Section six
Diet and Hydration

Why is Your Resident Not Eating?

Date……..
Resident's name……. Date of birth……

If you have a resident who may not be eating, work through the following checklist:

Number	Possible reason	Yes	No	Signature	Comment
1	Does the resident like the meals offered ?				
2	Any religious / cultural beliefs?				
3	Do they like to eat their meals on their own?				
4	Is the portion size appropriate?				
5	Are they sat comfortably?				
6	Can they see their food?				
7	Do they have the appropriate cutlery?				
8	Do they need assistance?				
9	Do they have a sore mouth?				
10	Are they in pain?				
11	Does the resident feel sick or nauseated?				
12	Are they constipated?				
13	Are they able to chew and swallow their food?				
14	Are dentures well fitting?				

If you have ticked / answered "yes" for any of the above, see weight loss flow chart for possible actions to help improve food intake.

Weight Loss Flow Chart

What to do if your residents continue to lose weight:

Month	Investigate possible causes	Action
1st month of weight loss	Infection	Instigate Medical Review and treat
	Poor Oral Health e.g. thrush	Instigate Medical Review and treat
	Constipation Loose fitting dentures or missing dentures or other dental issues affecting chewing	Increase fluid intake Instigate Medical Review and treat If resident/family willing refer to community dentist If not discuss texture modification e.g. change to a soft diet to ensure diet quality is not affected
	Swallow deterioration or chest infection due to aspiration	Request Short and Long Term (SALT) review
	Smoking	If smoker try to limit smoking
	Poor dietary intake	Initiate food and fluid record chart
		Initiate Food First Provide assistance / appropriate cutlery is required Provide alternate food choices Ensure two nourishing milky drinks Ensure two nourishing snacks Fortify meals where possible
2nd month of weight loss	If weight loss is not significant (See weight loss chart)	Continue with Food First
	If weight loss is significant (See weight loss chart)	Request Medical review
		If appropriate GP to prescribe first line oral nutritional supplements
		Continue with Food First as above
		Continue with food and fluid charts
		Continue to monitor weight
3rd month of weight loss	If weight loss is not significant (See weight loss chart)	Continue with Food First
	If weight loss is significant (See weight loss chart)	Continue with Food First as above
		Request review by dietitian
		Continue with food and fluid charts
		Continue to monitor weight
		Continue with prescribed supplements

Weight Loss Chart

Use below weight loss guide, if weight loss falls in the green part it is considered as insignificant but if it falls in the amber or red section then it is considered significant and must be addressed. Weight loss falling in the RED section should instigate a referral to the Community Dietitians.

Original weight (kg)	Unintentional weight loss		
25	Less than 1.25kg	1.25kg or more	2.5kg or more
30	Less than 1.5kg	1.5kg or more	3 kg or more
35	Less than 1.75kg	1.75kg or more	3.5 kg or more
40	Less than 2kg	2kg or more	4kg or more
45	Less than 2.25kg	2.25kg or more	4.5kg or more
50	Less than 2.5kg	2.5kg or more	5 kg or more
55	Less than 2.75kg	2.75kg or more	5.5 kg or more
60	Less than 3kg	3kg or more	6 kg or more
65	Less than 3.25kg	3.25kg or more	6.5kg or more
70	Less than 3.5kg	3.5kg or more	7 kg or more
75	Less than 3.75kg	3.75kg or more	7.5 kg or more
80	Less than 4kg	4kg or more	8kg or more
85	Less than 4.25kg	4.25kg or more	8.5 kg or more
90	Less than 4.5kg	4.5kg or more	9 kg or more
95	Less than 4.75kg	4.75kg or more	9.5 kg or more
100	Less than 5kg	5kg or more	10 kg or more
105	Less than 5.25kg	5.25kg or more	10.5 kg or more
110	Less than 5.5kg	5.5kg or more	11 kg or more
115	Less than 5.75kg	5.75kg or more	11.5 kg or more
120	Less than 6kg	6kg or more	12 kg or more
125	Less than 6.25kg	6.25kg or more	12.5 kg or more
130	Less than 6.5kg	6.5kg or more	13 kg or more
135	Less than 6.75kg	6.75kg or more	13.5 kg or more
140	Less than 7kg	7kg or more	14 kg or more
145	Less than 7.25kg	7.25kg or more	14.5 kg or more
150	Less than 7.5kg	7.5kg or more	15 kg or more
155	Less than 7.75kg	7.75kg or more	15.5 kg or more
160	Less than 8kg	8kg or more	16 kg or more
165	Less than8.256kg	8.25kg or more	16.5 kg or more
170	Less than 8.5kg	8.5kg or more	17 kg or more

How to Fortify Food and Drink

For residents that have recently lost weight, have increased nutritional needs or are at risk of malnutrition, this information will help you to improve their intake of calories and protein and prevent any further weight loss.

