

Nutrition — in — Advanced Illnesses



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NUTRITION IN ADVANCED ILLNESSES

“I don’t feel like eating” is a common remark made by our loved ones with advanced illnesses.

Common causes include:

- Changes in sense of taste or smell may cause certain foods or drinks to be unpleasant
- Side effects of medication and treatment may result in an uncomfortable eating experience, e.g., constipation, nausea, vomiting, bloatedness
- The illness itself – such as cancer, organ failure – causes loss of appetite. Why this happens is not yet fully understood, but it is related to how the body reacts to the presence of the illness
- Pain from mouth sores, fungal infection (oral thrush)
- Excessively dry mouth from radiation therapy can make eating challenging and uncomfortable
- Chemical imbalances in the blood affecting normal bodily functions, e.g., high calcium levels
- Mood-related issues, e.g., depression. Poorly controlled pain can also contribute to low mood resulting in poor appetite

- Advanced dementia may result in confusion or not recognising food. This may lead to food refusal, loss of interest in food, holding food in mouth instead of swallowing
- Blockage of the body’s food passage
- Difficulties in chewing or swallowing from muscle weakness, lack of teeth

Difficulties swallowing

This is due to the weakening of muscles involved in swallowing or difficulty in coordinating these muscles. It is important to recognise the signs that our loved ones are having difficulty swallowing as measures can be taken to reduce the risk of choking on eating or drinking.

Inform the doctor or nurse if you notice any of these common signs of difficulty swallowing:

- Cough* during/after most meals
- Wet “gurgling” voice after drinking and/or while resting
- Cough* upon eating a specific type of food/drink, e.g., coughs* when eating rice but not porridge
- Prolonged chewing
- Breathlessness during/after a meal
- Keeping food in the mouth and not swallowing
- Complaining of a sensation of something stuck in their throat
- Eating or drinking less than usual

* *Some may clear their throats instead of cough*



Weight loss

As a result of abnormal processing of nutrients by the body in the presence of an advanced illness, your loved one may not be able to build muscle or fat despite eating a fair amount of food. Instead, they may continue to lose significant amounts of weight and muscle.



Improving nutrition and the mealtime experience

In Singapore, food is strongly associated with expressions of love and care. Thus, it is very difficult to see our loved ones no longer enjoy meals specially prepared for them and lose weight despite our best efforts. Although not all causes of appetite and weight loss are reversible, there are factors we need to consider to maximise their nutrition, comfort and quality of life. They are:

1. Understand food preferences

- Your loved one may have enjoyed certain types of food in the past, but their preferences can change – a sambal belacan lover in the past may now prefer plain porridge with simple bland side dishes.
- Be brave and experiment with different herbs and seasonings to enhance flavour and aroma.
- Different temperatures can make the meal more interesting, e.g., hot main meal followed by cold ice cream for dessert.
- Listen to your loved one, observe their responses to food and drinks, and be open to your loved one's changing feedback.

2. Use a suitable consistency (Refer to Annex 1 & 2)

- Food and fluid consistency can affect ease of swallowing. A speech therapist or nurse can guide you in using the most appropriate consistency for your loved one.

3. Keep the mouth fresh and clean

- Remove and clean dentures before and after every meal.
- Continue to brush and rinse their mouth daily for as long as your loved one is physically able to. Use a toothbrush with ultra-soft bristles or an oral swab stick.
- Regular mouth rinses also helps to keep the mouth fresh. A simple homemade mouth rinse uses half teaspoon of table salt dissolved in four cups of warm water. Your loved one can rinse as often as necessary.
- Flavoured ice chips or semi frozen pineapple pieces also help to maintain a fresh mouth.
- Look out for mouth ulcers, sores or patches of red or white which may indicate a fungal infection. Inform the doctor or nurse if you notice such changes.
- Keep a small sipper bottle with their favourite drinks by their bedside to allow frequent sips or a small spray bottle to moisten their mouth.
- If your loved one is no longer able to drink or swallow, use an oral swab stick to gently clean their mouth and apply moisturising mouth gel to keep their mouth moist and clean.

4. Make mealtimes more enjoyable and easier for your loved one

- Have meals in a well-lit environment and help put on your loved one's spectacles if needed to help them appreciate what they are eating.
- Create a relaxing environment to allow enjoyment of food, e.g., in the company of family or friends or play some soft background music.
- Place dishes and cutlery within easy reach.
- Encourage your loved one to eat at the table, or at least out of bed.
- A good upright sitting posture on a chair or being propped up well on a bed helps to prevent regurgitation. It is good to remain upright at least 30 minutes after each meal or snack to prevent gastric reflux.

