

Nutrition and hydration

Te taiora me te mitiwai

The information in this guide is accurate to the best of our knowledge as of June 2023.

Definition

Eating and drinking are fundamental to life. To maintain health, people need to consume a diet that meets the energy and nutrient needs of the body. Human bodies are about 55 percent water, and normal bodily functions rely on adequate hydration (Popkin et al 2010).

Key points

- Age-related changes, cognitive decline and frailty combine to increase the risk of malnutrition and dehydration in older people (Hooper et al 2016; Lukito 2021).
- Cognitive, bladder and bowel function are sensitive to nutrition and hydration status.
- Both food and fluids provide nutrition and hydration. Total water intake includes food sources such as fruit and vegetables (Masot et al 2020), while some liquids such as soups and supplements provide nutritional value.

Why this is important

For people living in aged residential care (ARC), dehydration increases the risk of mortality and rates of delirium and is associated with reduced cognitive function and speech difficulties (Hart et al 2020). In addition, a lack of dietary protein can contribute to sarcopenia (loss of skeletal muscle and strength), which is associated with a loss of function and is a key marker of worsening frailty.

Implications for kaumātua*

Consider three key interacting Māori cultural beliefs when supporting kaumātua with eating and drinking:

- **mana** (dignity, prestige, status) – kaumātua have a lot of mana, which increases as they age
- **tapu** (sacred, prohibited, restricted) – as mana increases, so does tapu (Mead 2016)
- **noa** (neutral, ordinary, unrestricted).

Eating and drinking

Kai (food) is very important in Māori culture; it is believed to originate from the **atua** (gods).

* Kaumātua are individuals and their connection with culture varies. This guide provides a starting point for a conversation about some key cultural concepts with kaumātua and their whānau/family. It is not an exhaustive list; nor does it apply to every person who identifies as Māori. It remains important to avoid assuming all concepts apply to everyone and to allow care to be person and whānau/family led.

- Kai nourishes the **tinana** (the body), **hinengaro** (mind), **wairua** (spirit) and **whānau** / family (community).
- Kai is a key way of demonstrating **manaakitanga** (hospitality, caring for others).
- People share kai as part of **whanaungatanga** (connecting) and belonging to a collective.
- Specific **tikanga** (customary practices or behaviours) associated with kai.

Tikanga around kai

Maintaining a separation and balance between tapu and noa is vital. When this is not maintained, a breach of tapu occurs, and traditionally this is thought to incur the wrath of the atua (gods). A breach of tapu can be significant for kaumātua and their whānau/family.

Kai and **wai** (water) are considered **noa**, while people and their bodily fluids are considered **tapu**. Items that touch the body, particularly the head (eg, hairbrush, toothbrush, clothing, bedding) carry tapu from the individual. This tapu can be neutralised, but until that happens, such items should be kept away from food.

The following guidelines can help maintain balance in food-related tapu and noa.*

- Store food in food-only areas. (Do not mix food and non-food items.)
- Use receptacles for food and water for eating and drinking purposes only.
- Do not pass food over the head of kaumātua.
- Keep food surfaces (tables, benchtops) exclusively for purposes related to food.
 - Do not put bedding, clothing, toiletries, hairbrush, flannels or urinals on food tables.
 - Do not put food on beds, chairs or other non-food surfaces.
 - Do not sit on tables, benchtops or surfaces used for food or medication.

Mātauranga Māori

As well as observing tikanga (above), you can promote **mātauranga Māori** (Māori knowledge) around kai and **wā kai** (mealtimes) by inviting or offering a blessing of kai with **karakia** (prayer) before eating. Creating opportunities to share kai with whānau/family and offering kai Māori (traditional foods) are other ways to support mātauranga Māori.

Example of a blessing for food**

Listen to audio of this karakia

Te reo Māori (Māori language)	English
Whakapaingia ēnei kai	Bless this food
Hei orange mō a mātou tinana	To nourish our bodies
Me ō mātou wairua hoki	And our spirits
Āmene	Amen

* Tapu and noa are key concepts that apply to many areas of life, not just to eating and drinking.

** This just one example of a karakia. Check with kaumātua about their preferred karakia.

Troubleshooting

If you notice that the kaumātua has a change in their relationship with kai (they are not eating or drinking), the reason may be either acute ill health or a tikanga breach (eg, the kaumātua may not consider 'breakfast in bed' a treat if the tray is placed on the bed).

Tapu, noa and mana

Upholding the mana of kaumātua includes observing tapu and noa (as above) as well as supporting them to maintain as much independence as possible with eating and drinking. For example, use light-weight but normal-looking cups and glasses before resorting to adaptive equipment, and use clothes protectors on the lap or tucked in the collar like a napkin.