Eat little and often
Eating small amounts regularly should help to improve a poor appetite.
Try offering small, nourishing meals, snacks and drinks every 2-3 hours throughout the day.

Use full cream milk (not skimmed or semi-skimmed)
Aim for 1 pint/600ml per day.

Fortify your milk
See recipe overleaf.

Add dried skimmed milk powder to foods
Add directly to soups, milk puddings, custards and mashed potatoes. Try adding 2-3 teaspoons per portion of food.

Choose full fat and full sugar* products
Rather than diet, reduced/low fat, low sugar or healthy eating varieties provide full fat and full sugar as these contain more calories.

Add butter, margarine, vegetable oil, rapeseed oil or olive oil
Add to vegetables, mashed potato, jacket potato, etc.

Add grated cheese
Add to soup, mashed potato, scrambled eggs, etc.

Serve main meals with a creamy sauce
For example, cheese, parsley or white sauces.

Add cream or evaporated milk
Add to soups or puddings, e.g.: stewed/canned fruits, custard, rice puddings, etc.

Add sugar*
Add to cereals, drinks and desserts. Serve milk or bread puddings with jam, honey or syrup.

Snack between meals and at bedtime
See snack ideas overleaf.

How to Fortify Food and Drink (continued)

A little alcohol

Before a meal a little alcohol can stimulate appetite, but check with a GP or chemist first regarding any potential interaction with medications.

Choose a wide variety of foods

At each meal provide:

- A protein food - meat, fish, egg, cheese, milk or vegetarian alternative, e.g.: Quorn, soya, beans or lentils
- A starchy food - bread, cereals, potato, rice or pasta
- Some fruit, vegetables or salad.

Have plenty of nourishing fluids

Aim for 8 glasses (i.e. at least 1.6 litres) a day. Try sweetened fruit juice*, chilled or warmed fortified milk, coffee, hot chocolate or malted drinks made with fortified milk or milk shakes. Provide drinks with a high sugar content, e.g.: fruit juice, lemonade, full sugar squash / Hi juice*.

Consider an A-Z multivitamin and mineral supplement

Discuss with a GP if your resident is only eating a small amount or limited variety of foods unless they are taking three or more supplement drinks daily (such as Complan, Build Up or Foodlink Complete).

Contact a nurse or GP

Contact a nurse or GP if you have concerns regarding continued weight loss, difficulty taking solids, worsening appetite, limited food variety or if your resident has diabetes and is experiencing high blood sugars or sugar in their urine.

*If your resident has diabetes, continue to choose sugar free drinks. They can have a moderate amount of sugar containing foods.

How to Fortify Food and Drink (continued)

Snack ideas

- Fresh, stewed or canned fruit with yoghurt, custard, evaporated milk or cream
- Steam pudding with cream, custard or ice cream
- Rice pudding, trifle, mousse, crème caramel
- Yoghurt - full fat
- Crisps
- Cheese and crackers
- Biscuits – plain, chocolate or cream-filled
- Cereal with full fat or fortified milk (good at any time of day)
- Cheese on toast
- Chocolate / sweets* / nuts
- Ice cream / ice lollies*

Fortified milk

- Add two to four tablespoons of skimmed milk powder, e.g. Marvel, Plus Pints or a supermarket own brand, to one pint of full cream milk and mix well.

- Use fortified milk in drinks such as tea or coffee, on cereals, in sauces or to make up milkshakes. Once made up it can be kept it in the fridge to use during the rest of the day.

- Why not have fortified milk as a drink on its own? A 200ml glass of fortified milk will provide 175 calories (kcal) and 11g of protein - double the goodness of semi-skimmed milk.

- For variety add a milkshake powder or syrup.

100 Calorie Boosters

The following examples are approximately 100 calories each. These boosters can be added to any appropriate meal to fortify it, or eaten as a snack to promote weight gain.

