# Nutrition and hydration |

# Te taioranga me te miti wai

# Seek family involvement at meal times

## Identify and rule out contributing causes

- Environmental issues
- Food preferences food and fluid of choice
- Dentition and oral health
- Dysphagia/SLT referral
- Mental health depression?
- Faecal impaction

- Infection UTI/URTI/GI
- Decline in ADL/mobility
- Requires increased assistance
- Medication iatrogenic causes
- Underlying pathology GI disturbance.

# Common risk factors for malnutrition and dehydration

- Physical limitations: difficulty obtaining and preparing food, manual dexterity
- Sensory perception: decreased sense of taste and smell, impaired vision and hearing
- Socioeconomic: isolation, bereavement, lack of nutritional knowledge, poverty, institutionalisation
- Food restrictions: self-imposed or due to health conditions
- Acute illness, diarrhoea and vomiting
- Oral health/hygiene problems (dentures, tooth loss or poor dental health)
- Impaired ability to chew and swallow, or dysphagia
- Medication

- Drugs and alcohol
- Chronic disease processes
- Underlying pathology
- Gl disturbances/faecal impaction
- Decreased thirst
- Cognitive impairment/ confusion
- Decreased motivation, fatigue or apathy
- Requiring assistance with foods and fluids
- Older age
- Mental health depression
- Incontinence.

# Signs of malnutrition

- Lack of appetite or interest in food or drink
- Tiredness and irritability
- Inability to concentrate
- Always feeling cold
- Loss of fat, muscle mass and body tissue
- The cheeks appear hollow and the eyes sunken, as fat disappears from the face
- Higher risk of complications after surgery

- Longer healing time for wounds
- Higher risk of getting sick and taking longer to heal
- Breathing becomes difficult
- Skin may become thin, dry, inelastic, pale and cold
- Hair becomes dry and sparse, falling out easily.

#### Nutrition assessment and treatment



### Regular monthly weighs

# Indicators for poor nutrition

- Weight loss > 5% in past 3 months MNA® < 11 (next page)</li>
- BMI ≤ 21 (next page)
- Patient leaving 25% food each meal; assess over 7 days and use food intake chart
- Patient acutely unwell no food intake > 5 days



#### Assess nutrition risk

See screening tool on next page

# Notify GP/NP

# First line treatment

- Treat contributing factors, eg, constipation
- Implement basic oral nutrition support; small, nutrient dense, frequent meals and snacks; extra assistance or prompting to eat; food charts; fortified meals
- Weekly weighs for 4 weeks
- Reassess if weight loss continues, move to second line treatment



### Refer to dietitian

### Continue weekly weighs

# Second line treatment

- Contact GP/NP who may follow up with the following investigations: thyroid/FBC/serum transferase/albumin
- SLT referral, if appropriate
- Dietitian referral, if not already done
- Discuss at multidisciplinary meeting
- Increase energy and protein intake with nutritious fluids



### Reassess - if weight loss continues;

move to third line treatment

# Third line treatment

- Continue to monitor
- Consider referral to medical specialist

## Refusal to eat

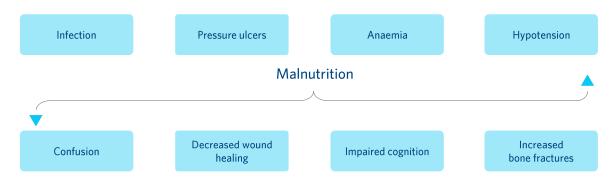
- Assess personal preferences and whether the resident is enjoying their meals
- Discuss care plan with the family/whānau/EPOA
- Guidelines for a palliative approach to residential aged care (Australian Government Department of Health and Ageing 2006).

# Use mini nutritional assessment (MNA®) below

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

A	Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?  0 = severe loss of appetite  1 = moderate loss of appetite  2 = no loss of appetite	Score	enter
В	Weight loss during past 3 months  0 = weight loss greater than 3 kg  1 = does not know  2 = weight loss between 1 kg and 3 kg  3 = no weight loss	Score	enter
С	Mobility?  0 = bed or chair bound  1 = able to get out of bed or chair but does not go out  2 = goes out	Score	enter
D	Has suffered physical stress or acute disease in past 3 months?  0 = yes 2 = no	Score	enter
E	Neuropsychological problems?  0 = severe dementia or depression  1 = mild dementia  2 = no psychological problems	Score	enter
F1	Body mass index (BMI) (weight in kilos)/(height in metres) $0 = BMI < 19$ $1 = BMI 19 \text{ to } < 21$ $2 = BMI 21 \text{ to } 23$ $3 = BMI > 23$	Score	enter
	If BMI is not available, replace question F1 with question F2. Do not answer question F2 if question F1 is already completed.		
F2	Calf circumference (CC) in cm  0 = CC less than 31  3 = CC 31 or greater	Score	enter
	Screening score (subtotal max 14 points) 12-14 points: Normal nutritional status 8-11 points: At risk of malnutrition 0-7 points: Malnourished	Total score	enter

