolism in the elderly. A systematic review. Maturitas. 2016 Nov. 93:89-99.

3. Rockwood K, Song X, Mitnitski A. Changes in relative fitness and frailty across the adult lifespan: Evidence from the canadian national population health survey. CMAJ. 2011 May 17. 183:(8):487.

4. Bauer J, Biolo G, Cederholm T, Cesari M, Cruz-Jentoft AJ, Morley JE, 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 Aug. 14:(8):542-59.

5. Malafarina V, Uriz-Otano F, Iniesta R, Gil-Guerrero L. Sarcopenia in the elderly: Diagnosis, physiopathology and treatment. Maturitas. 2012 Feb. 71:(2):109-14.

6. Ruiz M, Cefalu C, Reske T. Frailty syndrome in geriatric medicine. Am J Med Sci. 2012 Nov. 344:(5):395-8.

7. Paddon-Jones D, Rasmussen BB. Dietary protein recommendations and the prevention of sarcopenia. Curr Opin Clin Nutr Metab Care. 2009 Jan. 12:(1):86-90.

8. Laur CV, McNicholl T, Valaitis R, Keller HH. Malnutrition or frailty? overlap and evidence gaps in the diagnosis and treatment of frailty and malnutrition. Appl Physiol Nutr Metab. 2017 May. 42:(5):449-58.

9. Alberta Health Services, Nutrition Services. Nutrition Practice Guideline: Screening for Malnutrition in Adults. Nov 2017. [Cited: Mar 2021]. (Restricted access to this document)

10. Clegg A. The frailty syndrome. Clin Med. 2011 11:(1):72-5.

11. Canadian Frailty Network. How screening for frailty helps. 2013; [Cited: July 2021]. Available from: http://www.cfn-nce.ca/frailty-in-canada/how-screening-for-frailty-helps/

12. Keller HH, Goy R, Kane S-. Validity and reliability of SCREEN II (seniors in the community: Risk evaluation for eating and nutrition, version II). Eur J Clin Nutr. 2005 Oct. 59:(10):1149-57.

13. Nestle Nutrition Institute. MNA mini nutrition assessment. [Cited: Mar 14 2018]. Available from: http://www.mna-elderly.com/ .

14. AHS Medpass Toolkit. 2019. [Cited: Mar 25 2021]. Available from: https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-med-pass-toolkit.pdf

15. AHS Time to Eat Toolkit, 2018. [Cited: Mar 25 2021]. Available from: https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-time-to-eat-toolkit.pdf

16. Dietitians of Canada. Best Practices for Nutrition, Food Service and Dining in Long Term Care Homes: A Working Paper of the Ontario LTC Action Group. 2019. Available from: https://www.dietitians.ca/DietitiansOfCanada/media/Documents/Resources/2019-Best-Practices-for-Nutrition,-Food-Service-and-Dining-in-Long-Term-Care-LTC-Homes.pdf

17. The American Dietetic Association. Position of the American Dietetic Association: Individualized Nutrition Approaches for Older Adults in Health Care Communities. *J Am Diet Assoc* 2010;110 (10):1549-1553.

18. Academy of Nutrition and Dietetics, Liberalized Diets. ADA Nutrition Care Manual. [Online] 2012 [Cited: March 25 2021] Available from: http://www.nutritioncaremanual.org/content.cfm?ncm_content_id=89373 (Access only by subscription)