5. Assist and pace as necessary

- Eating can be tiring for your loved one especially if they are breathless or tire easily to begin with. Take frequent breaks during the meal.
- Ensure your loved one has swallowed the food before feeding the next spoonful.
- Provide small sips of fluid between mouthfuls of food to help clear the food in the mouth.

6. Make food more appealing

- Use a variety of different coloured ingredients in a dish, e.g., mix diced carrots and mashed potatoes with a side of broccoli.

- Use contrasting colours of food and crockery, e.g., serve porridge in a red bowl instead of a white bowl.
- Shape blended or minced food with various kitchen tools, e.g., ice cream scoops, muffin cups, cookie cutters etc., to make food appear more interesting.

7. Serve small meals or snacks throughout the day

- Encourage your loved one to decide when or what they would like to eat.
- He or she may tolerate 5 to 6 small meals a day better than 3 large meals.
- Small servings may look less intimidating. You can always top up with more food if they are still hungry.
- If nausea is present, remember to serve the nausea medication at least 30 minutes before a meal, or as advised by the doctor.

8. Make every mouthful of food count

- Increase calories and protein content in meals, e.g., add sesame oil, egg, fish or tofu into porridge; add peanut butter or tuna to biscuits; add oral nutritional supplements to milkshakes.
- Provide high calorie, high protein snacks, e.g., red or green bean soup, sesame paste, bubur cha cha, bao, beancurd.
- Provide nourishing fluids, e.g., soya milk; full cream or flavoured milk; oral nutritional supplements; fruit smoothies; yoghurt drinks; adding milk, ice cream or honey to beverages.

9. Avoid drinking too much fluid with meals

- Fluid, especially fizzy drinks, may cause your loved one to feel full or bloated very quickly.
- Unless your loved one is taking fluid meal replacements, take sips of fluids during meals only to clear the palate.

Allow your loved one's body to guide you in the amount of food and fluids to feed. Force-feeding will only cause distress both to yourself (as the caregiver) and your loved one. It can also cause physical discomfort or pain. The goals of eating are to maximise enjoyment of food and eating as and when your loved one is able to tolerate – even if it means only one or two spoonful of their favourite food just for tastes.

ANNEX 1

Modified fluid consistency





If your loved one has difficulty swallowing, you may be advised to modify the consistency of the fluid he or she drinks. This also applies to clear soups, liquid desserts and watery porridge. A thicker consistency fluid moves more slowly through the mouth, allowing better control of the fluid during swallowing. While this will not totally prevent choking or accidental swallowing into the lungs, it is believed that the risk will be reduced.

Commercially-available powder thickeners can be bought from pharmacies. There is usually a table on the packaging to inform you how much powder to add to thin fluids (e.g., plain water, coffee, tea) to thicken to the recommended consistency. Do note that some thickeners do not keep the fluid thickened for a long period. Always check the consistency of the fluid again before giving it to your loved one. If need be, medications can be either given in a syrup form or pills can be crushed and mixed with the appropriately thickened fluid.

It is also good to be able to estimate the “thickness” of the fluid using The Fork Test, as there may be situations where small amounts of fluid or syrup needs to be thickened. The Fork Test is done with the fork dipped into the fluid, then examined while held up at a 45-degree angle.

Your loved one may be resistant to using thickeners with water or their usual drinks. It may be more acceptable to them to drink naturally thickened fluids. Some examples are given in the table below.

Fluid Consistency	The Fork Test
Thin fluid	Fluid that is not thickened. It runs quickly through the prongs of the fork, leaving little or no coating on the fork
Nectar thick	Fluid drips quickly through the prongs of the fork and leaves a thin coating on the fork
Honey thick	Fluid forms a web between the prongs of the fork and drips slowly through them
Pudding thick	Fluid holds well together and remains on the fork, does not drip through the prongs of the fork

Examples	Picture
Milo, tea, water, coffee	
Thick barley drink, mango juice, pumpkin soup	
Honey, papaya milkshake, black sesame paste	
Thick plain yoghurt, soft jellies, grass jelly (drain away syrup), mango pudding	

Modified solid foods

In general, softer and easy to chew foods are more manageable by the elderly or if the person is unwell. When swallowing becomes a challenge, the healthcare professionals may suggest that food prepared for your loved one be in one of the four common consistencies:

1. Normal diet or diet of choice

- This refers to regular foods with no specific size or textures
- Biting and chewing will be required
- There may be a mixture of consistencies, e.g., noodles in soup