# Consequences of malnutrition in the elderly



### Calculating healthy weight/height range



## Estimating height from ulna length

Measure between the point of the elbow (olecranon process) and the midpoint of the prominent bone of the wrist (styloid process) (left side if possible).

E E	Men(<65 years) Men(>65 years)	1.94	1.93	1.91	1.89	1.87	1.85	1.84	1.82	1.80	1.78	1.76	1.75	1.73	1.71
哥)	Men(>65 years)	1.87	1.86	1.84	1.82	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.67
	Ulna length(cm)	32.0	31.5	31.0	30.5	30.0	29.5	29.0	28.5	28.0	27.5	27.0	26.5	26.0	25.5
품	Women (<65 years)	1.84	1.83	1.81	1.80	1.79	1.77	1.76	1.75	1.73	1.72	1.70	1.69	1.68	1.66
単ち	Women (>65 years)	1.84	1.83	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.66	1.65	1.63
m (H	Men(<65 years) Men(>65 years)	1.69	1.67	1.66	1.64	1.62	1.60	1.58	1.57	1.55	1.53	1.51	1.49	1.48	1.46
量さ	Men(>65 years)	1.65	1.63	1.62	1.60	1.59	1.57	1.56	1.54	1.52	1.51	1.49	1.48	1.46	1.45
	Ulna length(cm)	25.0	24.5	24.0	23.5	23.0	22.5	22.0	21.5	21.0	20.5	20.0	19.5	19.0	18.5
まる	Women (<65 years) Women (>65 years)	1.65	1.63	1.62	1.61	1.59	1.58	1.56	1.55	1.54	1.52	1.51	1.50	1.48	1.47
ĕ.₽	Women (>65 years)	1.61	1.60	1.58	1.56	1.55	1.53	1.52	1.50	1.48	1.47	1.45	1.44	1.42	1.40

### **BMI** chart

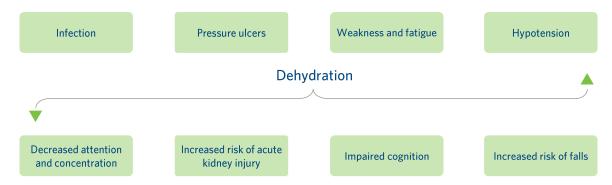
WEIGHT Ibs	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
kgs	45.5													75.0										97.7
HEIGHT in/cm		Unde	erweig	ht			Heal	thy				Over	weigh	ıt			Obes	se			Extre	mely	obese	8
5'0" - 152.4	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5'1" - 154.9	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
5'2" - 157.4	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	38	39
5'3" - 160.0	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38
5'4" - 162.5	17	18	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	36	37
5'5" - 165.1	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	35
5'6" - 167.6	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	34
5'7" - 170.1	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	33	33
5'8" - 172.7	15	16	16	17	18	19	19	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	32	32
5'9" - 175.2	14	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	31
5'10" - 177.8	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	27	28	28	29	30	30
5'11" - 180.3	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30
6'0" - 182.8	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29
6'1" - 185.4	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28
6'2" - 187.9	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27
6'3" - 190.5	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	26	26
6'4" - 193.0	12	12	13	14	14	15	15	16	17	17	18	18	19	20	20	21	22	22	23	23	24	25	25	26

# Signs of dehydration

- Dry mucous membranes
- Thickened secretions
- Reduced tissue turgor (elasticity)
- Reduced sweating
- Sunken eyes
- Tachycardia
- Low blood pressure and postural hypotension

- Altered consciousness including confusion and irritability
- Increasing functional impairment
- Weakness
- Constipation
- Reduced or concentrated (darker) urine output
- Reduced axillary sweating.

