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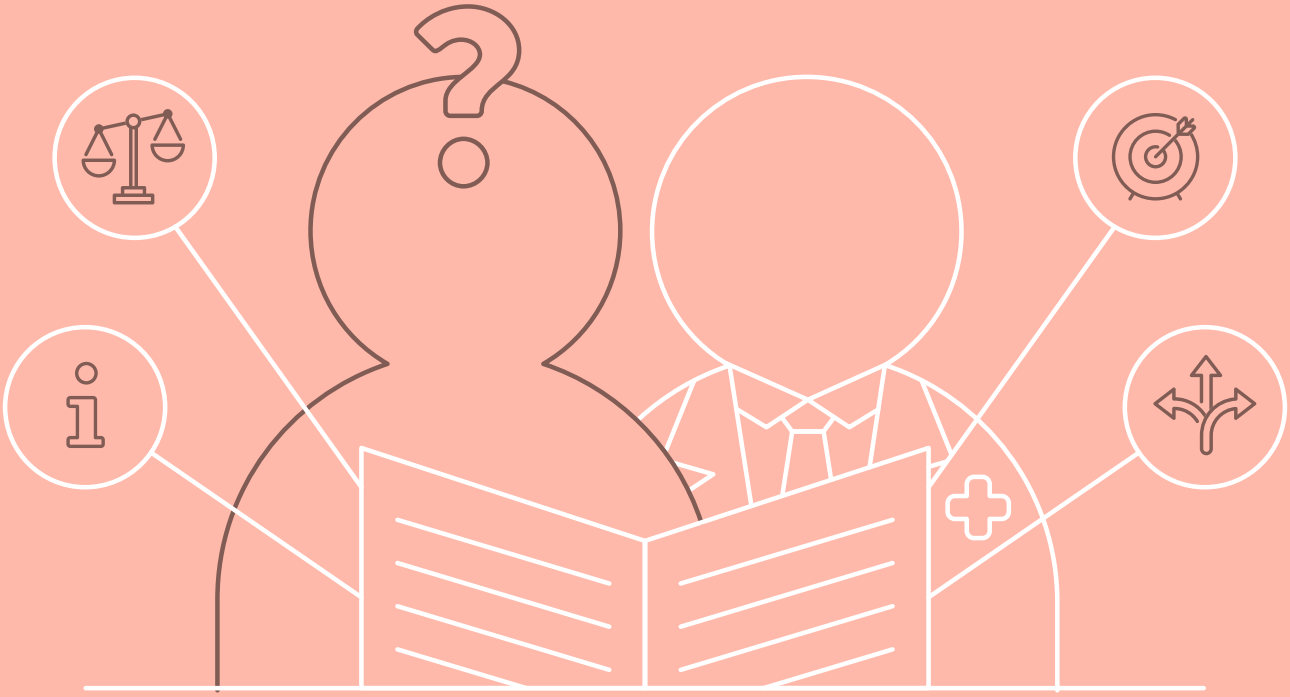
UNIVERSITÉ LAVAL



Decision Box

Malnutrition Among Older Adults

Choosing an option to limit weight loss

THIS DOCUMENT IS AIMED AT...

- Older adults living in the community who are not at the end-of-life stage
- The family or friend caregivers of those older adults, where applicable

THIS DOCUMENT IS DESIGNED TO...

- Inform people of the benefits and harms of the available options to limit weight loss
- Prepare people to discuss their options with healthcare professionals
- Help people choose an option that respects their priorities

