McMaster University

McMaster HEALTH FORUM

ADDRESSING NUTRITIONAL RISK AMONG OLDER ADULTS IN ONTARIO

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McMaster Health Forum

For concerned citizens and influential thinkers and doers, the McMaster Health Forum strives to be a leading hub for improving health outcomes through collective problem solving. Operating at regional/provincial levels and at national levels, the Forum harnesses information, convenes stakeholders and prepares action-oriented leaders to meet pressing health issues creatively. The Forum acts as an agent of change by empowering stakeholders to set agendas, take well-considered actions and communicate the rationale for actions effectively.

About citizen panels

A citizen panel is an innovative way to seek public input on high-priority issues. Each panel brings together 10-14 citizens from all walks of life. Panel members share their ideas and experiences on an issue, and learn from research evidence and from the view of others. The discussions of a citizen panel can reveal new understandings about an issue and spark insights about how it should be addressed.

About this brief

This brief was produced by the McMaster Health Forum to serve as the basis for discussions by the citizen panel on how to address nutritional risk among older adults in Ontario. This brief includes information on this topic, including what is known about:

- the underlying problem;
- three possible options to address the problem; and
- potential barriers and facilitators to implement these options.

This brief does not contain recommendations, which would have required the authors to make judgments based on their personal values and preferences.

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Key messages

What's the problem?

Addressing nutritional risk among older adults in Ontario is challenging because:

- nutrition can be affected by many factors;
- older adults may face challenges in searching for, and using, information to make healthier nutritional choices;
- identifying older adults at nutritional risk is challenging;
- existing home and community care services may not fully meet the needs of those at risk;
- healthcare services lack coordination and monitoring in the area of nutrition, and also lack a 'nutrition culture';
- financial barriers impede older adults' capacity to benefit from nutrition services; and health-system leaders pay attention to aging issues, but have not yet prioritized nutrition.

What do we know about three options for addressing the problem?

We have selected three options (among many) for which we are seeking public input:

- **Option 1:** Strengthening older adults' capacity to make healthier nutritional choices
  - Several interventions could be effective in providing older adults with information about nutrition (e.g., education programs and health literacy interventions), supporting behavioural changes (e.g., online lifestyle programs and financial incentives), and developing skills and competencies (e.g., behavioural counselling and dietary advice).
- **Option 2:** Improving the identification and support of older adults at high nutritional risk
  - There is little synthesized evidence about the effectiveness of nutritional screening, but recent efforts have been made to develop valid and reliable screening tools.
  - Various healthcare providers could play a role in the delivery of nutrition care, such as dietitians, family physicians, nurses, community health workers and informal carers.
- **Option 3:** Enhancing the coordination, integration and monitoring of services for older adults at nutritional risk
  - Some interventions could be effective in delivering integrated nutrition-related services to older adults (e.g., training/education programs for nursing assistants).

What implementation considerations need to be kept in mind?

- Barriers to implementing these options might include challenges with referring at-risk older adults to nutrition assistance services, and health-system leaders being unaware of the importance of addressing nutritional risk among older adults.
- Facilitators to implementing these options might include interest among health-system leaders to address aging issues, as well as the emergence of innovative approaches to support coordinated care for people with complex needs.

34% of Canadians aged 65 or older who live in private households are considered to be at high nutritional risk.

The context: Why is nutritional risk among older adults a priority?

>> Being at nutritional risk poses serious health concerns, especially for vulnerable older adults living in the community and admitted to healthcare facilities.

Consider the stories on the following page that illustrate the lives of four older adults. Each story involves a scenario that is common today: older adults who are frail; older adults who are transitioning between their homes and healthcare facilities; older adults who are living in long-term care facilities; and older adults who are first-generation immigrants.

Linh, 69	•Linh has high blood pressure and Type 2 diabetes. In recent months she began having trouble with her balance, and has fallen frequently. She increasingly needs assistance with everyday activities (including grocery shopping and cooking) and in taking her many medications at the right time. She lives alone in a small apartment and has no immediate family to provide support.
James, 81	•James lives at home with his wife. He has a history of arthritis, heart disease and mild asthma. He has been hospitalized on several occasions over the past year. His last physical examination, which was done before he left hospital, revealed that he had lost 15 pounds in the past few months. He indicated that he simply has no appetite.
Mary, 77	•Mary was admitted to a long-term care facility two years ago, after suffering a stroke. For the past few months, she has had severe difficulty expressing to staff what she needs to staff, and she has been suffering from a condition called 'dysphagia,' which makes it very difficult for her to chew and swallow food.
Syed, 75	•Syed is a first-generation immigrant and English is his second language. Syed recently lost his wife after a long battle with cancer. His only child lives in another province and he has no immediate family to provide support. Since his wife passed away, he has had some trouble with depression. He has also been struggling with preparing his meals. While meals had always been an important part of his day, his wife was the one who prepared the food and who chatted while they ate.

These stories are examples of older adults who are, or may become, at nutritional risk, for different reasons. In fact, thousands of different stories could have been presented here for illustrative purposes given how common nutrition-related problems are among older adults. A recent study by Statistics Canada estimates that 34% of Canadians aged 65 or older who live in private households are considered to be at high nutritional risk.(4) Nutritional risk can be defined as the "risk of poor nutritional status."(4) A person's nutritional status can range from good nutritional health (i.e., an adequate and well-balanced diet) to malnutrition (i.e., the deficiency, excess, or imbalance of energy, protein and other nutrients).(9)

The study released by Statistics Canada brought attention to an important issue – nutritional risk – that poses serious health concerns, especially for vulnerable older adults living in the community, but also among those admitted to healthcare facilities. Being at nutritional risk can:

- **affect overall health** – poor nutrition affects body tissues, decreases strength of muscles and bones, affects the heart, lungs and gastrointestinal system, and increases susceptibility to infections;
- **lead to functional decline** – poor nutrition causes a deterioration of physical and cognitive capacities, and a decline in older adults' capacities to perform activities of daily living (e.g., dressing, bathing, cooking, grocery shopping);
- **jeopardize recovery** – malnourished older adults may face a longer and more complex recovery process (e.g., malnutrition delays wound healing and decreases the ability to metabolize drugs), and they are at higher risk of being readmitted to hospital within 30 days of having been sent home from hospital;(9) and
- **increase morbidity and mortality** – nutrition-related deficiencies may cause or worsen chronic health conditions (e.g., diabetes, musculoskeletal disorders, hypertension and heart disease) and may lead to death.(11)

Given the rapidly aging population, a growing number of older adults can be expected to face nutrition-related problems and malnutrition in Ontario. Since such problems can be prevented, there is a need to explore how the different parts of the health system can work together to tackle these problems, including those providing home and

Glossary (1)

Risk

The probability that an event will occur (e.g., that an older adult will be affected by malnutrition or nutrition-related problems).(3)

Risk factor

Social, financial, clinical, behavioural or environmental factors that are associated with, or cause an increased susceptibility to, nutrition-related problems and malnutrition.(6)

Nutritional risk

The risk of poor nutritional status, which can include malnutrition.(4)

Malnutrition

The deficiency and excess (or imbalance) of energy, protein and other nutrients.(9)

community care, primary care, acute care and long-term care (Box 1 provides a brief description of the health system in Ontario).

