

Nutrition at the End of Life

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Caring for patients • community • environment • staff

Disclaimer

- References to food or commercial products are provided as examples and for informational purposes only; they do not constitute or imply an endorsement, recommendation or favouring by Yishun Health.

Content

- Changes in a person's appetite and nutrition across the trajectory of illness and at the end-of-life
- Finding a balance between maintaining nutrition and understanding anorexia at the end-of-life
- Types of nutritional supplements and their usage

Meaning of food



Physical



Psychological



Comfort, Pleasure



Culture, Tradition, Family



Socialization

Many people stop eating and drinking at the end of life because of....



Body's energy needs
slow down



Discomfort



Digestive problems



Tiredness, reduced
consciousness



Inability to sit upright



Short of breath

Anorexia and Cachexia

- Anorexia

= loss of appetite or desire to eat

- Cachexia

= multifactorial syndrome, may or may not be associated with anorexia, along with significant weight loss, loss of muscle tissue as well as adipose tissue, and generalize weakness

Common issues affecting eating and drinking



Dry mouth and lips



Mouth ulcers



Sore throat



Swallowing difficulties
(Dysphagia)



Nausea, vomiting



Changes in smell



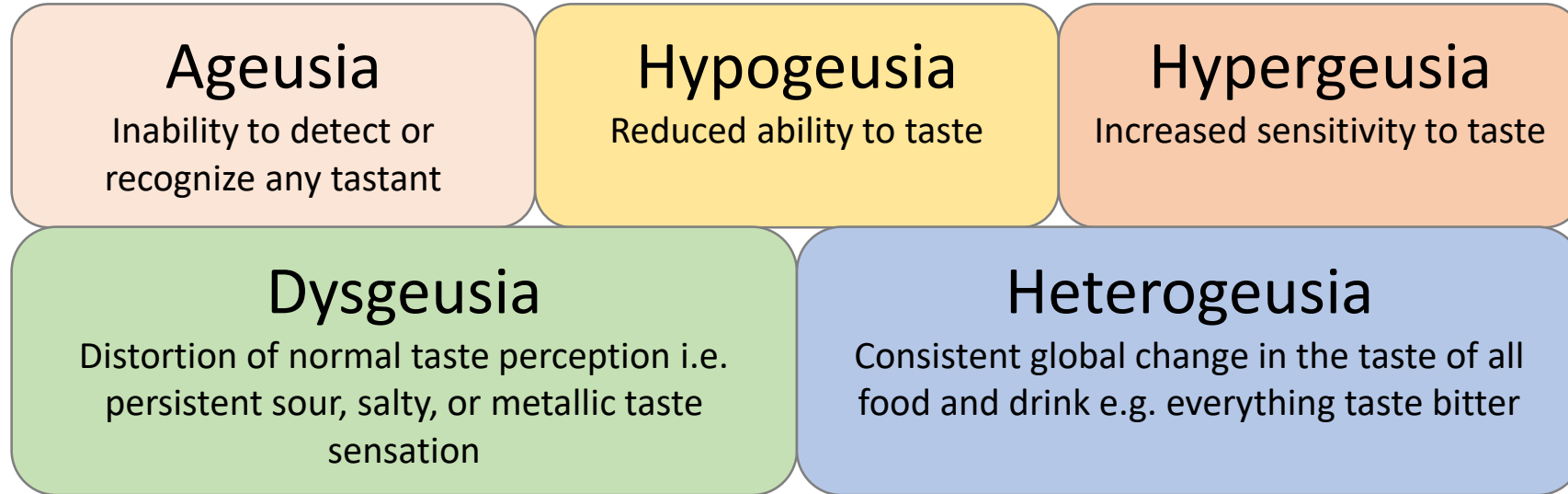
Changes in taste

Palliative care assessment of dry mouth: what matters most to patients with advanced disease?

Michelle Fleming¹ · Cheryl L. Craigs¹ · Michael I. Bennett¹

- 135 patients completed questionnaire
 - 60.7% female
 - Age range 32-92 years, mean age 71 years
 - 77% had diagnosis of malignancy
 - Lung (18.5%), breast (8.9%), colorectal (7.4%)
 - 12% had COPD
- 83% reported dry mouth
- Dry mouth Severity: 84.4% rated moderate or severe
- Interference with talking, eating or taste
 - Talking 75.6%
 - Eating 61.2%
 - Taste 59.7%
 - No interference 13.3%
- Self-management
 - 97% needed interventions to help keep mouth moist
- Other concerns
 - 24.6% mentioned their lips, throat or nasal passages were also dry
 - 15% mentioned it woke them up at night
 - 15% mentioned their dry mouth affected their swallow and resulted in a change in diet, reduction in intake of food and even drinks
 - 7.6% mentioned they felt the cause may have been due to medications