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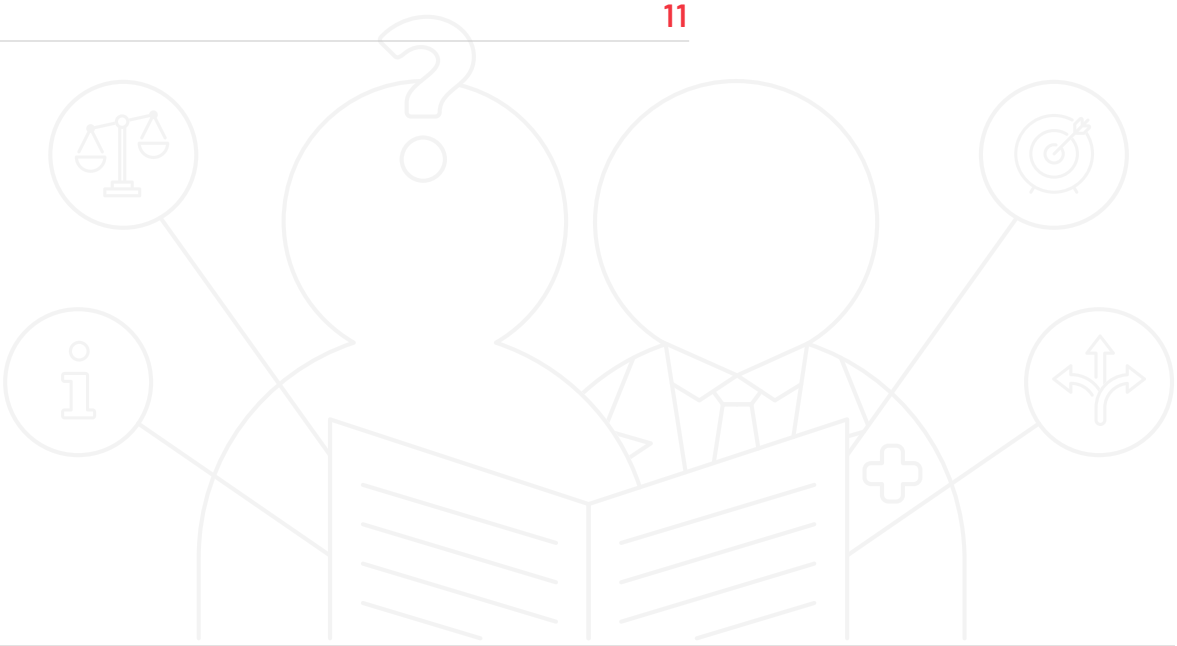


Malnutrition

Malnutrition occurs when a person's nutritional intake is **too low to meet their needs**. It may lead to a **decline in health and strength**, and **reduce the person's ability to do things independently, such as walking, dressing, and bathing**. Older adults who have lost too much weight are also **at greater risk of dying** as a result.

Risk factors for malnutrition

Social and economic factors such as **grief, eating alone, lack of cooking knowledge, or financial constraints**.

Health factors such as **dental problems, difficulty swallowing** (for example, choking when eating, coughing or gagging when swallowing, or drooling)**, changes in digestion** (such as constipation, poor appetite, ingestion or eating problems)**, loss of independence in daily activities, depression, and some drugs** used for depression or anxiety (e.g., Celexa, Cipralex, Zoloft).

Environmental factors such as **distance to grocery stores, and the availability and affordability of public transit**.

Which people should consider making a change to maintain or gain weight?

Older adults who experience:

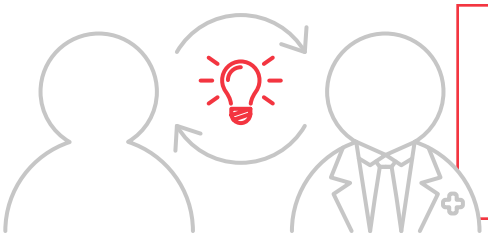
- Unintentional **weight loss**
- **Loss of appetite**
- **Difficulty eating or drinking** (coughing, choking, or pain)

Older adults who have normal digestion but difficulty eating because of cancer, neurological problems, gastrointestinal problems, or trauma to their gut might also consider **tube feeding. This document does not describe the pros and cons of the use of tube feeding.**

Taking your priorities into account

Depending on your priorities, you may or may not decide to make a change. The choice is **up to you** because...

- There are **several options** to limit weight loss
- These options can cause benefits or harms. It is **difficult to predict how they will work for you**.
- You are **more likely to stick to a lifestyle change** that you chose to make yourself
- Opting for an intervention or "watchful waiting" are **both acceptable options**



We recommend that...

- The decision take into account the person's **values** and **priorities**
- The decision **be shared** among the healthcare professional, the person and, if necessary, the family or friend caregiver

OPTIONS
Explore the options

Oral Nutritional Supplements

Oral nutritional supplements can be taken as a **liquid supplement** or as **fortified food**. Liquid oral nutritional supplements are often taken as beverages, or milkshakes, that are enriched in protein and vitamins. Common brands include Boost, Ensure, and Breeze. They come in various flavors, such as chocolate, strawberry, or vanilla. They can be taken once or twice a day, between meals. Some people prefer to take them as shots (smaller quantities at higher concentrations), 5 times a day. Fortifying foods consists of adding milk or protein powder to regular food such as soup, mashed potatoes, or any beverages.