Savoury toppings
- Medium spread peanut butter (16g)
- 1 level tbsp mayonnaise (15g)
- Average serving salad cream (30g)
- 2 tbsp hummus (50g)
- 1 heaped tbsp pesto (20g)

Sweet toppings
- 1 heaped tbsp. sugar (25g)
- 2 heaped tsp honey (35g)
- 2 heaped tsp golden syrup (35g)
- 2 heaped tsp lemon curd (35g)

Fruit and nuts
- A small handful of peanuts (30g)
- 5 brazil nuts (15g)
- A small handful of cashew nuts (20g)
- 1 banana (100g)
- 5 dried apricots (50g)
- 6 prunes (60g)
- 2-3 dates (40g)
- 1 heaped tbsp sultanas (35g)

Dairy
- 3 tbsp. skimmed milk powder (27g)
- 150ml full fat milk (blue top)
- 1 scoop ice cream (60g)
- 75ml evaporated milk
- 30ml condensed milk
- 1 small pot full fat yoghurt
- 30ml coconut cream
- 1 medium slice of cheddar cheese

Snacks
- 2 digestive biscuits
- 5 jelly babies
- 2 fingers of Kit Kat
- Half a Crunchie
- 1 Fudge bar
- 1 small bag of crisps

Tbsp: tablespoon Tsp: teaspoon

Developed by Cathy Forbes, Advanced Specialist Dietitian - Food First Project Lead, SEPT Community Health Services, Bedfordshire. Available at: www.bapen.org.uk/tackling-malnutrition/nutritional-advice-and-information/treating-malnutrition/food-first-project

Finger Foods

Finger foods can be enjoyed by everyone and are a great way to increase your resident's independence at mealtimes.

Think about size and shape. Foods too small will be hard to pick up but foods too big will be difficult to handle.

Check the temperature. Make sure food is cool enough to hold and eat.

Use moist fillings in bread to help hold sandwiches together. Try using butter, soft cheese or mayonnaise alongside other ingredients.

Keep the skin on fruit to make them less slippery and easier to hold. A sprinkle of lemon juice will stop fruit turning brown as quickly.

Try using a carrying bag or waist pouch so your resident can carry around their own food and eat when they want to.

Example Finger Foods

Toast fingers
Sandwiches
Cereal bars
Chicken drumsticks
Sausages
Meat balls
Fish fingers
Potato waffles
Sausage rolls
Crisps
Malt loaf

Cherry tomatoes
Hardboiled egg slices
Chips / potato wedges
Pizza slices
Small potatoes
Cakes / buns
Flapjack
Biscuits
Teacakes
Crumpets
Scones

Cucumber
Carrot batons
Banana
Apple slices
Grapes
Avacado slices
Chocolate
Sweets
Cheese cubes
Celery sticks

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Hydration Boosters

Most people should aim to drink 1,600 – 2,000 mls (around 6 - 8 glasses) of fluid per day to stay hydrated, unless advised otherwise by a doctor or specialist nurse. If your resident finds it difficult to increase the amount they drink, try opting for foods high in moisture to maintain a good hydration status.

Did you know?… Around 20 per cent of our daily fluid intake comes from within our food.

Sweet options:

2 tablespoons of cream	30ml
Fromage frais (60g)	50ml
2 pineapple rings	70ml
Ice lolly (70g)	70ml
Stewed apple (85g)	75ml
2 scoops of ice cream	75ml
Small bowl of porridge (110g)	80ml
Custard (120g)	90ml
Yoghurt (125g)	95ml
Tinned fruit cocktail (115g)	100ml
Jelly (120g)	100ml
Instant whip (120g)	120ml
Serve cereal with milk	125ml
1 slice of melon	140ml
Rice pudding (200g)	160ml

Savoury options:

Hummus dip (50g)	30ml
1 boiled egg	40ml
Serving of gravy	50ml
1 chicken drumstick (90g)	55ml
2 celery sticks	55ml
2 tablespoons of cottage cheese	60ml
2 tablespoons of mashed potato	70ml
3 tablespoons of mushy peas	70ml
Cauliflower cheese (90g)	70ml
4 florets of broccoli	75ml
1 tomato (85g)	80ml
Scrambled eggs with milk (120g)	80ml
3 tablespoons of baked beans	90ml
Side salad (100g)	95ml
Small tin of soup (300g)	265ml

Tip: Choosing fluid rich meals or serving foods with a sauce can help improve your fluid intake. See 'Keeping Hydrated' resource for more hydration advice.