This brief was prepared to support the discussion by a citizen panel about addressing nutritional risk among older adults in Ontario, with a focus on health-system interventions. The input from the citizen panel will help to guide the efforts of policymakers, managers and professional leaders who make decisions about our health system.

Box 1 >> Health system in Ontario

- Necessary medical care provided in hospitals and by physicians is fully covered by Ontario's publicly funded health system.
- Care and support provided by other healthcare providers such as nurses, physiotherapists, occupational therapists, social workers, and dietitians are typically not covered by the health system unless provided in a hospital or long-term care setting, or in the community through Community Care Access Centres, Community Health Centres, Family Health Teams and other designated clinics.
- Other healthcare and community services such as prescription drug coverage, community support services and long-term care homes receive partial public coverage in Ontario, which requires citizens to pay for the uncovered portion on their own or through private insurance.
- 14 geographically defined Local Health Integration Networks (LHINs) have responsibility for the planning and funding of healthcare in their respective regions, and for ensuring that the different parts of the health system in their region work together.
- 184 Family Health Teams, 75 Community Health Centres, and 25 Nurse Practitioner-Led Clinics provide comprehensive primary care encompassing health promotion and disease prevention, as well as treatment and disease management.
- 14 Community Care Access Centres (CCACs) – one for each LHIN – have responsibility for connecting people with the care they need at home and in their communities.
- 644 not-for-profit community support services (CSS) agencies provide services to support more than 800,000 community-dwelling Ontarians (most of whom are older adults). Assistance provided includes personal support (e.g., for household tasks), services provided as part of supportive housing, Meals on Wheels, transportation, and respite and adult day programs.
- 54 Health Links (of an anticipated total of 90) mobilize the delivery of integrated care for those with complex needs.
- 145 public hospitals operating in 224 sites provide acute care.
- More than 630 long-term care facilities provide care to people who require on-site delivery of supervised and ongoing care.

43% of Ontarians over the age of 65 are living with two or more chronic health conditions. In addition, managing their diet effectively may seem like an overwhelming task.

The problem: Why is it challenging to address nutritional risk?

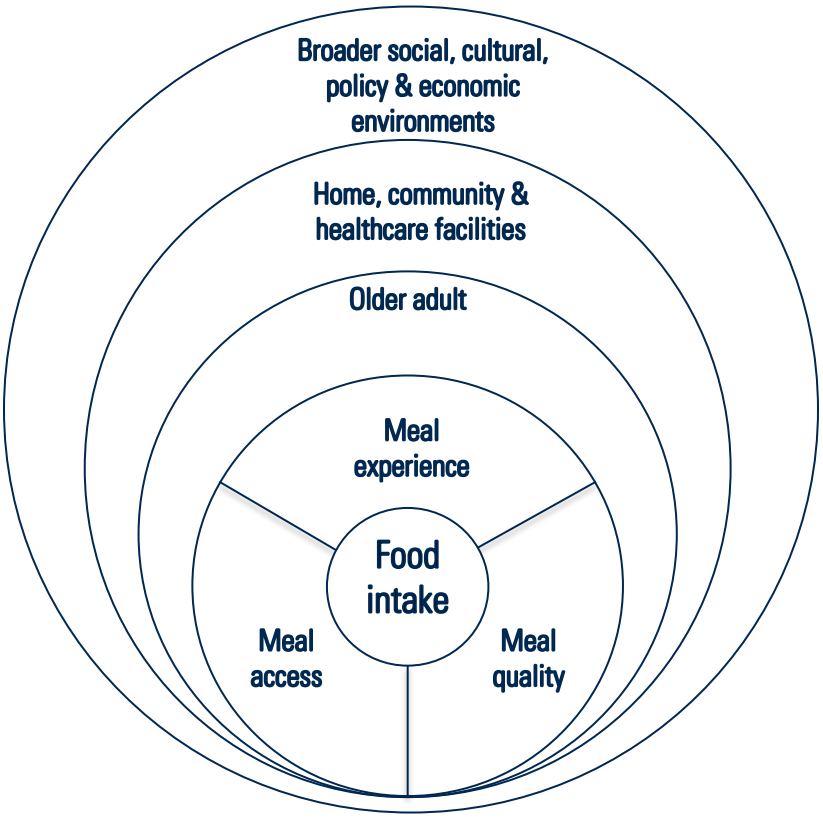
>> Addressing nutritional risk among older adults is challenging because many factors affecting patients and families, healthcare providers and the health system must be considered.

Several factors contribute to the challenges of addressing nutritional risk among older adults in Ontario. Some of these factors relate to patients and families, others to healthcare providers, and still others to the health system more broadly. We describe some of the key challenges in the following section of the brief.

Nutrition can be affected by many factors

Nutrition is a complex phenomenon that can be affected by a wide range of factors, as illustrated by Figure 1 below.

Figure 1 >> Factors affecting nutrition among older adults



Source: conceptual model adapted from Making the Most of Mealtimes - M3 model (5)

What older adults eat (or what is referred to as their 'food intake') can be influenced by four broad factors:

1. **the meal** – this includes the quality of a meal (e.g., its sensory appeal, nutrient density, variety), meal access (e.g., food availability and capacity for the older adult to eat, chew and swallow), and the overall meal experience (e.g., social interaction, ambience, meal pace, appetite and desire to eat);(5)
2. **the older adult** – this includes the individual characteristics of the older adult such as gender, ethnicity, physical and mental health status (e.g., age-related physiological changes such as diminished appetite and impaired senses, medication, oral health problems that may interfere with the chewing, ingestion, and absorption and metabolism of food), knowledge and skills to make healthy choices, capacity to communicate, access to family and other support, and socio-economic status; (5)

3. **home, community and/or healthcare facilities** – this includes a wide range of factors that characterize where the older adult lives and/or receives care (e.g., menu planning, food source, food production/delivery, food policy, model of care, dining seating, dining physical environment, number of staff, staff training, and professional support);(5) and
4. **broader social, cultural, policy and economic environments** – this includes a wide range of factors such as culture, access to healthcare services, housing policies, grocery store locations, the availability and affordability of public transportation, and geographic isolation.(5)

Nutritional status of older adults may be compromised by any of these factors.

