Nutrition Guideline
Frailty, Nutrition Risk and Malnutrition in Seniors (65 years and older)

For Professional Reference Only

Applicable to: Nurses, Physicians, and Other Health Professionals

Recommendations

- Nutrition risk and malnutrition are prevalent in geriatric populations and contribute to the onset of frailty; therefore, nutrition screening is recommended for:
  - All seniors for early identification of nutrition risk before frailty and malnutrition can occur.
  - All seniors who are identified as frail using Alberta Health Services recommended frailty tools (Edmonton Frail Scale, The Clinical Frailty Scale, or the Electronic Frailty Index), especially if nutrition concerns are identified while completing the frailty tool.
- The following nutrition screening tools are recommended for the following care settings:
  - *Community, Ambulatory Care and Primary Care* (general population):
    - *Community:* Risk Evaluation for Eating and Nutrition© (SCREEN© II) or Nutri-eSCREEN (www.nutritionscreen.ca/escreen) can be used to identify a broad range of nutrition problems and can be used with or without a health professional.
    - *Ambulatory Care/ Primary Care* (patients with a medical diagnosis or disease where there is a higher risk of malnutrition) – Canadian Nutrition Screening Tool (CNST).
  - *Acute Inpatient* – Canadian Nutrition Screening Tool (CNST)
  - *Home Care, Supportive Living, and Long Term Care* – Resident Assessment Instrument (RAI) nutrition and dysphagia questions. Mini Nutrition Assessment® - Short Form (MNA-SF®) may also be used, as appropriate.
- Nutrition interventions should focus on improving nutrition by understanding the root causes of poor nutrient intake and devising effective strategies to address these causes, such as monitoring food intake, body weight, and promoting adequate nutrition. Treatment goals should be individualized and support the seniors' best interest and quality of life.
- Nutrition screening for frailty and malnutrition should be a routine practice in the aging population to identify those at risk. Seniors identified as being 'at risk' through screening must be provided with options for assessment, education, treatment, and service referrals, including referral to a Registered Dietitian.
- A referral is recommended to a specialist in geriatrics, other appropriate health care professionals, and community support resources and services, such as meal and grocery delivery options if needed.

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Introduction

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. These are signs of frailty and malnutrition, which can lead to difficulty with everyday tasks, higher risk for falls and fractures, or need for institutionalized care or hospitalizations.

There are many factors which increase the risk of poor nutrition in seniors such as physical health, motor capabilities, weight changes, hydration status, taste changes, oral health/hygiene, social isolation, food insecurity, chronic disease, dysphagia, polypharmacy, mental health and dementia, as well as cultural and religious beliefs.

Nutrition screening should be a routine practice used to identify vulnerable seniors who are at nutrition risk and need further assessment to identify problems to prevent or reverse frailty or malnutrition. Research indicates that interventions aimed to improve nutrition can be helpful and reduce the risk of developing frailty and malnutrition.[1,2]

The goal of this Nutrition Guideline (NG) is to provide an overview of tools that can be used to screen and identify seniors who are at nutrition risk of developing frailty and malnutrition. Reference to relevant resources such as nutrition guidelines, nutrition screening tools, and frailty screening tools have been provided to help with the screening process.

Refer to AHS Provincial Clinical Knowledge Topic for more information: *Frailty - Seniors – Acute Care*

Refer to Guideline: *Seniors Health Overview*

Key Questions

What is the difference between frailty and malnutrition?

In Canadian hospitals there is an overlap between frailty and malnutrition with 70% of malnourished patients being screened as frail.[3,4]

- Frailty has multiple causes and contributors that manifests itself by diminished strength, endurance, and physiologic function. Frailty is associated with risk of functional decline, loss of independence, deterioration in health status, increased risk of hospitalization, and ultimately increased risk of death.[5]
- The central feature of frailty is increased vulnerability, with reduced physical reserve and loss of function across multiple body systems. Frailty is most obvious under stress and is evident by exaggerated and rapid changes in health status.
- Malnutrition, in clinical practice, is undernutrition with inadequate intake of energy, protein and nutrients which affects body tissues, functional ability and overall health.[6,7]
- Malnutrition manifests itself with changes in body composition and diminished function. Being malnourished increases mortality, impaired wound healing and increased rates of infection.[6]
- Malnutrition is prevalent in geriatric populations and is one of the main risk factors for the onset of frailty.[4] The prevalence of frailty is also disproportionately high among seniors who are malnourished.[4]

Sarcopenia of aging is the age-related gradual decline in muscle mass and function, starting in the 4th decade of life, and is a key determinant of disability and mortality.[8] Sarcopenia is associated with an increased risk for falls and an overall prevalence for frailty.[9,10] Increased loss of muscle mass and function is influenced by nutrition, physical activity, comorbidities and psychosocial factors.[8,11]

Can a senior with a healthy body weight or obesity be at risk of frailty or malnutrition?