Changes in taste



- Taste and smell changes are common in patients with cancer perhaps due to the disease itself, drugs, or antitumor treatments (radiotherapy, chemotherapy, or combined therapy)
- A study reported 16% abnormal taste (e.g. metallic), 16% decreased taste, 7% increased taste and 10% decreased sense of smell
- Other studies reported 42-46% smell and/or taste changes

Dysphagia

- Difficulty swallowing certain foods or liquids, which means it takes more time to move food or liquid from your mouth to your stomach
- May include signs of coughing or choking when eating or drinking
- May need texture modified diet or thickened fluids
- Associated with lower quality of life and nutritional difficulties
- Incidence as high as 79% in palliative phase



Nausea and Vomiting

- Nausea is a very common symptom in palliative care patients
 - 6-68% in patients with advanced cancer
- Causes of nausea and vomiting
 - Side effect of some medication
 - Certain treatments e.g. chemotherapy
 - The disease itself
 - Unpleasant smells and tastes
 - Constipation and bowel obstructions
- Management of nausea
 - Treat constipation
 - Stop / change certain medications
 - Avoid unpleasant smells
 - Eat small frequent meals
 - Sip fluids throughout the day
 - Cold or room temperature foods may be more palatable
 - Fresh air

Good oral care is important

Eating and Drinking Considerations

- Food preference, comfort food
- Food presentation
- Portion size of food
- Food temperature
- Taste (sweet, sour, salty, bitter, umami)
- Food texture
- Fluid consistency
- Timing of meals
- Ability to self feed

Everyone's "comfort food" is
different

Cold foods may be better tolerated

- Especially for those with dry mouth and lips
- Food examples:
 - Ice cream, sorbet, gelato, potong ice cream, popsicles
 - Milk shakes, iced tea/coffee/Milo
 - Fruit juice, fruit-infused water
 - Yogurt drink, cultured milk (e.g. Yakult, Vitagen)
 - Ice chips

Food texture and flavours

- Explore different food textures that are easier to eat e.g. porridge, congee, scrambled egg, French toast, sponge cake, mashed potato, pureed carrot, pudding
- Explore different food ingredients to give different flavours e.g.
 - Herbs and spices
 - Spicy taste e.g. ginger, chilli, sambal belacan
 - Sweet taste e.g. chocolate, jelly
 - Sour taste e.g. lemon, tamarind, sour plum
 - Salty taste e.g. taucheong, soya sauce, chilli sauce
 - Umami taste e.g. mushroom, seaweed, ikan bilis

Food Fortification

Nutrient	Food examples
Carbohydrates	Honey, Kaya, Peanut butter, Chocolate spread, Jam, Condensed milk, Chocolate sauce, Fresh fruits, Dried fruits
Protein	Meat floss, Braised peanuts, Milk powder, Soyabean milk, Full cream milk, Cheese, Eggs, Tuna, Sardine, Yogurt
Fats	Butter, Margarine, Mayonnaise, Coconut milk, Sesame oil, Olive oil, Avocado

Fortification Ideas

Food	Add with....
Cream cracker, Biscuit, Bread	Honey, Kaya, Peanut butter, Jam, Chocolate spread, Butter, Margarine, Mayonnaise, Cheese, Tuna, Sardine, Eggs
Oats	Honey, Condensed milk, Fresh fruits, Dried fruits, Yogurt, Soyabean milk, Full cream milk
Porridge	Sesame oil, Meat floss, Egg, Fish, Braised peanuts, Fried shallots, You tiao, Minced meat
Coffee, Tea, Malted drinks (e.g. Milo, Horlicks)	Soyabean milk, Full cream milk, Condensed milk, Milk powder, Oral nutritional supplements
Dessert (e.g. pulut hitam, red bean soup)	Coconut milk, milk, soyabean milk
Noodles	Sesame oil, Fried shallots
Cream Soup	Full cream milk, Cream
Curry	Yogurt, Full cream milk
Spaghetti	Cheese

Sources of fluids

- Water, flavoured water (e.g. with lemon and cucumber slices, mint)
- Coffee, tea, malted drinks (e.g. Milo, Horlicks), Chinese tea, Herbal tea, chicken essence
- Milk, soyabean milk, yogurt drinks
- Juice, fizzy drinks (e.g. 100Plus, Sprite), oriental drinks (e.g. chrysanthemum tea, winter melon tea, bandung), barley, bubble tea
- Soups (e.g. clear soups, cream soups)