Statistics Canada has found that nutrition-related problems may disproportionately affect certain groups, such as:

- **older women** - 38% of older women are at nutritional risk in comparison to 29% of older men;(4)
- **older adults suffering from depression** – 62% of those with depression compared with 33% of people without depression are at nutritional risk;(4) and
- **older adults who are socially isolated** – those who live alone, have limited social support and are not socially active are more likely to be at nutritional risk.(4)

Glossary (2)

Health literacy

The ability to access, understand, evaluate and communicate information in order to promote, maintain and improve health.(2)

Food literacy

The set of "skills and attributes that help people sustain the daily preparation of healthy, tasty, affordable meals for themselves and their families."(7)

Older adults may face challenges in searching for, and using, information to make healthier nutritional choices

Several online resources are currently available to help community-dwelling older adults (and their informal and family caregivers) find nutritional information and answer their questions about healthy eating. For example, EatRight Ontario (**www.eatrightontario.ca**) is a website providing easy-to-use nutrition information and a series of resources dedicated to older adults. EatRight Ontario also offers the option to ask a registered dietitian questions by sending emails or calling using a toll-free line. The scope of the toll-free line remains limited, however, in that registered dietitians are allowed to provide general nutrition and disease-prevention

information, but they cannot provide symptom assessments, diagnoses, medical opinions, or prescriptions. Another example is the website developed by Dietitians of Canada (**www.dietitians.ca**), which provides a wide range of online resources about nutrition, as well as a searchable database to locate dietitians providing services in Ontario. Other opportunities to obtain nutrition counselling, information and tools from registered dietitians include free sessions at community libraries and grocery stores, counselling offered in local diabetes education programs for those diagnosed with diabetes (and their family members), and consultations offered through Community Care Access Centres, Community Health Centres, Family Health Teams and other designated clinics.

Despite the availability of such resources, older adults may still face challenges in searching for, and using, information to make healthier nutritional choices. First, 60% of Canadians and 88% of older adults have difficulty reading, understanding and acting on health information (known as 'health literacy').(2) Recent reports have also raised concerns about the level of 'food literacy' in Canada. Food literacy refers to the "set of skills and attributes that help people sustain the daily preparation of healthy, tasty, affordable meals for themselves and their families."(7) This includes a wide range of skills and attributes such as knowledge about food, nutrition and food safety, the capacity to interpret food labels, the ability to follow recipes and use appliances, the capacity to improvise with ingredients available, as well as the capacity to plan, budget, buy and store food.

Second, some older adults may lack the skills to use the internet to find the best resources to make healthier nutritional choices. This appears particularly important since resources providing health and nutrition information are increasingly available in online-only formats. In addition, many resources available online are not 'older adult-friendly', and fail to account for factors such as age-related physical barriers (e.g. declining eyesight) in their design, layout and general presentation of content.

Third, many nutrition services and resources are not culturally-sensitive and fail to account for the cultural, linguistic and religious diversity of Ontario's population. Indeed, Ontario is a very multicultural society with a large and vibrant immigrant population that is mostly concentrated in large urban areas. A notable exception is the work of EatRight Ontario, which is investing efforts to provide some services and resources in several languages in response to cultural diversity.

Lastly, many resources do not provide nutritional information in the context of someone who must deal with, and make decisions about, multiple chronic health conditions (e.g., what

should you eat when you have diabetes, high blood pressure, and inflammatory bowel disease). This is particularly relevant since 43% of Ontarians over the age of 65 have two or more chronic health conditions.(12) For these older adults, effectively managing, or having the awareness, to control their diet may seem like an overwhelming task.

Identifying older adults who are at nutritional risk is challenging

Identifying older adults who are at nutritional risk is critical to preventing or reversing the consequences of poor nutrition.(4) However, identifying older adults at nutritional risk is challenging for three reasons. First, community-dwelling older adults at nutritional risk are often socially isolated.(4) Therefore, they may not have loved ones, caregivers, or neighbours who can seek out health and social services on their behalf if they experience nutrition-related problems.

Healthcare providers may not be sufficiently trained to recognize the warning signs of malnutrition and to identify those at nutritional risk. A Canadian study revealed that healthcare providers under-recognized malnutrition in hospitalized patients.(13) This problem may be exacerbated by the fact that nutrition screening for older adults is not mandatory for public health programs in Canada.(14) Other barriers to nutrition screening identified by healthcare providers include a lack of time, resources and appropriate options after screening (e.g., the capacity to make appointments with a dietitian or physician), as well as the absence of a standardized screening tool.(14) Some efforts have been made in recent years to develop valid and reliable screening tools (e.g., Senior in the Community Risk Evaluation for Eating and Nutrition II – SCREEN II tool). However, there is still no gold standard for nutritional risk screening.(4)

Lastly, even if older adults are identified as 'at-risk' individuals, many often refuse referrals to nutrition-related services. A study examining community-dwelling older adults in Canada revealed that only 40% of at-risk older adults visited a dietitian after being referred by a physician or nurse practitioner.(15) Some older adults may not follow up because they do not appreciate the risk associated with nutrition problems. Others may be worried that following up may lead to decisions that compromise their independence. Still others may be concerned by the stigma that some older adults associate with receiving nutrition assistance (i.e., failing to cope, lack of decision-making ability).

Existing home and community care services may not fully meet the needs of older adults at nutritional risk

Various home and community care services are available to older adults. For instance, regional Community Care Access Centres (CCACs) can connect older adults and their families with the care they need at home and in their community, such as visiting health professional services, personal care and support, and homemaking services. CCACs have dietitians available who can provide individual, family or group counselling in the home for clients who meet their eligibility criteria. In addition, local community support services agencies provide services to support community-dwelling older adults, such as personal support (e.g., for household tasks), Meals on Wheels, transportation, respite care, and adult day programs.

Despite the availability of these home and community care services, several problems have been reported.

- There is a lack of access to dietitians through home and community care services. It is estimated that less than 1% of CCAC clients access a dietitian through the CCAC system. This can be due to a number of factors, including the need for a referral (i.e., another provider must recognize the need for dietitian involvement) and very limited budgets (i.e., case managers have to choose what services to provide for each client with the limited funds available to them).
- There is a lack of nutrition education and alternative delivery mechanisms (e.g., supporting older adults to shop for groceries instead of providing them with meals) that may contribute to dependency among older clients.
- There is a lack of evaluation of the impact of home and community care services on nutrition knowledge and behaviour changes.(16)

Glossary (3)

Home and community care

Services helping people receiving care at home, rather than in hospitals or long-term care facilities, to help them live as independently as possible in the community.

Primary care

Care encompassing health promotion and disease prevention as well as treatment and disease management. Primary care is often considered the first level of contact with the health system. It is provided primarily by family doctors and other generalist healthcare professionals (e.g., in Family Health Teams, Community Health Centres, Nurses Practitioner-Led Clinics, or other designated clinics).

Acute care

Care provided in a hospital setting (sometimes called 'hospital care').

Long-term care

Care provided in facilities offering accommodation for people who require on-site delivery of supervised and ongoing care (e.g., in nursing homes and residential care facilities).