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Nourishing Drinks

Keeping hydrated

- Everyone should drink at least 1.6 - 2 litres (2.8 - 3.5 pints), around eight glasses, of fluid per day to stay hydrated
- Drinking sufficient amounts can contribute towards staying fit and healthy
- Signs of dehydration include: a dry mouth or lips; thirst; tiredness; headache; dry and loose skin and dark coloured or strong smelling urine.

Good levels of hydration can help prevent or aid the treatment of:

- ✔ Pressure ulcers
- ✔ Low blood pressure
- ✔ Urinary infections
- ✔ Constipation
- ✔ Confusion
- ✔ Falls

If your resident has lost weight, has a small appetite or needs extra nourishment, e.g: to help heal a wound, you may find it easier to boost their dietary intake by having nourishing drinks rather than eating more at meal times. Nourishing drinks count towards daily fluid needs.

Nourishing drinks do not replace meals but sipping them between meals, or drinking one instead of eating a snack, can be both enjoyable and beneficial to your health.

By replacing some of the tea, coffee and water they drink each day with milk, milky coffee, fruit juice or any of the drinks listed below, you can increase your resident's energy and protein intake which helps to improve overall nutrition.

Fortified milk

- See "How to Fortify food and Drink" section

Nourishing Drinks (continued)

Delicious cool and warm nourishing drinks

Here are some tried and tested recipe suggestions for nourishing drinks - most of which use fortified milk.

Fortified milk can be used to make up milky drinks such as Horlicks, Ovaltine or cocoa or add it to hot drinks such as tea or coffee.

If your resident prefers to have instant drinks, e.g. Cuppa Soup or instant hot chocolate, add two tablespoons of skimmed milk powder to the cup and add hot water to make the drink as usual.

You do not need special equipment to make these drinks – although if you have a liquidiser this can be used to quickly whizz the ingredients together. If you do not have a liquidiser, pushing the finished drink through a sieve before serving will make sure there are no lumps.

These drinks are low cost and can be made from store cupboard ingredients. They are all high in calories and protein and will provide a range of vitamins and minerals.

Simple Milkshake

- 200ml fortified milk
- 1 scoop of ice cream or 1 pot of yoghurt
- Fresh fruit or milkshake flavouring, e.g.: Nesquik, Ovaltine or supermarket brand

Approx. 300kcal and 10g protein

Banoffee Treat

- 1 small mashed banana
- 150ml fortified milk
- 1 pot of crème caramel
- 1 tsp of golden syrup

Blend or sieve until smooth

Approx. 350kcal and 12g protein

Chocolate Dream

- 200ml warmed fortified milk
- 1 tbsp. drinking chocolate
- Sweeten with sugar to taste
- Optional - 1 teaspoon of coffee or a pinch of cinnamon

Approx. 230kcal and 17g protein

Fruit Smoothie

- 150 ml of orange juice
- 1 mashed banana
- 3-4 tbsp of tinned peaches (in syrup)
- 2 tsp of honey

Blend until smooth

Approx. 260kcal and 2g protein

Nourishing Drinks (continued)

Strawberry Yoghurt Cup
- 1 pot of strawberry yoghurt
- 130ml fortified milk
- 2 tsps honey

Approx. 270kcal and 12g protein

Simple Iced Coffee
- 2 tsps of instant coffee powder
- 200ml fortified milk
- 2 tbsps sugar or condensed milk

Approx. 330kcal and 11g protein

Cinnamon Spice
- 200ml warmed fortified milk
- 1 tbsp. golden syrup
- A pinch of mixed spice and ground cinnamon

Approx. 250kcal and 16g protein

Greek Cooler
- 1 tub (150g/5oz) of Greek yoghurt
- 2 tbsps of honey
- 50ml of fortified milk

Approx. 484kcal and 20.5g protein

Rich milkshake recipe
40ml/2.5 tablespoons of Double Cream
80ml whole milk
4g (1 tsp) sugar
80ml/4 tablespoons of vanilla ice cream
24g/3 tablespoons of skimmed milk powder
Volume ~180ml Total (more if whisked and frothy)
Milkshake powder/chocolate spread/fruit can be added to vary flavour if desired
Approx. 400kcal and 13g of protein

Eton Mess
A taste of British summertime.
Blend together:
2 meringue nests (approx. 30g)
150ml soya milk
2½ tablespoons strawberry milkshake powder
2½ tablespoons strawberry jam
1½ tablespoons icing sugar

Approx. 520kcal

Dairy Free Nourishing Drink Recipes

Virgin Piña Colada
Serve with ice for authentic Caribbean flavours.
Simply combine:
100ml tinned coconut milk
100ml pineapple juice
2½ tablespoons apricot jam
2½ tablespoons icing sugar
1 tablespoon golden syrup
Approx. 520kcal

Lemon and Lime Sublime
Whisk together:
100ml lemonade
100ml lime cordial
2½ tablespoons of lemon curd
2½ tablespoons of icing sugar
1 tablespoon of golden syrup
Approx. 500kcal
Pour through a strainer to serve.