BENEFITS

Weight ⊕⊕○○

For every 100 older adults taking oral nutritional supplements, **19 gain weight** due to the supplement.

Limb strength ⊕⊕○○

For every 100 older adults taking oral nutritional supplements and partaking in physical activity, **5 increase their limb strength** due to this combination.

Hospital readmission ⊕⊕○○

For every 100 older adults discharged from the hospital and taking oral nutritional supplements, **12 are not readmitted**, as a result of taking the supplement.

Mortality ⊕⊕○○

The current available research does not show any effect of oral nutritional supplements on people's **risk of dying**.

HARMS

Adverse effects ⊕○○○

Older adults taking oral nutritional supplements can experience **nausea, diarrhea, fatigue, loss of appetite, or tooth decay**. These adverse effects are however **rare**.

Adherence ⊕⊕○○

For every 100 older adults needing oral nutritional supplements, from **43 to 100 actually take them**, depending on the study. Two main reasons may explain that the older adult did not take the oral nutritional supplements as prescribed in these studies. Either the older adults had a serious eating disorders, or they were prescribed an irealistic amount of supplements.

Adverse drug interactions ⊕○○○

Oral nutritional supplements **may interact with certain medications** by decreasing their efficacy. Before taking oral nutritional supplements, it is best to consult your doctor or pharmacist to ensure there is no interaction with your medications. If they do interact, **the supplement can be taken at different times of the day**, separately from the medication.

PRATICAL ISSUES

Cost ⊘

Liquid nutritional supplements cost about **$4 per day** ($12 for a 6-pack of 235 ml bottles).

Fortifying your food three times a day costs about **$2 per day** (1 portion: 7 grams, $21.97 for 227 grams).

Change in food taste ⊘

Adding proteins to food may change its taste.

CONFIDENCE IN THESE RESULTS:

⊕⊕⊕⊕ High: Further research is very unlikely to change our confidence in the estimate of effect.
⊕⊕⊕○ Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
⊕⊕○○ Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
⊕○○○ Very low: Any estimate of effect is very uncertain.
⊘ Not evaluated due to a lack of an estimate of effect.

OPTIONS
Explore the options

Nutrition Counselling + Oral Nutritional Supplements

Consists of combining nutrition counselling with intake of oral nutritional supplements. **Nutrition counselling** is done either by phone or in person, by a nutritionist or a dietitian who offers personalized advice on health and food preparation. See p. 4 for the definition of Oral Nutritional Supplements.

BENEFITS

Weight ⊕○○○

For every 100 older adults receiving nutrition counselling in combination with oral nutritional supplements, **21 gain weight** due to this combination.

Mortality ⊕⊕○○

The current research does not show any effect of a combination of nutrition counselling + oral nutritional supplements **on people's risk of dying**.

HARMS

Adverse effects of oral nutritional supplements ⊕○○○

Older adults taking oral nutritional supplements can experience **nausea, diarrhea, fatigue, loss of appetite, or tooth decay**. These adverse effects are, however, **rare**.

Adverse effects of nutrition counselling ⊕⊕⊕○

No adverse effects have been reported regarding the use of a nutritionist's services by older adults discharged from hospital.

PRATICAL ISSUES

Access to a nutritionist or dietitian ⊘

Accessing a nutritionist or dietitian working in the public sector **may require an external referral from an attending physician**, depending on the province where you live. There may also be a **waiting list** to access these services. **Access to a dietitian in private practice may be easier.** Their costs vary across provinces, with the initial visit slightly higher than follow-up meetings. Follow-up is generally done every 2 to 4 weeks.

Need to change eating habits ⊘

Nutrition counselling often leads to you having to change your eating habits, and some suggestions might not be what you were expecting.

CONFIDENCE IN THESE RESULTS:

⊕⊕⊕⊕ High: Further research is very unlikely to change our confidence in the estimate of effect.
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OPTIONS
Explore the options

Meals on wheels

Meals on Wheels is a subscription-based service that **delivers meals to your home**. The meals may be frozen or fresh, and can be adapted to your diet or preferences. You have the option of various menu offerings, from appetizers to dessert. Meals on Wheels can be used **more or less intensively**, depending on your needs. The **more intensive service** consists of receiving 3 meals and 2 snacks per day. The **less intensive service** consists of 1 meal per day on weekdays only.