Healthcare services lack coordination and monitoring in the area of nutrition, and also lack a 'nutrition culture'

Current healthcare services often lack coordination and monitoring in the area of nutrition,(17) and do not completely meet the needs of older adults at nutritional risk. Yet such coordination and monitoring is particularly needed by those people living with multiple chronic health conditions, who often require care and support from many providers.

There is also a lack of access to adequately-trained healthcare providers, such as dietitians, who can screen for nutritional risk, but also ensure proper monitoring and follow-up after referral. The lack of access can be caused by many factors, one of which is that a referral is often needed from a physician or nurse practitioner to access dietitian services in primary care settings.

Problems have also been observed in other care settings. For example, a recent study examined physicians' perceptions regarding the detection and management of malnutrition in Canadian hospitals.(18) The study revealed that very few patients are weighed upon discharge. As low as 12% of respondents indicated that this was current practice, but 84% believe that optimal practice required weighing patients at discharge. The same study also revealed that the three main reasons for the insufficient nutrition support on hospital wards (as perceived by physicians) were: 1) ignorance; 2) no clear definition of responsibility, and 3) difficulty in identifying patients at nutritional risk.

These findings suggest a more deeply rooted challenge: the lack of a 'nutrition culture' in the healthcare sector. Indeed, nutrition care personnel in Canadian hospitals are calling for "a nutrition culture whereby nutrition is considered important to patient recovery and teams work together to achieve nutrition goals."(19)

Financial barriers impede older adults' capacity to benefit from nutrition services

A number of financial barriers also impede older adults' capacity to benefit from nutrition services. Some of these barriers operate at the individual level. For example, care and support provided by dietitians are typically not covered by the health system unless provided in a hospital or long-term care setting, or in the community through Community Care Access Centres, Community Health Centres, Family Health Teams and other designated clinics. Other nutrition programs and services (e.g., grocery shopping assistance) are often fee-based, and therefore not accessible to older adults living on a low, potentially fixed, income.(16)

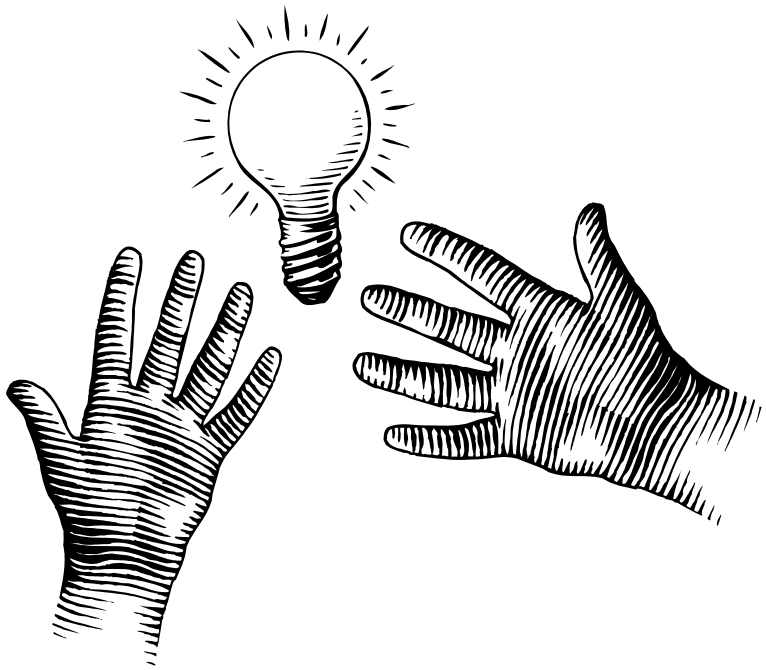
In addition, older adults facing economic insecurity may find it difficult to make nutrition a priority. In some cases, older adults may limit their spending wherever possible because of concerns with "out-living their money." For these older adults, food may be viewed as a 'flexible' expense (i.e., an expense that is easily cut or avoided).(15) Others may find nutrition quite important, but still face the daily struggle to pay for out-of-pocket medical expenses (e.g., prescription drugs) and other items that are perceived as more important.

Other financial barriers can be found at the health-system level. For example, a lack of government funding has been identified as a barrier for nutrition-related health promotion and services targeting older adults. Current legislation provides funding for food provision programs, with less focus on nutrition education and other ways to prevent nutritional problems (e.g. grocery store assistance or transportation accessibility).

Health-system leaders pay attention to aging issues, but have not yet prioritized nutrition

Health-system leaders are increasingly paying attention to the challenges of supporting the rapidly growing and aging population. For examples, two recent reports, *Living Longer, Living Well* (20) and *Ontario's Action Plan for Seniors,*(21) have identified areas of greatest need when it comes to supporting older adults in the province, such as how to support healthy aging and senior-friendly communities. The Ontario government is continuing to review these reports in order to implement key recommendations in the future. Addressing nutritional risk among older adults has not yet been explicitly prioritized in these initiatives.

Similarly, initiatives led by the federal government in the areas of nutrition and healthy eating have not prioritized older adults. For instance, the federal government established a committee responsible for developing a national nutrition plan in the mid-1990s. While the committee's report proposed strategies and actions to improve Canadians' nutritional health, there were no specific actions targeting older adults.(22) In 2005, the federal government also released its *Integrated Pan-Canadian Healthy Living Strategy*, which identified healthy eating as a means to reduce the burden of chronic health conditions, however, the strategy did not specifically target nutrition among older adults.(23)



We have selected three options (among many) for which we are seeking public input.

Options: How can we address the problem?

>> To promote discussion about the pros and cons of potential solutions, we have selected three options for addressing nutritional risk among older adults in Ontario

Many options could be selected as a starting point for discussion. We have selected three options (among many) for which we are seeking public input:

1. strengthening older adults' capacity to make healthier nutritional choices;
2. improving the identification and support of older adults at high nutritional risk; and
3. enhancing the coordination, integration and monitoring of services for older adults at nutritional risk.

The three options do not have to be considered as separate. They could be pursued together or in sequence. New options could also emerge during the discussions.

In the following sections, we examine what is known about the pros and cons for each option, by summarizing the findings of systematic reviews of the research literature. A systematic review is a summary of all the studies addressing a clearly formulated question. The authors use systematic and explicit methods to identify, select and evaluate the quality of the studies, and to summarize the findings from the included studies.

Not all systematic reviews are of high quality. We present the findings from systematic reviews along with an appraisal of the quality of each review.

- High-quality reviews: conclusions drawn from these reviews can be applied with a high degree of confidence.
- Medium-quality reviews: conclusions drawn from these reviews can be applied with a medium degree of confidence.
- Low-quality reviews: conclusions drawn from these reviews can be applied with a low degree of confidence.

Option 1 – Strengthening older adults' capacity to make healthier nutritional choices

The first option is aimed at strengthening older adults' capacity (or the capacity of their informal and family caregivers) to make healthier nutritional choices. This option might include (but is not limited to):

- providing information about nutrition;
- supporting nutrition-related behaviour change; and
- developing nutrition-related skills.