For further information on any of the above concepts, refer to the *Guide for health professionals caring for kaumātua | Kupu arataki mō te manaaki kaumātua*.

Assessment

It is recommended that registered nurses in ARC remain alert to the possibility of dehydration in the people living in their care facility (Bunn and Hooper 2019). Dehydration is often associated with low fluid intake, particularly when someone is ill. Medication changes, environmental issues such as high environmental temperatures (summer or heatwave) and proximity of fans, heating and air-conditioning units all impact on hydration status.

Hydration assessment

- Water intake predicts hydration status. However, there is no globally accepted evidence on which to base a recommended daily dose (volume) of water for frail older people living either at home or in ARC (Hart et al 2020; Masot et al 2020).
- The European Society for Clinical Nutrition and Metabolism (ESPEN) and the European Food Safety Authority (EFSA) hydration guidelines are the most widely accepted, and they make age-related recommendations. They recommend a daily (24-hour) fluid intake of 1.6 litres for women and 2 litres for men (Masot et al 2020).
- Gaspar (2011) provides a nomogram to tailor fluid levels based on height and weight (see [page 6](#)). According to this scale, those over 75 years of age who are of average height and weight should drink 1.7 litres if female and 1.9 litres if male a day (assuming no contraindications such as a medically initiated fluid restriction). This is similar to the ESPEN and EFSA recommendations.
- Evidence indicates that drinking less than the recommended level, particularly 1 litre or less per day, worsens the effect of chronic conditions (Botigué et al 2019).
- Some evidence indicates that having a low fluid intake (< 1 litre) in a day despite help from care staff is a marker of acute deterioration and impending end of life (Kawakami and Hamano 2020).

- Observable signs of dehydration can be unreliable markers of hydration status. Such signs include dry mouth and tongue, skin turgor, capillary refill time > 3 seconds and concentrated urine (Bunn and Hooper 2019).
- Dehydration can cause acute confusion, change in speech and memory and acute fatigue and hypotension (Hart et al 2020). Dehydration also contributes to constipation.

Nutritional assessment

It is recommended that you assess nutritional status using a standardised tool.

- The Mini Nutritional Assessment – Short Form is relatively quick to administer and is freely available from the developer from www.mna-elderly.com. It was developed specifically for use in older people and has been used in practice and research for over 25 years (Guigoz and Vellas 2021).
- Another standardised tool is the interRAI Long-Term Care Facilities nutritional assessment.

Hydration population approach

Older people often have a reduced thirst sensation, so it is recommended to set a routine for encouraging fluid intake. Some examples are:

- happy hour with 'mocktails'
- scheduling regular rounds that offer tea, coffee and other hot drinks (considering mug size and weight)
- social drinking (non-alcoholic) – such as making sharing a drink part of whānau/family visits
- including water bottle holders on walking frames and wheelchairs so drinks are always to hand (plus encouraging participation through diversional therapy to 'make your own water bottle cover')
- conducting an internal audit of drinks in reach
- a hydration staff champion
- disguised drinking (ice blocks, jelly, fruit with high water content)
- for warm and hot days, having additional rounds of 'special' drinks (eg, iced diet lemonade).

Hydration individual approach

At times, older people living in ARC do become dehydrated. If someone does, it is important to consult with a general practitioner (GP) or nurse practitioner (NP) because the person may need treatment such as subcutaneous or intravenous fluids alongside oral rehydration.

- Studies report subcutaneous fluids are effective for mild to moderate dehydration with minimal complications (Broadhurst et al 2020; Caccialanza et al 2018). A dextrose/saline solution is recommended, with a GP or NP prescribing a volume of up to 2 litres over 24 hours (Woodward 2013).
- Intravenous fluids are generally restricted to acute hospital care.

Nutritional supplements and diet modification

- A food-first approach is recommended to improve nutritional status. This includes monitoring food intake closely, increasing calorie-dense foods and increasing the frequency of snacks. However, if an older person loses more than 5 percent of their body weight in 3 to 6 months, or 10 percent in 1 month, they are likely to need a referral to a dietitian for further assessment and diet modification, along with a GP or NP review.
- People with swallowing difficulties are likely to need diet modification. The international Dysphagia Diet Standardisation Initiative is the best resource to access for describing modified diets (iddsi.org).

Note: Be aware of the concepts of tapu and noa so you don't inadvertently discourage hydration. As a result of any breach of tapu, the person may not want to drink.