Developed by Cathy Forbes, Advanced Specialist Dietitian - Food First Project Lead, SEPT Community Health Services, Bedfordshire. Available at: www.bapen.org.uk/tackling-malnutrition/nutritional-advice-and-information/treating-malnutrition/food-first-project

Dehydration

Prevent dehydration:

- Are you sure that your residents are getting enough fluid through the day?
- Check the resident's daily fluid requirements according to their weight.
- The allowance includes wet or watery food e.g. milk on cereals, soup, jelly, ice lollies, custard, ice cream

Daily Fluid requirement according to weight.

Weight in kg	Fluid in mls
50	1950
55	2025
60	2100
65	2175
70	2250
75	2325
80	2400
85	2475
90	2550
95	2625
100	2700

Check for signs of dehydration

- **Headache**
- **Dizziness**
- **Irritability or lethargy**
- **Low Blood pressure**
- **More than 1% weight loss**
- **Low urine output**

Have they got a low urine output or dark coloured urine?

= OK
= Dehydrated
= Very Dehydrated

YES

Increase fluids:

- 150 mls per hour for 8 hours
- If the resident cannot drink large amounts try regular small sips
- Use a larger cup- they are likely to drink more from a large cup than a small cup

Monitor fluid intake and output:

- Start a fluid balance chart.
- Measure fluid intake and urine output

Review after 24-48 Hours

?

Has the resident improved?

NO

YES

Prevent further dehydration:

- **Ensure residents receive the correct daily requirement of fluid according to their weight**
- **Teach the importance of good hydration -e.g. helping to prevent constipation; stabilising blood pressure; maintain good skin elasticity**

Complete a new delirium checklist for up to date information.

Call the GP and use the checklists to describe the symptoms

STOP DELIRIUM! © 2007

MUST

BAPEN
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'Malnutrition Universal Screening Tool'

MAG
Malnutrition Advisory Group
A Standing Committee of BAPEN

BAPEN is registered charity number 1023927 www.bapen.org.uk

'MUST'

'MUST' is a five-step screening tool to identify **adults,** who are malnourished, at risk of malnutrition (undernutrition), or obese. It also includes management guidelines which can be used to develop a care plan.

It is for use in hospitals, community and other care settings and can be used by all care workers.

This guide contains:

- A flow chart showing the 5 steps to use for screening and management
- BMI chart
- Weight loss tables
- Alternative measurements when BMI cannot be obtained by measuring weight and height.

The 5 'MUST' Steps

Step 1

Measure height and weight to get a BMI score using chart provided. *If unable to obtain height and weight, use the alternative procedures shown in this guide.*

Step 2

Note percentage unplanned weight loss and score using tables provided.

Step 3

Establish acute disease effect and score.

Step 4

Add scores from steps 1, 2 and 3 together to obtain overall risk of malnutrition.

Step 5

Use management guidelines and/or local policy to develop care plan.

Please refer to *The 'MUST' Explanatory Booklet* for more information when weight and height cannot be measured, and when screening patient groups in which extra care in interpretation is needed (e.g. those with fluid disturbances, plaster casts, amputations, critical illness and pregnant or lactating women). The booklet can also be used for training. See *The 'MUST' Report* for supporting evidence. Please note that 'MUST' has not been designed to detect deficiencies or excessive intakes of vitamins and minerals and is of **use only in adults.**