We found many high- and medium-quality systematic reviews that could be relevant to option 1, but only some were focused on older adults. Specifically, four systematic reviews identified effective interventions to provide information about nutrition:

- **nutrition education** (delivered by out-patient, hospital outreach or community staff and sometimes delivered remotely by telephone, mail or the internet), alone or as part of a complex intervention, may improve diet and physical function, and may reduce depression, in older adults living at home;(24)
- **health literacy interventions** (e.g., group education and individual counselling using mail or telephone follow-up) delivered in community settings appear more effective than

interventions delivered in primary care settings in supporting sustained changes in health literacy about nutrition;(25) and

- **dietary advice** with or without oral nutritional supplements may improve weight, body composition and grip strength; however, there is no evidence of benefit of dietary advice or oral nutritional supplements, given alone or in combination, on how long someone lives.(26)

Also, telephone follow-up, videos, contracts, feedback, nutritional tools and multifaceted interventions are promising to enhance adherence to dietary advice for preventing and managing chronic diseases in adults, but it is unclear which one is most effective.(27)

Five systematic reviews identified relevant interventions to support nutrition-related behaviour change:

- **lifestyle programs with many components**, whether they present tailored or generic information in different formats to older adults (e.g., online or offline formats), are more effective than interventions with only one component;(28)
- **online lifestyle programs** holds significant potential in implementing effective lifestyle programs to a large audience of older adults at a very low cost, but social networking components appear ineffective as participants rarely used discussion forums;(28)
- **financial incentives for dietary behaviour changes** may be effective, including those that involve subsidizing healthier foods such as fruits, vegetables and low-fat snacks sold in supermarkets, cafeterias, vending machines, farmers' markets or restaurants;(29;30) and
- **behavioural counselling about nutrition** appears effective when targeting people with risk factors for cardiovascular disease,(31) and when it involves the active participation and collaboration of community-dwelling older adults.(32)

We found no systematic reviews examining how to develop nutrition-related skills and competencies among older adults (or their informal and family caregivers).

Option 2 – Improving the identification and support of older adults at high nutritional risk

The second option is aimed at improving the identification and support of older adults who are at high nutritional risk, in order to prevent or mitigate the health risks associated with poor nutrition. This option might include (but is not limited to):

- supporting the use of a validated screening tool in all care settings (i.e., home and community care, primary care, acute care and long-term care);
- training and supporting physicians, nurse practitioners and nurses in all care settings to support older adults identified as being at high nutritional risk and to recognize the need for referrals to dietitians; and
- expanding the role of dietitians within primary care, including in Family Health Teams and Community Health Centres, as well as in other primary-care settings where physician or nurse practitioner referrals are often required.

We found many high- and medium-quality systematic reviews that could be relevant to option 2, but again only a few focused on older adults (and their informal and family caregivers). Among these, two systematic reviews revealed a lack of evidence regarding nutritional screening:

- a recent and low-quality review found several tools currently being used to screen community-dwelling older adults at nutritional risk, but most tools have not undergone extensive testing;(33) and
- a recent and high-quality review found that there is not enough evidence to determine whether nutritional screening programs are effective in improving the quality of care and patient outcomes in primary-care and hospital settings.(8)

Glossary (4)

Screening

The testing of people without signs or symptoms for a disease or condition, with the aim of reducing their future risk of ill health, or of giving them information about their risk.(1)

Nutritional risk screening

The process of identifying people in need of further assessment and intervention to prevent the consequences of malnutrition.(4)

Despite the lack of synthesized research evidence on the effectiveness of nutritional screening, many nutrition-screening tools have been developed and tested in recent years, and some appear promising for identifying older adults at nutritional risk. One such screening tool, called SCREEN II (Seniors in the Community Risk Evaluation for Eating and Nutrition II), was developed by a Canadian researcher and is increasingly used for older adults in various care settings.(4;34)

We also found several reviews examining the role of different healthcare providers in the delivery of nutrition-related care. Overall, the reviews found that:

- **dietitians** may be better than doctors at lowering blood cholesterol in the short to medium term (although the difference between the two types of health professionals was small), but advice from dietitians may be no more effective than self-help resources (and there's no evidence that advice from dietitians is more effective than advice from nurses);(35)
- **family physicians** have the potential to offer nutrition-related care to patients with lifestyle-related chronic health conditions, but the effectiveness of such interventions is unclear; however, it's important to note that this review did not focus specifically on older adults;(36)
- **hospital nurses** can play an important role in reducing the prevalence of hospital malnutrition, but the successful implementation of such a role can only occur with the support of a multidisciplinary team;(37)
- **informal caregivers and community health workers** can play a meaningful role in the nutritional care team for community-dwelling older adults to improve or prevent decline in nutritional and functional status, without increasing the burden on informal caregivers.(38)

It is important to note that the findings regarding dietitians in particular should be interpreted with caution since the studies were not of good quality, the analysis was based on a limited number of trials, and it did not focus specifically on older adults.

Option 3 – Enhancing the coordination, integration and monitoring of services for older adults at nutritional risk

The third option aims to enhance the coordination, integration and monitoring of services for older adults at nutritional risk. In other words, this option aims to improve how the different parts of the health system (e.g., home and community care, primary care, acute care, and long-term care) might address the needs of older adults at nutritional risk, as well as their informal and family caregivers. This option might include (but is not limited to):

- enhancing the coordination and integration of services in Ontario's health system to better address the needs of older adults at nutritional risk, with services requiring greater coordination and integration including those provided through:
  - 14 Community Care Access Centres (e.g. visiting health professional services, personal care and support, and homemaking),
  - 184 Family Health Teams, 75 Community Health Centres, 25 Nurses Practitioners-Led Clinics and 644 not-for-profit community support services,
  - 145 hospitals, and
  - more than 630 long-term care facilities;
- monitoring the implementation of nutrition services in all care settings and evaluating their impact; and
- increasing the accessibility to dietitian services in all care settings.

We only found two systematic reviews that examined the provision of integrated nutrition-related care to older adults suffering from Alzheimer's disease and other types of dementia. The first was a recent and high-quality systematic review examining the effectiveness of nutritional interventions in community-dwelling patients with Alzheimer's disease who were at risk of malnutrition. The review found a lack of evidence about the effectiveness of interventions.(39)

The second was a recent and medium-quality systematic review comparing various interventions targeting older adults with dementia in long-term care facilities.(10) The review revealed that:

- **providing nutritional supplements** showed moderate-quality evidence about their effects on increasing food intake, body weight, and body mass index (i.e., the relative weight based on an individual's mass and height);

- **training/education programs** (e.g., a feeding skills training program for nursing assistants) showed moderate-quality evidence about their effects on increasing eating time and decreasing feeding difficulty, but such programs did not increase food intake; and
- **environment/routine modification** (e.g., providing meals in high-contrast tableware, playing soothing music during meal time) showed low-quality evidence about their effects on increasing food intake, and there was insufficient evidence about their effects on decreasing agitation.