Snacks ideas

- Dim sum e.g. egg tart, siew mai, dumpling, bao, yam cake
- Kuih and cakes e.g. cream cakes, Swiss roll, muffin, gulab jamun, waffles, sausage bun, kuih lapis, pisang goreng, samosa
- Desserts e.g. soyabean curd, pulut hitam dessert
- Convenience foods e.g. instant desserts, instant porridge, canned soup, frozen soup, baby food

What are Oral Nutritional Supplements (ONS)

- ONS are typically used in addition to the normal diet, when diet alone is insufficient to meet daily nutritional requirements, and for those at high risk of malnutrition
- They provide energy along with other essential macronutrients and micronutrients.
- Most standard ONS provide about 200-300kcal, 9-12g protein and a full range of vitamins and minerals per serving
- ONS come in a range of
 - Styles (milk, juice, yogurt, dessert, savoury)
 - Formats (liquid, powder, pudding, pre-thickened)
 - Types (high protein, fibre containing, low volume)
 - Energy densities (1-2.4kcal/ml)
 - Flavours

Types of ONS

Standard formula



Ensure	Boost Isocal	Ensure Life
0g fibre	0g fibre	2.5g fiber
<ul style="list-style-type: none"> • 1.0 kcal/ml, isocaloric • Complete and balanced nutrition 		

Higher Energy



Ensure Plus, Resource Plus, Pulmocare and Fortisip	Fresubin 2kcal and Resource 2.0
1.5 kcal/ml	2kcal/ml
200-237ml per packet	200-237ml per bottle
12-18g protein/ packet	20g protein
<ul style="list-style-type: none"> • Complete and balanced nutrition • Low residue 	

Higher Fiber



Jevity	Fibersource	Diben
1.0 kcal/ml	1.2 kcal/ml	1.5 kcal/ml
250ml/can	237ml/packet	200ml/bottle
3.2g fiber/can	3.6g fiber/packet	4.0g fiber/bottle

Juice-based



Resource Fruit	Fortijuice
1.0 kcal/ml	1.5 kcal/ml
237ml per packet	200ml per bottle
<ul style="list-style-type: none"> • Fat-free • Low residue • Not complete nutrition • Clear feed 	

Types of ONS

Diabetes



Glucerna and Nutren Diabetes	Diben
1.0 kcal/ml	1.5 kcal/ml
237-250 ml per can	200ml per bottle
3.2-4.5g fibre per can	4.0g fibre per bottle
<ul style="list-style-type: none"> Complete and balanced nutrition 	

Renal



Novasource Renal / Nepro HP	Nepro LP / Fresubin Renal
1.8 - 2.0kcal/ml	1.8 - 2.0kcal/ml
High protein: 16.6 - 21.6g protein per serving	Low protein: 6 - 9.9 g per serving
For dialysis patients	For pre-dialysis patients
<ul style="list-style-type: none"> Low electrolytes: Na, K+, PO4 High osmolarity 	

Protein Powder



- Modular Formula
- Used as an additional source of protein

Food & Drink Thickener



- Not a source of nutrition
- Used to thicken up food and fluids

Other considerations



Eat and drink anytime



Drinks and snacks within easy reach



Use appropriate utensils, some may find drinking through straw difficult



Sit upright / prop up to eat



Some need help with eating and drinking



Eat with family

Common concerns

My loved one is not eating enough.

Towards the end of life, it is common to eat less as the person does not feel hungry or thirsty. Providing good food may be an important way to show love and care. However if the person does not feel hunger and does not desire food, it is not necessary to feed.

What food should be avoided as my loved one has diabetes / high blood pressure / high cholesterol levels etc?

Towards the end of life, most of the chronic medications will be stopped or reduced, especially if the person does not eat or drink much. There is no need to restrict diet unless it causes discomfort.

Common concerns

Whatever we cook or buy, he / she only eats a few spoonfuls.