Step 2 – Weight loss score

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	Score 0 Wt loss < 5%	Score 1 Wt loss 5 - 10%	Score 2 Wt loss > 10%
	Weight loss in last 3 to 6 months		
Current weight kg	Less than (kg)	Between (kg)	More than (kg)
30	1.6	1.6 - 3.3	3.3
31	1.6	1.6 - 3.4	3.4
32	1.7	1.7 - 3.6	3.6
33	1.7	1.7 - 3.7	3.7
34	1.8	1.8 - 3.8	3.8
35	1.8	1.8 - 3.9	3.9
36	1.9	1.9 - 4.0	4.0
37	1.9	1.9 - 4.1	4.1
38	2.0	2.0 - 4.2	4.2
39	2.1	2.1 - 4.3	4.3
40	2.1	2.1 - 4.4	4.4
41	2.2	2.2 - 4.6	4.6
42	2.2	2.2 - 4.7	4.7
43	2.3	2.3 - 4.8	4.8
44	2.3	2.3 - 4.9	4.9
45	2.4	2.4 - 5.0	5.0
46	2.4	2.4 - 5.1	5.1
47	2.5	2.5 - 5.2	5.2
48	2.5	2.5 - 5.3	5.3
49	2.6	2.6 - 5.4	5.4
50	2.6	2.6 - 5.6	5.6
51	2.7	2.7 - 5.7	5.7
52	2.7	2.7 - 5.8	5.8
53	2.8	2.8 - 5.9	5.9
54	2.8	2.8 - 6.0	6.0
55	2.9	2.9 - 6.1	6.1
56	2.9	2.9 - 6.2	6.2
57	3.0	3.0 - 6.3	6.3
58	3.1	3.1 - 6.4	6.4
59	3.1	3.1 - 6.6	6.6
60	3.2	3.2 - 6.7	6.7
61	3.2	3.2 - 6.8	6.8
62	3.3	3.3 - 6.9	6.9
63	3.3	3.3 - 7.0	7.0
64	3.4	3.4 - 7.1	7.1

	Score 0 Wt loss < 5%	Score 1 Wt loss 5 - 10%	Score 2 Wt loss > 10%
	Weight loss in last 3 to 6 months		
kg	Less than (kg)	Between (kg)	More than (kg)
65	3.4	3.4 - 7.2	7.2
66	3.5	3.5 - 7.3	7.3
67	3.5	3.5 - 7.4	7.4
68	3.6	3.6 - 7.6	7.6
69	3.6	3.6 - 7.7	7.7
70	3.7	3.7 - 7.8	7.8
71	3.7	3.7 - 7.9	7.9
72	3.8	3.8 - 8.0	8.0
73	3.8	3.8 - 8.1	8.1
74	3.9	3.9 - 8.2	8.2
75	3.9	3.9 - 8.3	8.3
76	4.0	4.0 - 8.4	8.4
77	4.1	4.1 - 8.6	8.6
78	4.1	4.1 - 8.6	8.7
79	4.2	4.2 - 8.7	8.8
80	4.2	4.2 - 8.9	8.9
81	4.3	4.3 - 9.0	9.0
82	4.3	4.3 - 9.1	9.1
83	4.4	4.4 - 9.2	9.2
84	4.4	4.4 - 9.3	9.3
85	4.5	4.5 - 9.4	9.4
86	4.5	4.5 - 9.6	9.6
87	4.6	4.6 - 9.7	9.7
88	4.6	4.6 - 9.8	9.8
89	4.7	4.7 - 9.9	9.9
90	4.7	4.7 - 10.0	10.0
91	4.8	4.8 - 10.1	10.1
92	4.8	4.8 - 10.2	10.2
93	4.9	4.9 - 10.3	10.3
94	4.9	4.9 - 10.4	10.4
95	5.0	5.0 - 10.6	10.6
96	5.1	5.1 - 10.7	10.7
97	5.1	5.1 - 10.8	10.8
98	5.2	5.2 - 10.9	10.9
99	5.2	5.2 - 11.0	11.0

Alternative measurements and considerations

Step 1: BMI (body mass index)

If height cannot be measured

- Use recently documented or self-reported height (if reliable and realistic).
- If the subject does not know or is unable to report their height, use one of the alternative measurements to estimate height (ulna, knee height or demispan).

Step 2: Recent unplanned weight loss

If recent weight loss cannot be calculated, use self-reported weight loss (if reliable and realistic).

Subjective criteria

If height, weight or BMI cannot be obtained, the following criteria which relate to them can assist your professional judgement of the subject's nutritional risk category. Please note, these criteria should be used collectively not separately as alternatives to steps 1 and 2 of 'MUST' and are not designed to assign a score. Mid upper arm circumference (MUAC) may be used to estimate BMI category in order to support your overall impression of the subject's nutritional risk.

1. BMI

- Clinical impression – thin, acceptable weight, overweight. Obvious wasting (very thin) and obesity (very overweight) can also be noted.