2. Coarsely chopped or easy-chew

- Foods in this category are usually soft in texture and cut up to about 3 cm to 4 cm cubes
- Some chewing will still be required to break down the food
- More gravy or a slightly longer cooking time will help to soften the food

3. Finely minced or soft-moist

- Foods are soft, moist and minced (about 0.3 cm to 0.5 cm)
- If buying meat from the butcher, request for meat to be minced finely for baby food
- Minimal chewing is required

4. Blended diet

- Food is pureed till smooth and lump-free
- No chewing is required
- A blender is required for food preparation
- It should not be too watery or too sticky

Diet suggestions

Blended	Finely minced/ soft-moist	Coarsely chopped/ easy-chew	Normal diet
Breakfast			
<ul style="list-style-type: none"> • Blended oats • Blended porridge • Yoghurt • Blended tau suan or green bean 	<ul style="list-style-type: none"> • Scrambled egg • Mee sua (cut up) • Kway teow (cut up small) • Chee cheong fun (cut up small) • Lontong (cut up) 	<ul style="list-style-type: none"> • Carrot cake • Chwee kueh • Chee cheong fun • Soft bread with jam • Bao • Thosai 	<ul style="list-style-type: none"> • Fried bee hoon • Roti prata • Burgers • Sandwiches • Nasi lemak

Blended	Finely minced/ soft-moist
Lunch	
<ul style="list-style-type: none"> • Cream soups • Pureed vegetables e.g., pumpkin, carrot, corn • Mashed potato • Blended meat or fish (blend with gravy) • Blended chawanmushi 	<ul style="list-style-type: none"> • Finely chopped soft vegetables, e.g., cauliflower, broccoli, carrot • Dhal curry • Chawanmushi
Dinner	
<ul style="list-style-type: none"> • Blended porridge • Mashed potato • Pureed root vegetables • Cream soup • Orh nee 	<ul style="list-style-type: none"> • Minced meat • Minced leafy or root vegetable • Hummus • Congee
Supper or Snacks	
<ul style="list-style-type: none"> • Jelly/Jello • Milkshake • Mousse cake • Ice cream • Smoothie • Plain yoghurt • Sesame or red bean paste 	<ul style="list-style-type: none"> • Cheng tng • Bubur hitam • Soft fruits (coarsely mashed) • Soya beancurd • Bread dipped in coffee • Milo • Fruit yoghurt

Coarsely chopped/ easy-chew	Normal diet
Lunch	
<ul style="list-style-type: none"> • Minced meat • Soft tofu • Steamed oily fish • Shepherd's pie • Noodles (cut up) • Fish and chips • Chicken nuggets 	<ul style="list-style-type: none"> • Beancurd (tau kua) • Boiled eggs • Grilled oily fish e.g., salmon • Stewed/curry meat • Chapatti with dhal • Chicken chop
Dinner	
<ul style="list-style-type: none"> • Sweet and sour soup • Steamed fish fillet with gravy • Thinly sliced meat with leafy, green vegetables • Appom 	<ul style="list-style-type: none"> • Tauhu telur • Takoyaki • Leafy vegetables • Idli • Chicken satay
Supper or Snacks	
<ul style="list-style-type: none"> • Soft fruits (cut to bite size) • Cheesecake • Pandan cake 	<ul style="list-style-type: none"> • Egg tart • Peanut pancake • Kueh lapis • Mini fruit tart • Digestive biscuits • Curry puff

Other important considerations:

1. If using Milo or other thin fluids to soften bread or biscuits, do remember to thicken the fluid to the appropriate consistency beforehand and drain excess fluid before feeding.
2. Avoid mixed consistencies (solid + liquid). Mixed consistencies in one mouthful of food is challenging to manage if your loved one has a swallowing impairment. For example, if serving bee hoon in soup with minced meat and chopped vegetables, drain away the soup when feeding the bee hoon. Feed the minced meat and chopped vegetables separately.
3. When feeding porridge or oats, enzymes from the saliva on the spoon can gradually cause the food to become more watery. Avoid stirring the food with the same spoon being used to feed your loved one. Instead, scoop from the sides of the bowl.

ANNEX 2

The following recipes are examples of how one dish can be modified to suit all four consistencies. Once you are familiar with the modification process, you can cook then modify most dishes as needed for your loved one.