BENEFITS

Weight ⊕⊕○○

For every 100 older adults receiving an intensive Meals-on-Wheels service, **23 gain 5 pounds or more due to the service**.

Death ⊕○○○

For every 100 older adults receiving an intensive Meals-on-Wheels service, **6 avoid death as a result of the service**.

Hospital admissions ⊕○○○

Older adults receiving Meals-on-Wheels service **experience fewer hospital admissions than older adults who do not receive this service**.

PRATICAL ISSUES

Cost ⊘

Meals on Wheels costs vary from one organization to another, **ranging from $5.50 to $6.75** (including soup, main course, and dessert).

Change in eating habits ⊘

Meals on Wheels involves **eating food that you did not prepare yourself**, and that may not suit your tastes.

Difficulty following your diet ⊘

Meals on Wheels involves **eating food that may not always respect your diet** (e.g., salt/fat content).

Availability ⊘

Meals on Wheels services **may not be available in all locations**.

Heating up meals ⊘

Some services provide frozen or chilled meals. Some people **may find it challenging to heat up their meals**.

CONFIDENCE IN THESE RESULTS:

⊕⊕⊕⊕ High: Further research is very unlikely to change our confidence in the estimate of effect.
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⊕○○○ Very low: Any estimate of effect is very uncertain.
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OPTIONS
Explore the options

Watchful waiting

Consists of keeping an eye on your weight without undertaking treatment or changing your lifestyle.

BENEFITS

Avoid making a change if the impacts are uncertain

Among the people who put a lot of time and effort into implementing changes to limit their weight loss, a certain proportion **do not experience any change in their nutritional status**. This **can be disappointing** for them.

Inconveniences associated with the available options

All the available options to limit weight loss cause some **inconveniences**. These inconveniences are reviewed in the previous pages of this document. **People who do not undertake any new treatment or make changes to their lifestyle do not experience any of these inconveniences.**

HARMS

Mortality ⊕⊕⊕⊕

Older adults who lose weight (at least 5% of their weight over a 3-year period) are **twice as likely to die** in the following year as seniors who maintain or gain weight over the same period.

Admission to a long-term care facility ⊕⊕⊕⊕

Older adults who lost at least 5 kg in the previous year are **twice as likely to be admitted to a long-term care facility** or nursing home as older adults who experienced weight gain or no change in weight.

Length of hospital stay ⊕⊕⊕◯

For every 100 older adults suffering from malnutrition, **15 are hospitalized for a longer period, due to malnutrition**.

Risk of falls ⊕⊕⊕◯

For every 100 older adults suffering from malnutrition, **14 experience a fall due to malnutrition**.

Independence in daily activities ⊕◯◯◯

Unintentional weight loss increases a person's **risk of losing their independence in daily activities**.

CONFIDENCE IN THESE RESULTS:

⊕⊕⊕⊕ High: Further research is very unlikely to change our confidence in the estimate of effect.
⊕⊕⊕◯ Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
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⊕◯◯◯ Very low: Any estimate of effect is very uncertain.
⊘ Not evaluated due to a lack of an estimate of effect.

PRIORITIES

Limit your weight loss while respecting your priorities

SELECT WHAT IS MOST IMPORTANT TO YOU AND LOOK AT THE OPTIONS ASSOCIATED TO IT.*

CHECK A SINGLE ITEM AT THE TIME

○ Avoid readmission to the hospital

POSSIBLE OPTIONS TO LIMIT YOUR WEIGHT LOSS:

- Oral nutritional supplements
- Meals on Wheels

○ Avoid admission to a long-term care facility and increase my chances of survival

POSSIBLE OPTIONS TO LIMIT YOUR WEIGHT LOSS:

- Meals on wheels

○ Avoid adverse effects (nausea, diarrhea, fatigue, loss of appetite, tooth decay)

POSSIBLE OPTIONS TO LIMIT YOUR WEIGHT LOSS:

- Watchful waiting
- Meals on Wheels

○ Limit costs

POSSIBLE OPTIONS TO LIMIT YOUR WEIGHT LOSS:

- Watchful waiting

○ Avoid changing my eating habits or the way foods taste

POSSIBLE OPTIONS TO LIMIT YOUR WEIGHT LOSS:

- Watchful waiting

○ Other:

List the options **to limit your weight loss** that support this priority:

*** In this exercise, the benefits and harms of the available options (see previous pages) become priorities to consider. For example, if an option causes some harms, limiting these harms may be a priority for some people and they will want to consider other options.**

CHOOSING AN OPTION

Which option do you prefer?