2. Unplanned weight loss

- Clothes and/or jewellery have become loose fitting (weight loss).
- History of decreased food intake, reduced appetite or swallowing problems over 3-6 months and underlying disease or psycho-social/physical disabilities likely to cause weight loss.

3. Acute disease effect

- Acutely ill and no nutritional intake or likelihood of no intake for more than 5 days.

Further details on taking alternative measurements, special circumstances and subjective criteria can be found in *The 'MUST' Explanatory Booklet*. A copy can be downloaded at www.bapen.org.uk or purchased from the BAPEN office. The full evidence-base for 'MUST' is contained in *The 'MUST' Report* and is also available for purchase from the BAPEN office.

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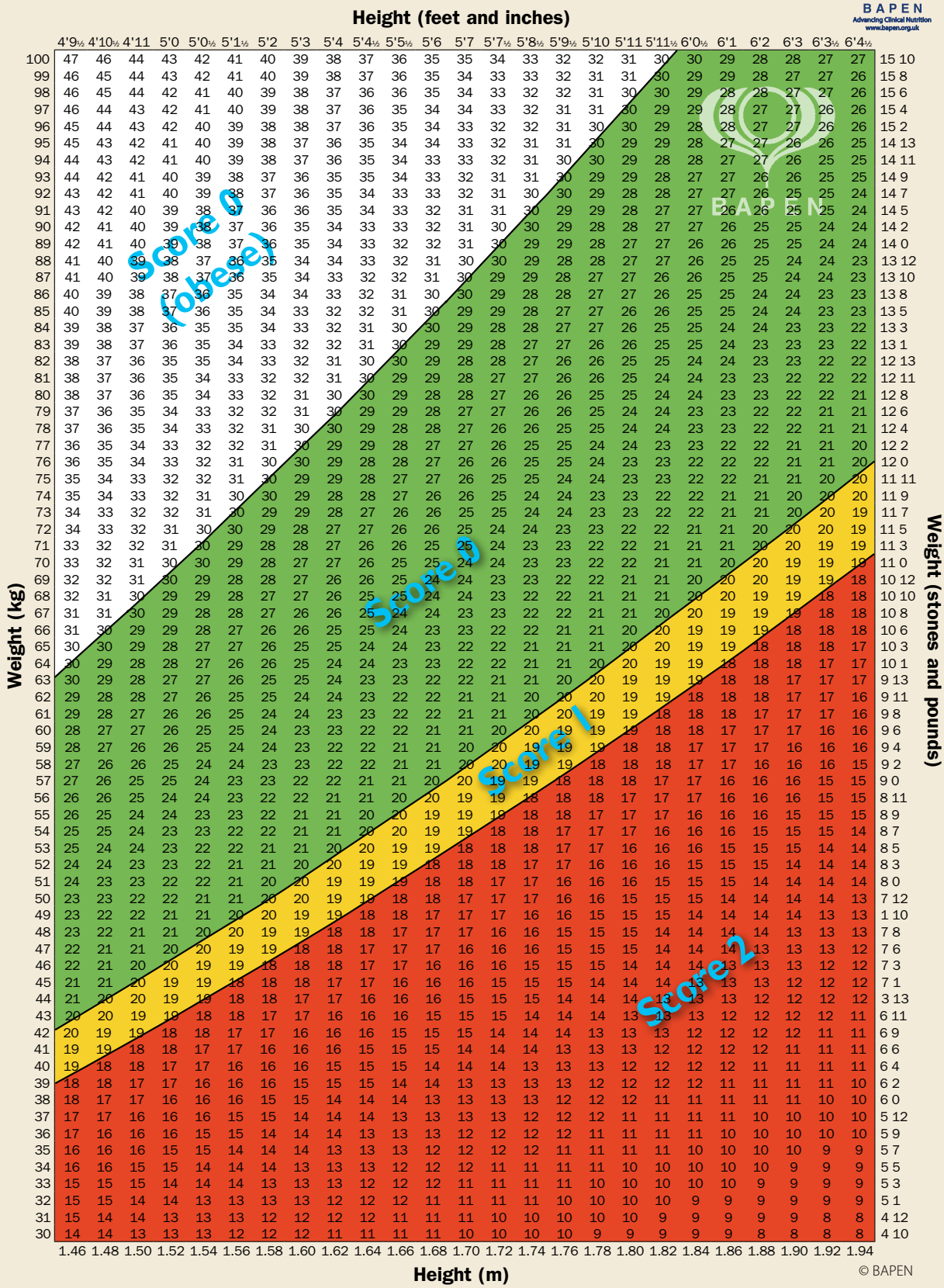
'MUST' is supported by the British Dietetic Association, the Royal College of Nursing and the Registered Nursing Home Association.