The table below summarizes what is known about the three options.

Option 1 – Strengthening older adults' capacity to make healthier nutritional choices

What is known about option 1

- Interventions to provide information about nutrition:
  - nutrition education delivered by out-patient, hospital outreach or community staff may improve diet and physical function and may reduce depression in older adults living at home;(24)
  - health literacy interventions in community settings (e.g., group education and individual counselling using mail or telephone follow-up) may support sustained changes in health literacy and nutritional habits;(25)
  - dietary advice may improve weight, body composition and grip strength, but there is no evidence of benefit in terms of survival;(26) and
  - telephone follow-up, videos, contracts, feedback, nutritional tools and multifaceted interventions are promising ways to enhance adherence to dietary advice for preventing and managing chronic diseases in adults, but it is unclear which one is most effective.(27)
- Interventions to support nutrition-related behaviour change:
  - lifestyle programs with many components (e.g., online or offline formats) are more effective than interventions with only one component;(28)
  - online lifestyle programs hold significant potential to reach a large audience at a very low cost, but social networking components appear ineffective as participants rarely used discussion forums;(28)
  - financial incentives may be effective for dietary behaviour changes;(29;30) and
  - behavioural counselling about nutrition appears effective when targeting people with risk factors for cardiovascular disease,(31) and when it involves the active participation and collaboration of community-dwelling older adults.(32)
- We found no systematic reviews examining how to develop nutrition-related skills and competencies among older adults (or their informal and family caregivers).

Option 2 – Improving the identification and support of older adults at high nutritional risk

What is known about option 2

- Interventions supporting the use of a validated screening tool in all care settings:
  - there's a lack of synthesized research evidence on the effectiveness of nutritional screening, but many nutrition-screening tools have been developed and tested in recent years (e.g., SCREEN II).
- Interventions focusing on the role of different healthcare providers in nutrition care:
  - family physicians have the potential to offer nutrition-related care to patients with lifestyle-related chronic health conditions, but the effectiveness of such interventions is unclear, especially for older adults;(36)
  - hospital nurses can play an important role in reducing the prevalence of hospital malnutrition, but the successful implementation of such a role requires the support of a multidisciplinary team;(37)
  - dietitians may be better than doctors at lowering blood cholesterol in the short to medium term, but advice from dietitians may be not more effective than self-help resources (and there's no evidence that advice from dietitians is more effective than advice from nurses); and
  - informal caregivers and community health workers can play a meaningful role in the nutritional care team for community-dwelling older adults to improve or prevent decline in nutritional and functional status, without increasing the burden on informal caregivers.(38)

Option 3 – Enhancing the coordination, integration and monitoring of services for older adults at nutritional risk

What is known about option 3

- Interventions to enhance the coordination and integration of services:
  - there's a lack of evidence about the most effective nutritional interventions for community-dwelling patients with Alzheimer's disease who are at risk of malnutrition.(39)
  - a review examining the effectiveness of nutritional interventions targeting older adults with dementia in long-term care facilities found that:(10)
    - providing nutritional supplements showed moderate-quality evidence about their effects on increasing food intake, body weight, and body mass index;
    - training/education programs (e.g., feeding skills training program for nursing assistants) showed moderate-quality evidence about their effects on increasing eating time and decreasing feeding difficulty, but not on food intake; and
    - environment/routine modification (e.g., providing meals in high-contrast tableware, playing soothing music during meal time) indicated low-quality evidence about their effects on increasing food intake, and insufficient evidence about their effects on decreasing agitation.

Implementation considerations

It is important to consider what barriers we may face in implementing potential solutions. The three options presented above will now be considered in the context of barriers. These barriers may affect different groups (e.g., patients and healthcare providers), different healthcare organizations or the health system. While some barriers could be overcome relatively easily, others could be so substantial that they force us to re-evaluate whether we should pursue that option.

Various 'windows of opportunity' could open and facilitate the implementation of each of the three options. A window of opportunity could be a recent event that was highly publicized in the media, a crisis, a change in public opinion, or an upcoming election.

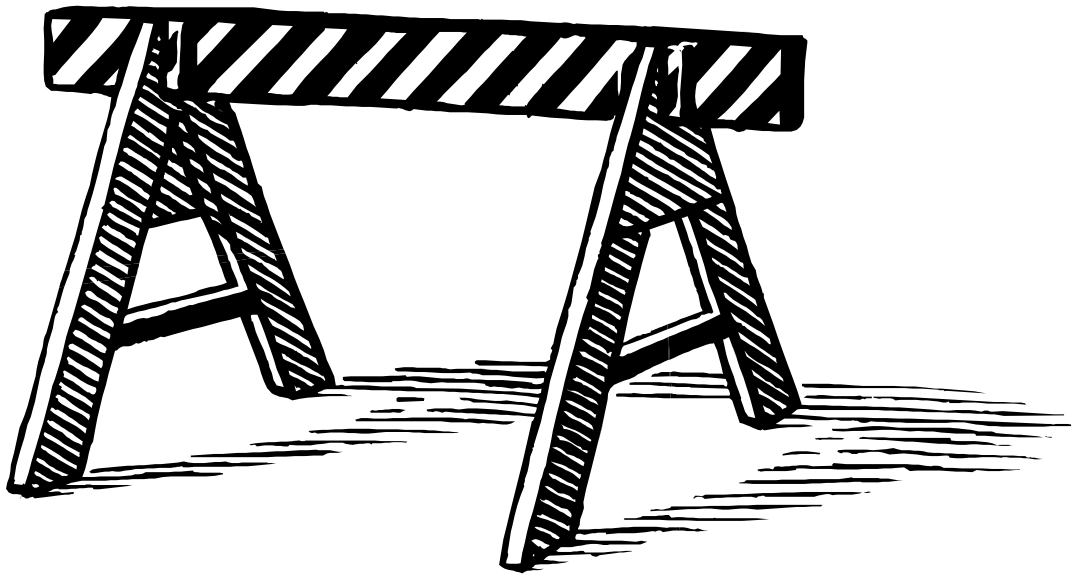
A list of potential barriers and windows of opportunity for implementing the three options is provided below. This table is provided to spur reflection about some of the considerations that may influence choices about an optimal way forward. We have identified the barriers and windows of opportunity from a range of sources (not just the research literature) and we have not ranked them in any way.