_____

Are you comfortable with your choice?

		YES	NO
SURE OF MYSELF	Do you feel SURE about the best choice for you?	○	○
UNDERSTAND INFORMATION	Do you know the benefits and risks of each option?	○	○
RISK-BENEFITS RATIO	Are you clear about which benefits and risks matter most to you?	○	○
ENCOURAGEMENT	Do you have enough support and advice to make a choice?	○	○

IF YOU ANSWERED NO TO ANY OF THE QUESTIONS ABOVE, TALK TO YOUR HEALTH PROFESSIONAL.

LIST OF CONTACTS TO ACCESS SERVICES

The *Caredove* website lists the available services in your region.

- Alberta: www.caredove.com/auaalberta
- Ontario: www.caredove.com/auawaterloowellington
- Quebec: www.caredove.com/auaquebec

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PATIENTS INCLUDED: Healthcare professionals, older adults, and family or friend caregivers participated in the design of this Decision box template, as study participants in research projects.

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Introduction

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Oral Nutritional Supplements

Weight

Milne et al. [2009]. Cochrane Database Syst Rev(2): CD003288. Design: Systematic review of 62 randomized and quasi-randomized controlled trials, including 42 trials reporting results on weight change; Participants: 3,058 people age 65 and older who were undernourished or at risk of undernutrition; Intervention: Liquid oral nutritional supplement or fortified food; Follow-up duration: Varied from 1 week to 18 months.

Limb strength

New meta-analysis by the Decision Box team based on the results reported in Wright et al. [2017]. Clin Nutr 10.1016. Design: Systematic review of 11 randomized controlled trials, including 6 trials on limb strength; Participants: 1,459 community-dwelling individuals age 65 years and older defined as frail, sarcopenic, undernourished, or at risk of malnutrition and/or reduced mobility; Intervention: Physical activity combined with oral nutritional supplements; Follow-up duration: Mean time of 3.4 months.

Hospital readmission

Cawood et al. [2012]. Ageing Res Rev 11(2): 278–296. Design: Systematic review of 36 randomized controlled trials, including 2 trials reporting results on hospital readmission; Participants: 525 people aged 53 to 77 whose nutritional status ranged from well nourished to malnourished; Intervention: Multiple types of oral supplement (liquid and/or fortified food); Follow-up duration: Varied from 3 to 6 months.

Mortality

Milne et al. [2009]. Cochrane Database Syst Rev(2): CD003288. Design: Systematic review of 62 randomized and quasi-randomized controlled trials, including 42 trials reporting results on mortality; Participants: 8,031 adults aged 65 and older who were undernourished or at risk of malnutrition; Intervention: Liquid oral nutritional supplement or fortified food; Follow-up duration: Varied from 1 week to 18 months.

Adverse effects

Milne et al. [2009]. Cochrane Database Syst Rev(2): CD003288. Design: Systematic review of 62 randomized and quasi-randomized controlled trials, including 42 trials reporting results on mortality; Participants: 8,031 adults aged 65 and older who were undernourished or at risk of malnutrition; Intervention: Liquid oral nutritional supplement or fortified food; Follow-up duration: Varied from 1 week to 18 months.

Adherence

Malafarina et al. [2013]. JAMDA 14: 10-17. Design: Systematic review of 7 randomized controlled trials; Participants: 836 patients with an average age between 65 and 84; Intervention: Oral nutritional supplements; Follow-up duration: 3-18 months.

Adverse drug interactions

Office régionale de la santé de Winnipeg (2015). Clinical practice guidelines & operation procedure. Medication Pass Nutrition Supplement Program (Med Pass) in Adult Acute Care.