Even though an individual's weight may be within a healthy body weight range or indicate obesity, there may be sarcopenia present which can contribute to frailty and malnutrition.[12]

Sarcopenic obesity is characterized by the presence of sarcopenia and obesity simultaneously;[13] therefore, it is important to screen for other risk factors and not just weight.

What is the rationale and benefit of screening for malnutrition and frailty in seniors?

Frailty is a growing concern with our aging population in Canada. Around 10% of seniors over the age of 65 years have frailty and this increases to 25-50% for those over 85 years of age.[14] Aging and frailty are not synonymous. Frailty becomes increasingly common as age advances.

Nutrition screening can help with early identification of vulnerable seniors who are at nutrition risk and can be a way to further improve care and outcomes.[3]

- Nutrition is one of the key areas where treatment for frailty is promising, especially if the individual is also malnourished.[3]
- Seniors identified at nutrition risk will benefit from a preventative and proactive personalized care plan which may lead to better treatment outcomes.
- Early nutrition interventions that address the deficiencies in seniors at risk can reverse frailty and malnutrition.
- Due to the high proportion of overlap between frailty and malnutrition, screening to identify malnutrition in all seniors considered frail and identifying frailty in malnourished seniors is recommended.[3]

Refer to AHS Provincial Clinical Knowledge Topic for more information: *Frailty - Seniors – Acute Care*

Who should receive nutrition screening?

Nutrition risk and malnutrition are prevalent in geriatric populations and contribute to the onset of frailty. Nutrition screening is recommended for:

- All seniors for early identification of nutrition risk before frailty and malnutrition can occur.
- All seniors who are identified as frail using Alberta Health Services recommended frailty tools (Edmonton Frail Scale, The Clinical Frailty Scale, or the Electronic Frailty Index) especially if nutrition concerns are identified while completing the frailty tool.

What are the nutrition components of frailty tools used in Alberta Health Services?

The nutrition components of each frailty tool used in Alberta Health Services are identified in Table 1.

Table 1: Nutrition Components of Frailty Screening Tools used in Alberta Health Services[5,15,16]

Tool	Description	Nutrition components included
Edmonton Frail Scale (EFS)	• A syndrome-based frailty tool. • Can be used to define the severity and components of frailty in seniors. • Components include cognitive impairment, multi-morbidity, polypharmacy, functional independence, unintentional weight loss, dehydration, urinary incontinence, depression, falls, immobility, chronic pain, constipation, and social isolation.	• Unintentional weight loss • Functional independence (e.g. grocery shopping and meal preparation)
The Clinical Frailty Scale (CFS)	• Clinical Impression-based Frailty Scale • Based on 9 categories with a description for each category • Categories are: very fit, well, managing well, vulnerable, mildly frail, moderately frail, severely frail, very severely frail and terminally ill • Includes scoring guide on frailty in people with dementia	• No specific nutrition content but at a score of 5 (mildly frail), nutrition-related instrumental activities of daily living (IADLs) become an issue (e.g. grocery shopping and meal preparation)
The Electronic Frailty Index (eFI)	• Electronic database based on a simple summation of pre-determined conditions. • Systematically gathers pre-existing health information from the start, and immediately alerts care providers	• Weight loss • Anorexia
If any of the frailty tools identifies nutrition concerns such as unintentional weight loss and loss of appetite, the SCREEN© tool (http://www.nutritionscreen.ca/escreen/) or the MNA® tool (http://www.mna-elderly.com/forms/mini/mna_mini_english.pdf) can be used to further investigate and identify what the specific problem is, what intervention will be helpful and how to implement the intervention.		

Refer to AHS Provincial Clinical Knowledge Topic for more information: *Frailty - Seniors – Acute Care*

Which nutrition screening tools are recommended to identify seniors at risk of malnutrition?

The screening tools recommended for assessing seniors at risk of malnutrition in various settings are identified in Table 2.

Table 2: Nutrition Screening Tools: Setting, Description and Rationale For Use[17-19]