Care planning

Hydration

- Develop an individual strategy to maintain hydration. Consider setting a fluid goal (within any fluid restrictions). Consider the impact of physical activity, cognition and personal preferences.
- Combine drinking with a fun activity, such as 'high tea', 'happy hour' and whānau/family visits (Hart et al 2020).
- Use fluid intake charts only when clinically indicated.

Nutritional

- The Mini Nutritional Assessment provides a treatment guide for assessed level of need.

Māori culture

- Identify surfaces for food, oral medication and inhaled medications only (observe tapu and noa principles). Topical medications should not share the same surface as food.
- Ask what the kaumātua prefers for blessing of food before eating (and who will provide it).
- Find out their preferred place to eat (eg, dining room or sitting in chair rather than 'breakfast in bed').
- Ask about their food and drink preferences when they are sick (as it's important to stay well-nourished and hydrated during this time).

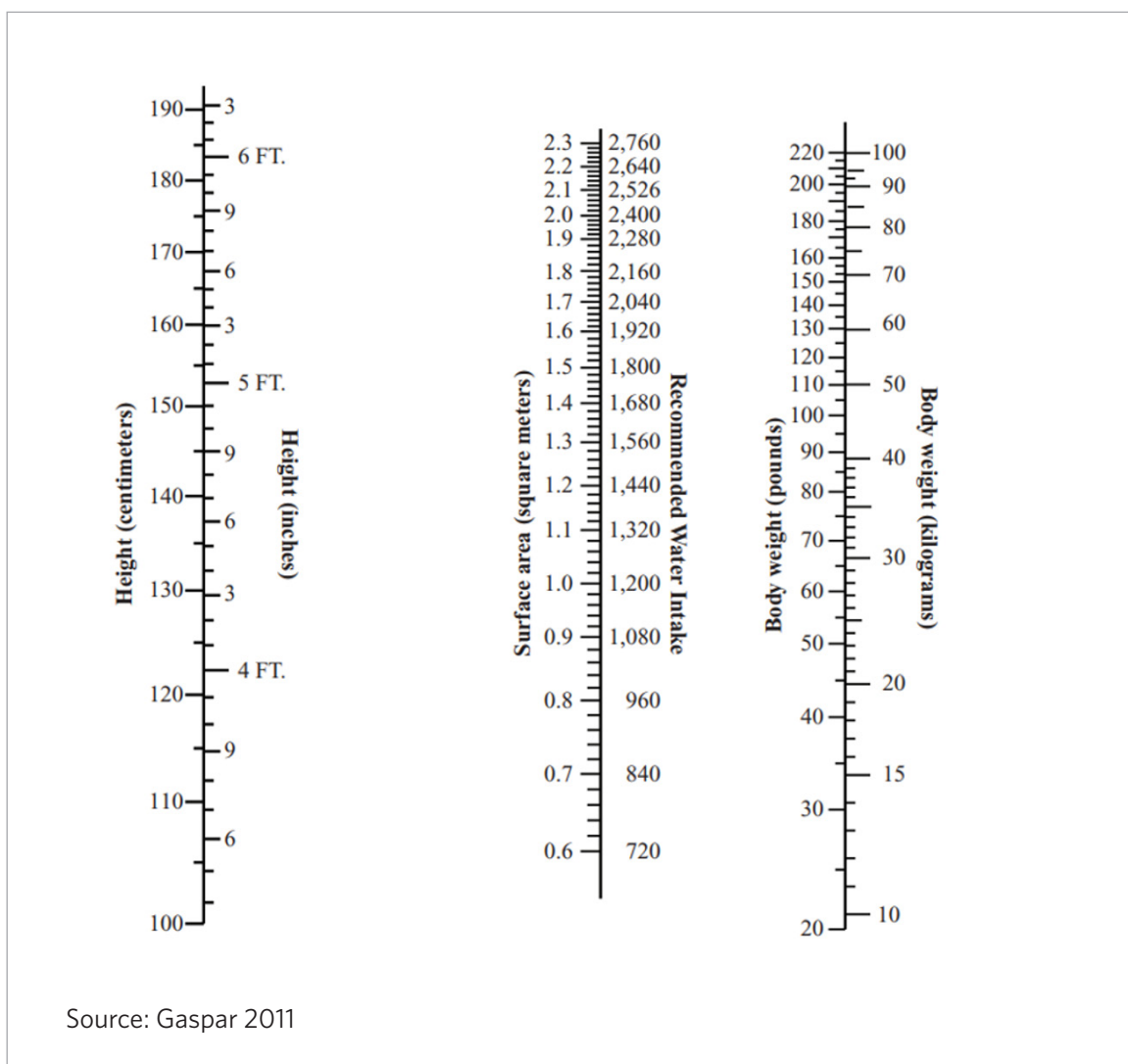
Other cultural preferences

- Ask about traditions, preferences and protocols. Many cultures have food-specific practices.