# Consequences of dehydration in the elderly



### Dehydration assessment, treatment and prevention



### Assess

# Indicators for dehydration

- Colour of urine and decreased urine output
- Assess: mouth/mucous membrane and skin
- Thickened secretions
- Postural hypotension
- Cramps
- Irritability
- Delirium



### Continue to monitor

# First line treatment

- Input/output chart for 3 days
- Minimum 1.6 L/day (unless contraindicated)
- Offer fluids of choice 2-hourly
- Non-ambulatory present with fluids every 1.5 hours
- Encourage oral intake each medication round
- Review medication



#### Reassess in 24 hours

# Second line treatment

- Contact GP/NP who may follow up with one of the following investigations:
  - blood urea/creatinine levels
  - electrolytes
- Continue fluids



#### Reassess in 24 hours

# Third line treatment

- Re-contact GP/NP
- SC fluids?
- Reassess in 24 hours



## Contact GP/NP if no improvement

## Explore fluids of choice and offer:

# jelly

- tea or coffee
- ice blocks
- soup.

See Ministry of Health guidelines on health eating

(www.health.govt.nz/your-health/healthy-living/food-activity-and-sleep/healthy-eating)

### Prevention

# Dysphagia and safe feeding

## Signs and symptoms of swallowing problems

- Coughing and/or choking when eating or drinking
- Drooling/poor management of oral secretions
- Pocketing of food in cheeks
- Facial weakness
- Gurgly, hoarse voice or a lot of throat clearing
- Multiple swallows for each bolus
- Decline in respiratory status
- Prolonged meal times
- Weight loss or malnutrition
- Dehydration
- Recurrent chest infections
- Pain with swallowing
- Increasing avoidance of multiple foods/liquids.

## Safe feeding strategies

- Make sure you have everything you need within reach (utensils, condiments, napkins and so on).
- Ensure you are both sitting comfortably upright and the person is alert.
- Reduce distractions and interruptions as much as possible.
- Place the meal tray in front of the person.
- Encourage the person to feed themselves if able. Help the person to feed themselves by guiding their hand this can reduce risk as gives person more control.
- If you are feeding them, feed from the front so they can see the food coming.
- Offer one small mouthful at a time. Allow rests in between.
- Make sure you see a swallow before you give another spoonful.
- If food is still leftover, prompt another swallow.
- Consider offering the most nutritious part first.
- Make sure you have plenty of time for mealtimes.
- Keep a record of how much has been eaten and any concerns you have.

# Eating or drinking should be stopped if any of the following happen

- Drowsiness
- Coughing a lot
- Choking
- Shortness of breath
- Voice sounds wet or gurgly.

Contact a GP/NP if a chesty cough, fever or difficulty breathing develops. A reassessment of swallowing may be required.

### Safe feeding strategies







After



Even better

# How to refer to speech language therapist

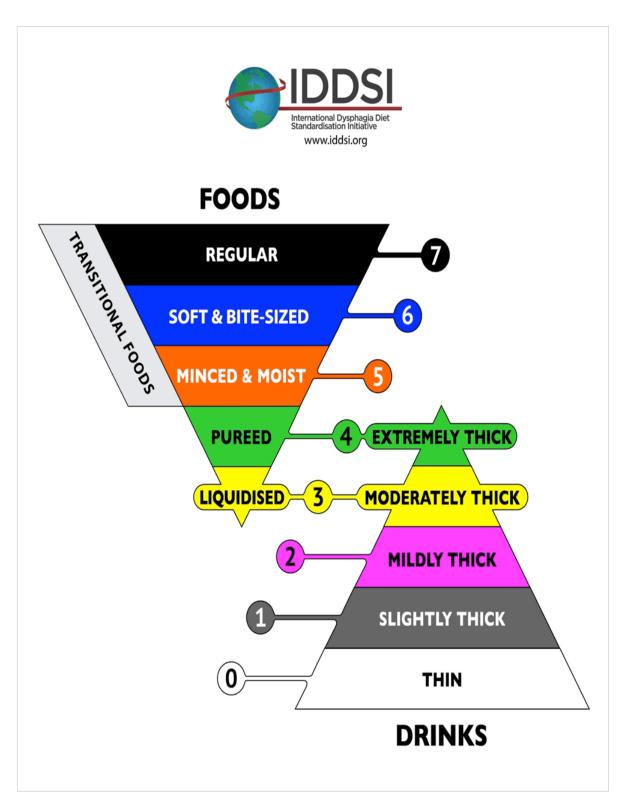
Follow local guidelines when referring.