Option 1 – Strengthening older adults' capacity to make healthier nutritional choices

Barriers	Windows of opportunity
• Many older adults who are identified as "at-risk" may refuse referrals to existing nutrition programs and services, and many may not appreciate the risk associated with nutritional problems.(14) • Older adults may not be aware of resources and support currently available.(5) • Older adults may have difficulty interpreting nutritional information (e.g., limited health literacy skills or information that is not culturally appropriate), or may not trust such information.(14) • Health-system stakeholders (including providers, managers and policymakers) may be unaware of the importance of addressing nutritional risk among older adults, or may lack the political will to address it.(14)	• Health-system leaders at the provincial and federal levels are increasingly paying close attention to the challenges of supporting the rapidly growing aging population, and supporting optimal aging initiatives.(20;21;23) • Health-system leaders could build on existing programs and services, such as EatRight Ontario, which has been shown to have a higher proportion of older adult callers (17% of all callers) than other telehealth lines (3.5%).(40) • Dietitians of Canada have recommended that EatRight Ontario should establish relationships with other provincial telehealth services in order to broaden accessibility to nutrition advice.(40)

Option 2 – Improving the identification and support of older adults at high nutritional risk	
Barriers	Windows of opportunity
• Many older adults who are identified as "at-risk" may refuse referrals to existing nutrition programs and services, and many may not appreciate the risk associated with nutrition problems.(14) • Some older adults may not accept the nutrition assistance services because they are worried that such services may compromise their independence. • Some older adults may be concerned with the stigma associated with nutrition assistance services.(15) • There is no broadly accepted screening tool to identify older adults at nutritional risk. • Some healthcare providers may lack the incentives necessary to change how they provide care. • Hospitals and health centres may not have the resources needed to train their staff about nutrition-related screening and care, or, in the case of primary care centres, to include a dietitian in their staff. • Health-system leaders may not have the capacity to invest in training and ongoing support, which is required to sustain a screening program. • Health-system leaders may be unaware of the importance of addressing nutritional risk among older adults, or may lack the political will to address it.(14)	• Older adults have been found in one study to be generally receptive to being screened for potential nutrition problems.(14) • Providers may be receptive to screening programs using tools that are easy, flexible (self- or interviewer-administered), take little time, and include risk factors consistent with the group being targeted.(6) • There is an opportunity to build on existing tools to identify older adults at nutritional risk and connect them (or their caregivers) with resources in response to identified concerns (e.g., Nutri-eSCREEN questionnaire available at **www.nutritionscreen.ca**).

Option 3 – Enhancing the coordination, integration and monitoring of services for older adults at nutritional risk	
Barriers	Windows of opportunity
• Some healthcare providers may lack the incentives necessary to change how they provide care. • There may be a lack of accountability and support for healthcare organizations to change how they provide care. • Health-system leaders may face difficulties in developing a shared vision about how care should be coordinated, integrated and monitored. • Health-system stakeholders (including providers, managers and policymakers) may be unaware of the importance of addressing nutritional risk among older adults, or may lack the political will to address it.(14)	• A lot of investments have been made in primary care over the last decade, and many healthcare providers are now practising in innovative delivery models. • Emerging and innovative approaches, such as Health Links, which aim to support coordinated care for people with complex needs, may provide a starting point for continued innovation.

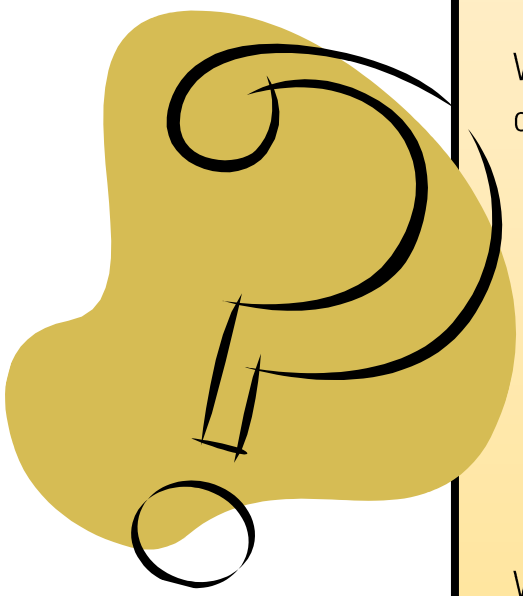


Questions for the citizen panel

>> We want to hear your views about the problem, three options for addressing it, and how we can move forward.

This brief was prepared to stimulate the discussion during the citizen panel. The views, experiences and knowledge of citizens can make a significant contribution to finding viable solutions to the problem.

More specifically, the panel will provide an opportunity to explore the questions outlined in Box 2. Although we will be looking for common ground during these discussions, the goal of the panel is not to reach consensus, but to gather a range of perspectives on this topic.



Box 2 >> Questions for the citizen panels

What are the biggest nutritional challenges faced by older adults, such as those:

- **>>** who are frail?
- **>>** who are transitioning between their homes and healthcare facilities?
- **>>** who are living in long-term care facilities?
- **>>** who are first-generation immigrants?

What are your views about the three proposed options?

- **>> Option 1:** Strengthening older adults' capacity to make healthier nutritional choices
- **>> Option 2:** Improving the identification and support of older adults at high nutritional risk
- **>> Option 3:** Enhancing the coordination, integration and monitoring of services for older adults at nutritional risk

What are potential barriers and facilitators for implementing these options?

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Authors

François-Pierre Gauvin, PhD, Lead, Evidence Synthesis and Francophone Outreach, McMaster Health Forum
John N. Lavis, MD PhD, Director, McMaster Health Forum, and Professor, McMaster University
Aunima Bhuiya, research assistant, McMaster Health Forum, and student, McMaster University
Mathura Mahendren, Forum Fellow, McMaster Health Forum and student, McMaster University

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Conflict of interest

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Merit review

The citizen brief was reviewed by a small number of citizens, other stakeholders, policymakers and researchers in order to ensure its relevance and rigour.