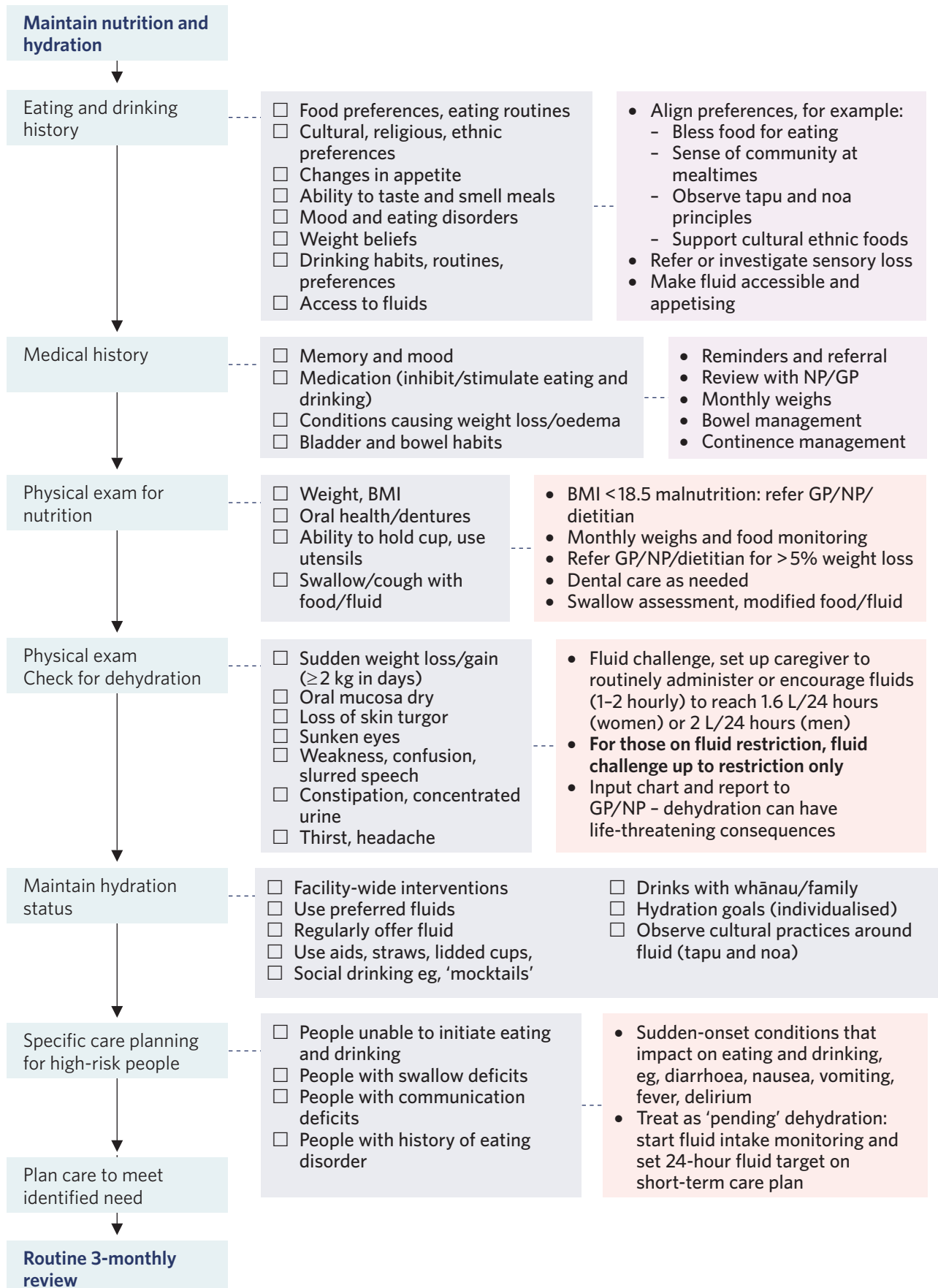
Nomogram:

Recommended water intake in ARC (Gaspar 2011)

- To use the nomogram, find the person's height (left scale) and weight (right scale) draw a line joining the two points, then read the recommended fluid intake off the centre scale.



Decision support



BMI = body mass index

GP = general practitioner

NP = nurse practitioner

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