Setting	Tool, description and rationale for use	Additional information
Community, Ambulatory Care and Primary Care (general population)	Seniors in the Community: Risk Evaluation for Eating and Nutrition (SCREEN© II) is a nutrition risk screening index questionnaire for seniors (age 55 and over) to be used in a variety of settings within the community including home care. Considerations for using this tool: • Can be used with or without a health professional. • SCREEN© II is available electronically as Nutri-eSCREEN (http://www.nutritionscreen.ca/escreen/) • Considers a range of nutrition problems which can lead to appropriate education or referral to services • There is a shortened version with 8 questions and a longer version with 14 questions • Hard copies of SCREEN© II and the Getting Started with SCREENing© Resource Manual are copyright protected but freely available with no licensing fee at https://www.flintbox.com/public/project/2750 • For those wanting to incorporate SCREEN© II into an electronic medium, contact Heather Keller at hkeller@uwaterloo.ca	The SCREEN© questions are: 1. Has your weight changed in the past 6 months?** (participant identified gain, loss or maintenance and the amount of weight change (about 5 pounds, 6 to 10 pounds, more than 10 pounds) 2. Do you skip meals?* 3. Do you limit or avoid certain foods? 4. How would you describe your appetite?* 5. How many pieces or servings of fruit and vegetables do you eat in a day?* 6. How often do you eat meat, eggs, fish poultry or meat alternatives? 7. How often do you have milk products? 8. How much fluid do you drink in a day?* 9. Do you cough, choke or have pain when swallowing food or fluids?* 10. Is biting or chewing food difficult for you? 11. Do you use commercial meal replacements or supplements? 12. Do you eat one or more meals a day with someone?* 13. Who usually prepares your meals? (a) Which statement best describes meal preparation for you?* 14. Do you have any problems getting your groceries? * Questions included in the shortened SCREEN© tool
Ambulatory Care and Primary Care** *AND* Acute Inpatient	The Canadian Nutrition Screening Tool (CNST) is a valid screening tool for adults recommended for use in Alberta Health Services (AHS) for acute inpatient or preadmission. You can learn more about this tool at the following link: http://nutritioncareincanada.ca/tools/screening ** patients with a medical diagnosis or disease where there is a higher risk of malnutrition (e.g. inflammatory bowel disease, multiple sclerosis, heart failure)	• The two-item tool collects information on recent weight loss and recent poor intake. • Tool is administered by a health professional.

Setting	Tool, description and rationale for use	Additional information
Home Care, Supportive Living and Long Term Care	Resident Assessment Instrument (RAI) is an international tool used by nurses, physicians and health professionals to inform and guide comprehensive planning of care and services. It focuses on the person's functioning and quality of life by assessing needs, strengths and preferences. *Home Care and Supportive Living* use *RAI-HC* Nutrition/Hydration Loss section • This section of the RAI-HC includes questions about weight history, consumption and swallowing that can be used to identify nutrition risk and trigger a referral to the dietitian. *Long Term Care* use *RAI MDS 2.0* Oral/Nutritional Status section • This section of the RAI MDS 2.0 includes questions about height and weight, weight history, consumption and swallowing that can be used to identify nutrition risk and trigger a referral to the dietitian. In addition, there are questions on parenteral or enteral nutrition as well as nutritional approaches to eating.	
	The Mini Nutrition Assessment® Short Form (MNA-SF®) may also be used as appropriate. MNA-SF is a validated nutrition screening tool for seniors age 65 and over who are malnourished or at risk of malnutrition. • Consists of 6 questions focused on risk of under nutrition 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. 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/	

For seniors identified at risk of frailty and malnutrition, what are the next steps for nutrition intervention?

While screening tools can help to identify seniors at risk of frailty or malnutrition, they do not diagnose medical or nutritional problems. Appropriate nutrition interventions and referrals to other health care providers are recommended.

A comprehensive review of medical, functional, psychological, and social needs should be completed by a multidisciplinary team. There is evidence that interventions aimed to improve nutrition, polypharmacy, social isolation, and physical ability can be helpful.

- Nutrition assessment, intervention, and monitoring can play a role in preventing hospital readmissions related to frailty and malnutrition.
- Nutrition interventions should focus on improving nutrition by understanding the root causes of the problem and devising effective strategies to address these causes. The treatment goals should be individualized and support the seniors' best interest and quality of life.
- Nutrition intervention should include monitoring of food intake, body weight and promoting adequate nutrition.
- Refer to the *Seniors Health Overview Nutrition Guideline* which provides recommendations and guidelines on the following: healthy weight, nutritional requirements (energy and protein), hydration management, vitamins and minerals of concern, food insecurity, social isolation, chronic disease management, gastrointestinal problems, dysphagia, polypharmacy, medications and nutrient interactions, cognitive impairment and dementia.

Refer to Guideline: Seniors Health Overview

Refer to AHS Provincial Clinical Knowledge Topic for more information: *Frailty - Seniors – Acute Care*

Where can you refer seniors at risk of malnutrition or frailty?

- A referral to a Registered Dietitian is recommended for seniors at risk of malnutrition.
- A referral to a specialist in geriatrics is recommended if there are more complex issues such as presence of geriatric syndromes, high risk procedures, diagnostic uncertainty, or challenging symptom control.[20]
- A referral to other appropriate health care professionals such as a pharmacist, Speech Language Pathologist, occupational therapist or social worker for issues such as polypharmacy, dysphagia, social isolation, oral health, etc.
- A referral to community support resources and services such as Home Care, Meals on Wheels, and other meal and grocery delivery options, if needed.

Refer to Guideline: *Seniors Health Overview*

Refer to AHS Provincial Clinical Knowledge Topic for more information: *Frailty - Seniors – Acute Care*

Are there any handouts on nutrition for seniors that I can use with my patients?

Refer to approved provincial Alberta Health Services nutrition education handouts to support patient education. For more information contact NutritionResources@albertahealthservices.ca

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