When referring a person, include the following useful information:

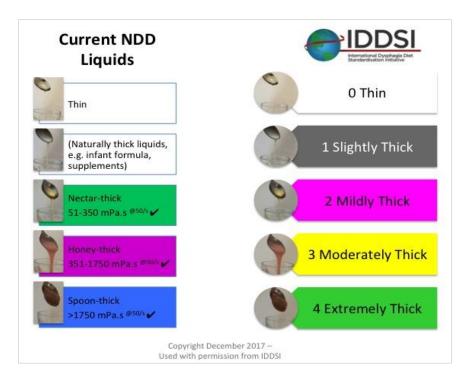
- Description of difficulties
- Current diet and fluids
- Relevant background information, ie, Parkinson's disease
- Chest status, ie, current aspiration pneumonia
- History of dysphagia, if any
- GP/NP consent.

# Food and fluid textures

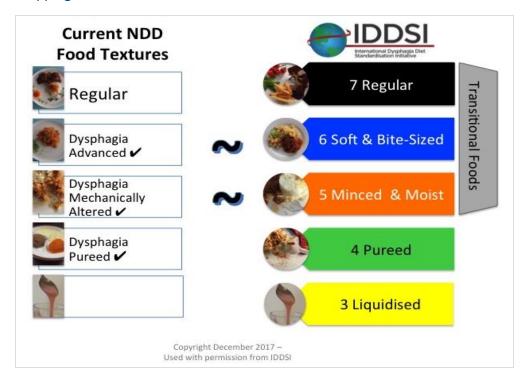
## Food and fluid textures pyramid



## Mapping to IDDSI - drinks



### Mapping to IDDSI - foods



### National descriptors for texture modification in adults

#### Transitional foods

 Food that starts as one texture (eg, firm solid) and changes into another texture specifically when moisture (eg, water or saliva) is applied, or when a change in temperature occurs (eg, heating)

#### 7 Regular

- Normal, everyday foods of various textures that are developmentally and age appropriate
- Any method may be used to eat these foods
- Foods may be hard and crunchy or naturally soft
- Sample size is not restricted at Level 7, therefore, foods may be a range of sizes:
  - Smaller or greater than 15 mm = 1.5 cm pieces (adult)
- Includes hard, tough, chewy, fibrous, stringy, dry, crispy, crunchy or crumbly bits
- Includes food that contains pips, seeds, pith inside skin, husks or bones

### 6 Soft and bite-sized

- Can be eaten with a fork, spoon or chopsticks
- Can be mashed or broken down with pressure from fork, spoon or chopsticks
- A knife is not required to cut this food, but may be used to help loading a fork or spoon
- Chewing is required before swallowing
- Soft, tender and moist throughout but with no separate thin liquid
- 'Bite-sized' pieces as appropriate for size and oral processing skills
  - Adult, 15 mm = 1.5 cm pieces

#### 5 Minced and moist

- Can be eaten with a fork or spoon
- Could be eaten with chopsticks in some cases, if the individual has very good hand control
- Can be scooped and shaped (eg, into a ball shape) on a plate
- Soft and moist with no separate thin liquid
- Small lumps visible within the food
  - Adult, 4 mm lump size
- Lumps are easy to squash with tongue

### 4 Extremely thick/pureed

- Usually eaten with a spoon (a fork is possible)
- Cannot be drunk from a cup
- Cannot be sucked through a straw
- Does not require chewing
- Can be piped, layered or moulded
- Shows some very slow movement under gravity but cannot be poured
- Falls off spoon in a single spoonful when tilted and continues to hold shape on a plate
- No lumps
- Not sticky
- Liquid must not separate from solid

## National descriptors for texture modification in adults continued

### 3 Moderately thick / liquidised

- Can be drunk from a cup
- Some effort is required to suck through a standard bore or wide bore straw (wide bore straw = 0.275 inch or 6.9 mm)
- Cannot be piped, layered or moulded on a plate
- Cannot be eaten with a fork because it drips slowly in dollops through the prongs
- Can be eaten with a spoon
- No oral processing or chewing required can be swallowed directly
- Smooth texture with no 'bits'

### 2 Mildly thick

- Flows off a spoon
- Sippable, pours quickly from a spoon, but slower than thin drinks
- Effort is required to drink this thickness through standard bore straw (standard bore straw = 0.209 inch or 5.3 mm diameter)

### 1 Slightly thick

- Thicker than water
- Requires a little more effort to drink than thin liquids
- Flows through a straw, syringe, teat/nipple
- Similar to the thickness of commercially available 'anti-regurgitation' (AR) infant formula

#### 0 Thin

- Flows like water
- Fast flow
- Can drink through any type of teat/nipple, cup or straw as appropriate for age and skills

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