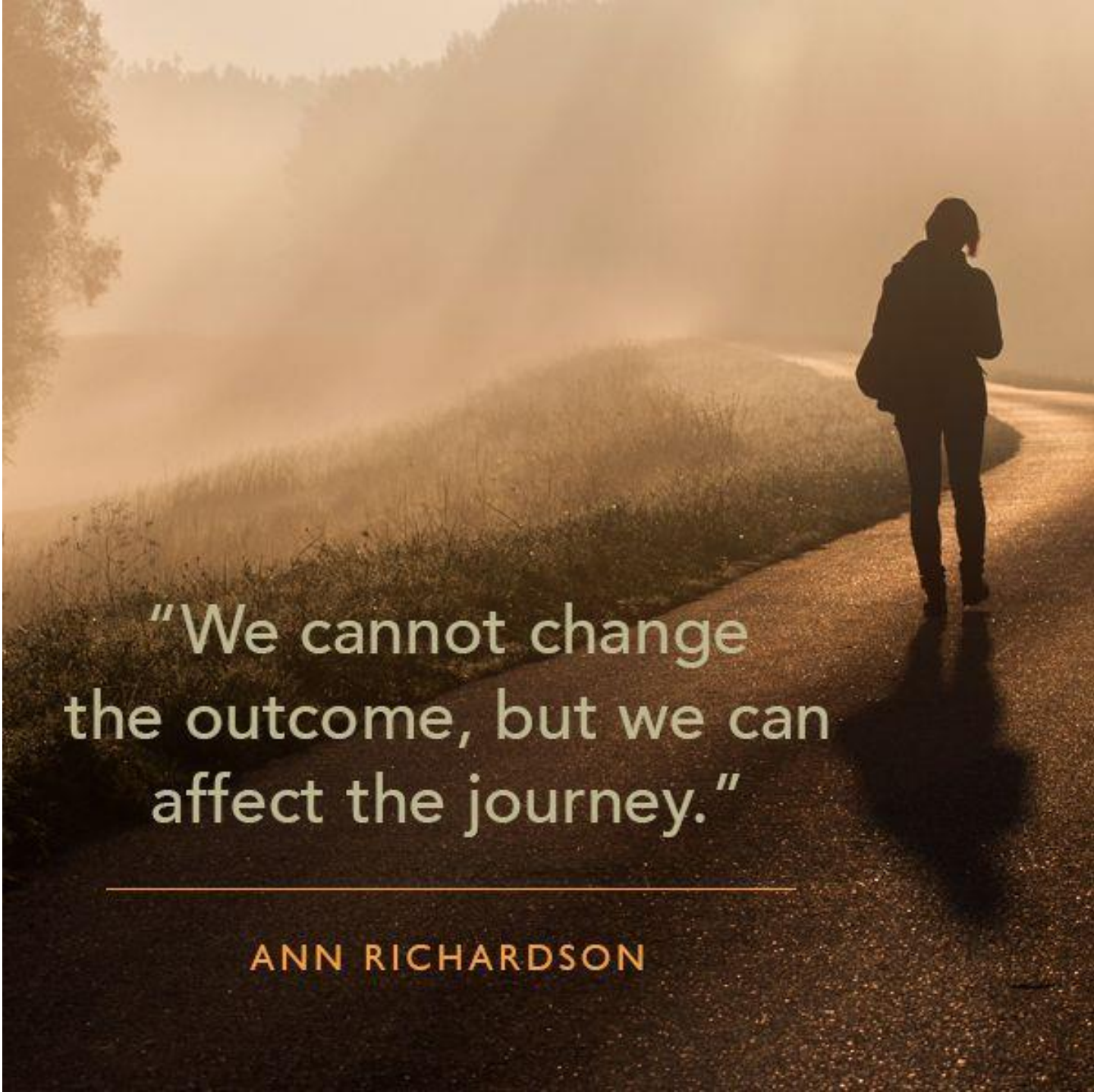
It is not easy being a caregiver to someone at the end of life. Meal times can be stressful as well. Remember that your loved one may be tired, uncomfortable, or just do not feel hungry. Offer food and drinks when he / she is ready. You can consider stocking up on nourishing fluids, snacks or easy-to-prepare meals so that less time is spent on preparing the food, and more time can be spent caring for your loved one.

Is it enough to drink nutritional supplements only?

Offer food first as this is more familiar and provide a source of comfort for most people. Oral nutritional supplements may be useful as a supplement or an easy-to-prepare beverage.

A long, straight asphalt road stretches from the foreground into the distance, leading towards a dramatic sunset. The sky is filled with dark, heavy clouds that are illuminated from below by the setting sun, creating a vibrant orange and yellow glow. The sun is a bright, glowing orb positioned centrally in the upper half of the frame. The road has a yellow dashed center line and white solid edge lines. The surrounding landscape is arid and sparsely vegetated with low-lying shrubs and dry grass. The overall mood is contemplative and serene.

When the end is near,
the goal of care is
COMFORT



"We cannot change
the outcome, but we can
affect the journey."

ANN RICHARDSON

Thank you



Caring for patients • community • environment • staff