Nutrition Counselling + Oral Nutritional Supplements

Weight

Munk, T., et al. [2016]. J Hum Nutr Diet 29(2): 196-208. Design: Systematic review of 4 randomized controlled trials reporting results on weight change; Participants: 525 undernourished patients age 65 and over who were discharged from acute-care hospital; Intervention: Individualized dietary counselling; Follow-up duration: From 3 to 6 months.

Mortality

Munk, T., et al. [2016]. J Hum Nutr Diet 29(2): 196-208. Design: Systematic review of 4 randomized controlled trials reporting results on weight change; Participants: 729 undernourished patients age 65 and over who were discharged from acute-care hospital; Intervention: Individualized dietary counselling; Follow-up duration: From 3 to 6 months.

Adverse effects of oral nutritional supplements

Milne et al. [2009]. Cochrane Database Syst Rev(2): CD003288. Design: Systematic review of 62 randomized and quasi-randomized controlled trials, including 42 trials reporting results on mortality; Participants: 8,031 adults aged 65 and older who were undernourished or at risk of malnutrition; Intervention: Liquid oral nutritional supplement or fortified food; Follow-up duration: Varied from 1 week to 18 months.

Adverse effects of nutrition counselling

Beck et al. [2012]. Clin Rehabil 27(6): 483-493. Design: Randomized controlled trial comparing older adults discharged from hospital who were or were not followed by a nutritionist; Participants: 118 older adults (age 65 and over) discharged from the hospital and considered to be at risk of malnutrition; Intervention: Individual in-home consultation with a nutritionist; Follow-up duration: 26 weeks.

Meals on Wheels

Weight

Krester et al. [2003]. J Am Diet Assoc 103(3): 329-336. Design: Prospective study of 2 nutrition intervention models; Participants: 203 adults aged 60 to 90 who were at risk of malnutrition; Intervention: Participants received either the traditional home-delivery meals (5 hot meals/week) or an improved home-delivery service (21 hot meals and 14 snacks/week); Follow-up duration: 6 months.

Death

Krester et al. [2003]. J Am Diet Assoc 103(3): 329-336. Design: Prospective study of 2 nutrition intervention models; Participants: 203 adults aged 60 to 90 who were at risk of malnutrition; Intervention: Participants received either the traditional home-delivery meals (5 hot meals/week) or an improved home-delivery service (21 hot meals and 14 snacks/week); Follow-up duration: 6 months.

Hospital admissions

Luscombe-Marsh et al. (2014). Australasian Journal on Ageing 33(3):164-9. Design: Retrospective cohort study; Participants: 250 Australian older adults aged 60 to 90 at risk of malnutrition; Intervention: Participants were classified as either poorly nourished and receiving Meals-on-Wheels services, poorly nourished without Meals-on-Wheels services, or well-nourished; Follow-up duration: 12 months.

Watchful Waiting

Mortality

Newman, A. B., et al. [2001]. J Am Geriatr Soc 49: 1309-1318. Design: Longitudinal study; Participants: Sample size of 4,714 community-dwelling older adults age 65 and over at risk of malnutrition; Intervention: No intervention; Follow-up duration: Every 6 months for 4 years.

Admission to a long-term care facility

Payette, H., et al. [2000]. J Clin Epidemiol 53: 579-587. Design: Longitudinal study; Participants: Sample size of 288 community-dwelling older adults age 65 and over at risk of malnutrition; Intervention: No intervention; Follow-up duration: 5 years.

Length of hospital stay

Kyle, U., et al. [2004]. J. Parenter. Enteral Nutr 28(2): 99-104. Design: Longitudinal study; Participants: Sample size of 1,273 adults with mean age of 55 years at risk of malnutrition; Intervention: No intervention; Follow-up duration: Depending on the hospital stay (10 days on average).

Risk of falls

Visvanathan, R., et al. [2003]. J Am Geriatr Soc 51. Design: Longitudinal study; Participants : Sample size of 250 community-dwelling older adults (38.4% at risk of malnutrition and 4.8% malnourished), aged 65 and older; Intervention: no intervention; Follow-up duration: 1 year.

Independence in daily activities

Ritchie, C., et al. [2008]. J. Gerontol 63A(1): 67-75. Design: Longitudinal study; Participants: Sample size of 983 community-dwelling adults age 65 and older at risk of malnutrition; Intervention: No intervention; Follow-up duration: Evaluated every 6 months for 4 years.