Soy Sauce Chicken with Ginger and Capsicum

Ingredients

Ingredients	Quantity
Chicken breast, diced	2 pieces
Ginger	6 slices
Garlic, peeled and finely chopped	2 cloves
Small onion, peeled and diced	1
Red capsicum*, seeds removed and diced	1/2
Green capsicum*, seeds removed and diced	1/2
Cooking oil	1 Tbsp
Light soy sauce	1 Tbsp
Dark soy sauce	1/2 tsp
Sugar	1/4 tsp
Chicken broth	1/2 cup
Corn flour slurry	1 Tbsp corn flour and 2 Tbsp water
Coriander	To garnish

Nutrition Information

Servings: 2
Serving size: 313 g

Each serving (313 g) contains:

Calories: 290 kcal
Carbohydrates: 18 g
Protein: 29 g



Modified consistency instructions:

**Remove capsicum skin for easy-chew, soft-moist and blended consistencies. To do this, boil capsicum for 5-10 minutes and then submerge in ice water. The skin can be peeled off easily after cooling.*

Normal (*before cooking*) Dice chicken breast into bite-sized pieces.

Coarsely chopped/easy-chew (*before cooking*) Cut chicken breast and capsicums into small pieces (about the size of your thumbnail).

Finely minced/soft-moist (*after cooking*) Remove ginger before blending dish with a blender in pulses. Dish should be finely minced.

Blended (*after cooking*) Remove ginger before blending dish till smooth and lump-free. Add gravy into blend as needed.

Cooking instructions:

1. Heat up oil in a non-stick pan and stir-fry ginger, garlic, onion and capsicum until fragrant.
2. Add chicken pieces and stir-fry for two minutes before adding light and dark soy sauce, sugar, and chicken broth. Continue to stir-fry until evenly mixed.
3. Cover pan with a lid and allow to simmer on medium heat for 15 minutes. Stir occasionally to prevent burning.
4. Mix in corn flour slurry slowly to thicken gravy.
5. Garnish with coriander before serving.

Steamed Egg Tofu with Spinach

Ingredients	Quantity
Medium eggs	2
Silken tofu* (sliced thinly / blended)	½ box or 150 g
Spinach	100 g
Pepper	¼ tsp
Salt	¼ tsp
Sesame oil	½ tsp
Chicken broth	¼ cup

Modified consistency instructions:

Normal (*before cooking*) Use sliced tofu.

Coarsely chopped/easy-chew (*before cooking*) Use sliced tofu.

Finely minced/soft-moist (*after cooking*) Use blended tofu.

Blended (*after cooking*) Use sliced tofu for cooking. After cooking, blend steamed egg and tofu mixture before proceeding with Step 6.

Cooking instructions:

1. Fill pot with water and add 2 drops of oil. Boil the spinach for 3 minutes (or till soft). Coarsely chop boiled spinach.
2. Blend spinach with chicken broth until a smooth texture is achieved.
3. Break the eggs into a bowl. Measure and add ¼ cup water into the bowl. Add salt, pepper and sesame oil to taste. Beat until evenly mixed.
4. Place tofu in a deep dish, then pour the beaten egg mixture in.
5. Steam the tofu and egg mixture for 10 minutes or until egg mixture is firm. Partially cover the deep dish with a lid during the steaming.
6. Pour spinach over tofu and egg mixture. Smoothen out the spinach layer. Steam for another 2-3 minutes and serve hot.

Nutrition Information	Each serving (201 g) contains:
Servings: 2	Calories: 139 kcal
Serving size: 201 g	Carbohydrates: 6 g
	Protein: 11 g

Persimmon and Barley Dual Dessert

Ingredients	Quantity
Ripe persimmon (skin removed)	1
Barley	100 g
Honey	1 Tbsp

Modified consistency instructions:

This dessert requires blending, which creates a dessert suitable for all prescribed consistencies.

Avoid using Holland Barley as it is too starchy and will not blend easily.

Cooking instructions:

1. Boil barley until soft. Keep some barley water aside for blending the barley later.
2. Blend persimmon into a puree, until smooth and lump-free. Set persimmon puree aside in the fridge.
3. Blend barley with honey and pour into a dessert cup or bowl. Add barley water as necessary to get a smooth, lump-free consistency.
4. Pipe in and layer persimmon puree over the barley puree.
5. Served either chilled or warm.