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References

1. Raffle A, Gray M. Screening Evidence and Practice. Oxford, United Kingdom: Oxford University Press; 2007.
2. Public Health Agency of Canada. Health Literacy in Canada. Public Health Agency of Canada 2014; Available from: http://www.phac-aspc.gc.ca/cd-mc/hl-ls/index-eng.php
3. Centers for Disease Control and Prevention. Glossary of Epidemiology Terms. Centers for Disease Control and Prevention 2014; Available from: http://www.cdc.gov/reproductivehealth/Data_Stats/Glossary.htm
4. Ramage-Morin, P. L. and Garriguet, D. Nutritional Risk Among Older Canadians. Ottawa, Canada: Statistics Canada; 2013.
5. Keller H, Carrier N, Duizer L, Lengyel C, Slaughter S, Steele C. Making the most of mealtimes (M3): Grounding mealtime interventions with a conceptual model. Journal of the American Medical Directors Association 2014;15(3):158-61.
6. World Health Organization. Health Promotion Glossary. World Health Organization 1998; Available from: http://www.who.int/healthpromotion/about/HPG/en/
7. Desjardins, E., Kawartha, H., and et al. Food Literacy Among Youth, Young Pregnant Women, and Young Parents Who Are at Risk for Poor Health. Toronto, Canada: Ontario Society of Nutrition Professionals in Public Health; 2013.
8. Omidvari AH, Vali Y, Murray SM, Wonderling D, Rashidian A. Nutritional screening for improving professional practice for patient outcomes in hospital and primary care settings. Cochrane Database of Systematic Reviews 2013;6:CD005539.
9. Canadian Malnutrition Task Force. What Is Malnutrition? Canadian Malnutrition Task Force 2014; Available from: http://nutritioncareincanada.ca/malnutrition/what-is-malnutrition/
10. Liu W, Cheon J, Thomas SA. Interventions on mealtime difficulties in older adults with dementia: A systematic review. International Journal of Nursing Studies 2014;51(1):14-27.
11. Drummond, D. Commission on the Reform of Ontario's Public Services. Toronto, Canada: Government of Ontario; 2012.
12. Gauvin, FP, Wilson, MG, Lavis, JN, and Abelson, J. Citizen Brief: Improving Care and Support for People with Multiple Chronic Health Conditions in Ontario. Hamilton, Canada: McMaster Health Forum; 2013.
13. Singh H, Watt K, Veitch R, Cantor M, Duerksen D. Malnutrition is prevalent in hospitalized medical patients: Are housestaff identifying the malnourished patient? Nutrition 2006;22(3):350-4.
14. Keller H. Promoting food intake in older adults living in the community: A review. Applied Physiology, Nutrition and Metabolism 2007;32(6):991-1000.

15. Keller H, Haresign H, Brockest B. Process evaluation of bringing nutrition screening to seniors in Canada. Canadian Journal of Dietetic Practice and Research 2007;68(2):86-91.
16. Keller H, Hedley M, Hadley T, Wong S, Vanderkooy P. Food workshops, nutrition education, and older adults: A process evaluation. Journal of Nutrition for the Elderly 2005;24(3):5-23.
17. Ontario LHIN. Senior Friendly Hospital Care Across Ontario: Summary Report and Recommendations. 2011.

Ref Type: Online Source

18. Duerksen DR, Keller HH, Vesnaver E, Allard JP, Bernier P, Gramlich L et al. Physicians' perceptions regarding the detection and management of malnutrition in Canadian hospitals: Results of a Canadian Malnutrition Task Force survey. Journal of Parenteral & Enteral Nutrition 2014.
19. Keller HH, Vesnaver E, Davidson B, Allard J, Laporte M, Bernier P et al. Providing quality nutrition care in acute care hospitals: Perspectives of nutrition care personnel. Journal of Human Nutrition and Dietetics 2014;27(2):192-202.
20. Sinha, S. K. Living Longer, Living Well. Toronto, Canada: Government of Ontario; 2012.
21. Government of Ontario. Independence, activity and good health: Ontario's action plan for seniors. 2013.
22. More C, Keller H. Community nutrition policy for older adults in Canada. Canadian Journal of Dietetic Practice and Research 2008;69(4):99-102.
23. Public Health Agency of Canada. Integrated Pan-Canadian Healthy Living Strategy. Ottawa, Canada: Public Health Agency of Canada; 2005.
24. Young K, Bunn F, Trivedi D, Dickinson A. Nutritional education for community dwelling older people: A systematic review of randomised controlled trials. International Journal of Nursing Studies 2011;48(6):751-80.
25. Taggart J, Williams A, Dennis S, Newall A, Shortus T, Zwar N et al. A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors. BMC Family Practice 2012;13:49.
26. Baldwin C, Weekes CE. Dietary advice with or without oral nutritional supplements for disease-related malnutrition in adults. Cochrane Database of Systematic Reviews 2011;(9):CD002008.
27. Desroches S, Lapointe A, Ratte S, Gravel K, Legare F, Turcotte S. Interventions to enhance adherence to dietary advice for preventing and managing chronic diseases in adults. Cochrane Database of Systematic Reviews 2013;2:CD008722.
28. Aalbers T, Baars MA, Rikkert MG. Characteristics of effective Internet-mediated interventions to change lifestyle in people aged 50 and older: A systematic review. Ageing Research Reviews 2011;10(4):487-97.

29. An R. Effectiveness of subsidies in promoting healthy food purchases and consumption: A review of field experiments. Public Health Nutrition 2013;16(7):1215-28.
30. Purnell JQ, Gernes R, Stein R, Sherraden MS, Knoblock-Hahn A. A systematic review of financial incentives for dietary behavior change. Journal of the Academy of Nutrition and Dietetics 2014;114(7):1023-35.
31. Lin JS, O'Connor EA, Evans CV, Senger CA, Rowland MG, Groom HC. Behavioral counseling to promote a healthy lifestyle for cardiovascular disease prevention in persons with cardiovascular risk factors: An updated systematic evidence review for the U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality 2014.
32. Bandayrel K, Wong S. Systematic literature review of randomized control trials assessing the effectiveness of nutrition interventions in community-dwelling older adults. Journal of Nutrition Education and Behavior 2011;43(4):251-62.
33. Phillips MB, Foley AL, Barnard R, Isenring EA, Miller MD. Nutritional screening in community-dwelling older adults: A systematic literature review. Asia Pacific Journal of Clinical Nutrition 2010;19(3):440-9.
34. Keller H.H. SCREEN. Dr Heather Keller 2011; Available from: http://www.drheatherkeller.com/index.php/screen/
35. Thompson RL, Summerbell CD, Hooper L, Higgins JP, Little PS, Talbot D et al. Dietary advice given by a dietitian versus other health professional or self-help resources to reduce blood cholesterol. Cochrane Database of Systematic Reviews 2003;(3):CD001366.
36. Ball L, Johnson C, Desbrow B, Leveritt M. General practitioners can offer effective nutrition care to patients with lifestyle-related chronic disease. Journal of Primary Health Care 2013;5(1):59-69.
37. Jefferies D, Johnson M, Ravens J. Nurturing and nourishing: the nurses' role in nutritional care. Journal of Clinical Nursing 2011;20(3-4):317-30.
38. Marshall S, Bauer J, Capra S, Isenring E. Are informal carers and community care workers effective in managing malnutrition in the older adult community? A systematic review of current evidence. Journal of Nutrition, Health, and Aging 2013;17(8):645-51.
39. Droogsma E, van AD, van SJ, Veeger N, van D, I, De Deyn PP. Nutritional interventions in community-dwelling Alzheimer patients with (risk of) undernutrition: A systematic review. International Psychogeriatrics 2014;1-9.
40. Dietitians of Canada. DC Ontario Response to Ontario's Seniors Strategey: Living Longer, Living Well. Dietitians of Canada 2013; Available from: http://www.dietitians.ca/Downloadable-Content/Public/DC-Ontario-response-to-Living-Longer-Living-Well.aspx

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1280 Main St. West, MML-417
McMaster University
Hamilton, ON Canada L8S 4L6
Tel: +1.905.525.9140 x 22121
Fax: +1.905.521.2721
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