Nutrition Information	Each serving (130 g) contains:
Servings: 2	Calories: 261 kcal
Serving size: 130 g	Carbohydrates: 56 g
	Protein: 8 g

Smoothies

Banana and Cinnamon Soya-shake

Ingredients	Quantity
Banana (large)	1
Soya milk (or high calcium soya milk)	250 ml
Honey	2 Tbsp
Ground cinnamon	1 pinch

Sweetie Smoothie

Ingredients	Quantity
Honeydew	100 g
Mango (peeled and cubed)	1
Milk* (or full fat milk)	50 ml

Kiwi Lassi

Ingredients	Quantity
Kiwi (peeled)	1
Plain yoghurt* (or full fat yoghurt)	10 g
Honey	1 tsp
Cold water	50 ml
Crushed ice	½ cup

Very Orange Smoothie

Ingredients	Quantity
Papaya	20 g
Orange (peeled, deseeded)	½
Plain yoghurt* (or full fat yoghurt)	15 g
Honey	1 Tbsp
Lemon juice	1 tsp

Preparation instructions

1. Blend ingredients together until smooth.
 2. Best served chilled. Smoothies can be stored in the refrigerator but they are best consumed fresh because flavour and nutrients are lost over time.
- * *To prepare a modified texture fluid consistency, increase or reduce liquid quantity to thin out or thicken the consistency of smoothie.*
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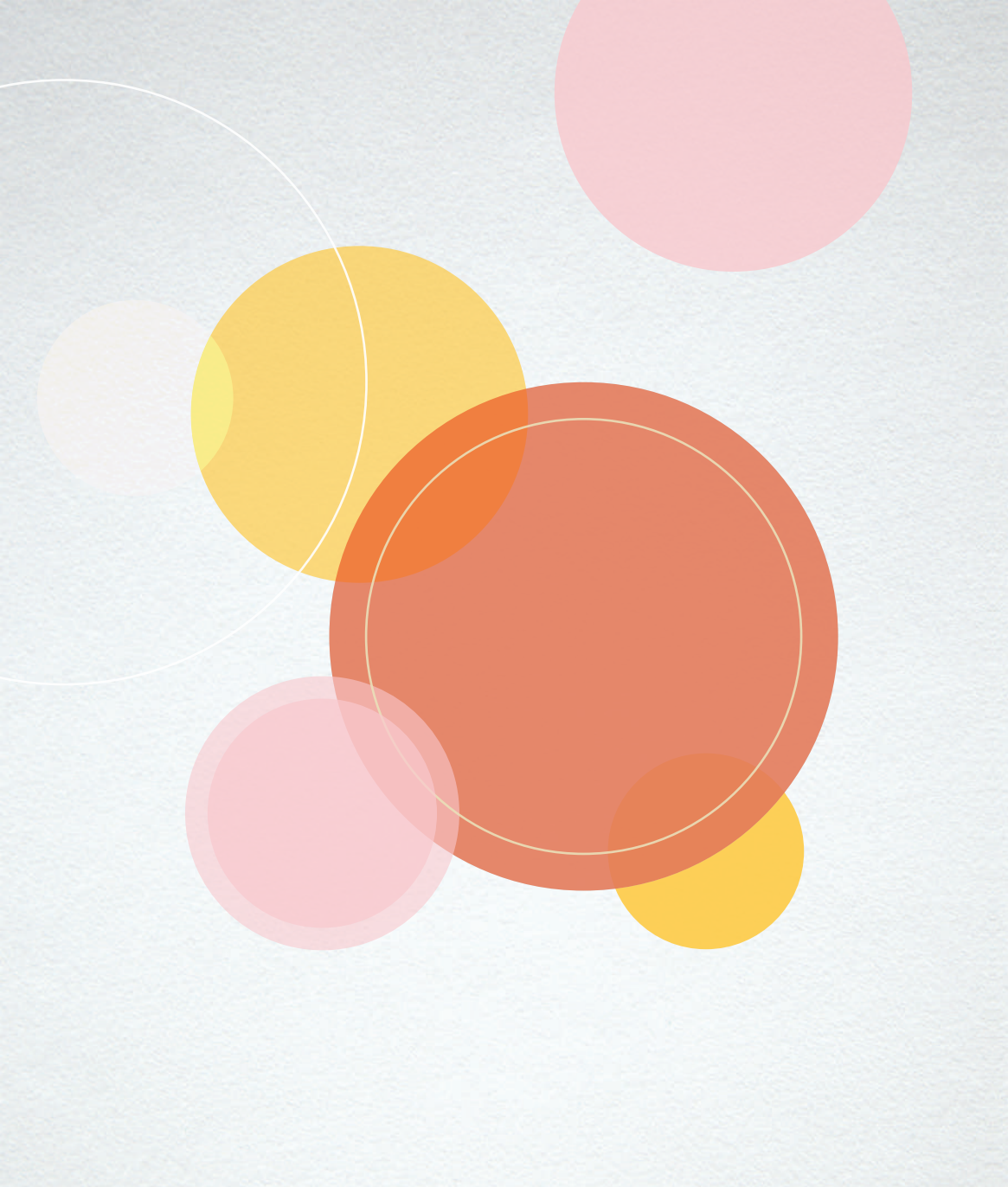
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