Step 1 – BMI score (& BMI)



Note : The black lines denote the exact cut off points (30,20 and 18.5 kg/m²), figures on the chart have been rounded to the nearest whole number.

Step 1 + Step 2 + Step 3

Step 1 — BMI score

BMI kg/m²	Score
>20 (>30 Obese)	= 0
18.5-20	= 1
<18.5	= 2

If unable to obtain height and weight, see reverse for alternative measurements and use of subjective criteria

Step 2 — Weight loss score

Unplanned weight loss in past 3-6 months

%	Score
<5	= 0
5-10	= 1
>10	= 2

Step 3 — Acute disease effect score

If patient is acutely ill **and** there has been or is likely to be no nutritional intake for >5 days
Score 2

Acute disease effect is unlikely to apply outside hospital. See 'MUST' Explanatory Booklet for further information

Step 4

Overall risk of malnutrition

Add Scores together to calculate overall risk of malnutrition
Score 0 Low Risk Score 1 Medium Risk Score 2 or more High Risk

Step 5

Management guidelines

0 Low Risk

Routine clinical care

- Repeat screening
  Hospital – weekly
  Care Homes – monthly
  Community – annually
  for special groups
  e.g. those >75 yrs

1 Medium Risk

Observe

- Document dietary intake for 3 days
- If adequate – little concern and repeat screening
  - Hospital – weekly
  - Care Home – at least monthly
  - Community – at least every 2-3 months
- If inadequate – clinical concern – follow local policy, set goals, improve and increase overall nutritional intake, monitor and review care plan regularly

2 or more High Risk

Treat*

- Refer to dietitian, Nutritional Support Team or implement local policy
- Set goals, improve and increase overall nutritional intake
- Monitor and review care plan
  Hospital – weekly
  Care Home – monthly
  Community – monthly

* Unless detrimental or no benefit is expected from nutritional support e.g. imminent death.

All risk categories:

- Treat underlying condition and provide help and advice on food choices, eating and drinking when necessary.
- Record malnutrition risk category.
- Record need for special diets and follow local policy.

Obesity:

- Record presence of obesity. For those with underlying conditions, these are generally controlled before the treatment of obesity.

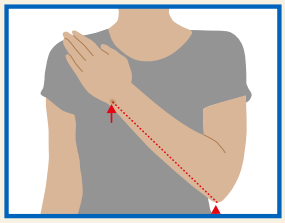
Re-assess subjects identified at risk as they move through care settings

See *The 'MUST' Explanatory Booklet* for further details and *The 'MUST' Report* for supporting evidence.

Alternative measurements: instructions and tables

If height cannot be obtained, use length of forearm (ulna) to calculate height using tables below. *(See The 'MUST' Explanatory Booklet for details of other alternative measurements (knee height and demispan) that can also be used to estimate height).*

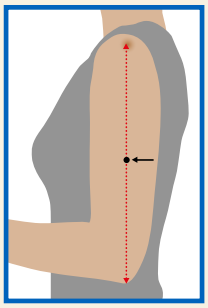
Estimating height from ulna length



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).

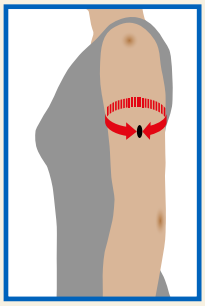
HEIGHT (m)	Men (<65 years)	1.94	1.93	1.91	1.89	1.87	1.85	1.84	1.82	1.80	1.78	1.76	1.75	1.73	1.71
	Men (≥65 years)	1.87	1.86	1.84	1.82	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.67
	Ulna length (cm)	32.0	31.5	31.0	30.5	30.0	29.5	29.0	28.5	28.0	27.5	27.0	26.5	26.0	25.5
HEIGHT (m)	Women (<65 years)	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
	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
HEIGHT (m)	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
	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
HEIGHT (m)	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
	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

Estimating BMI category from mid upper arm circumference (MUAC)



The subject's left arm should be bent at the elbow at a 90 degree angle, with the upper arm held parallel to the side of the body. Measure the distance between the bony protrusion on the shoulder (acromion) and the point of the elbow (olecranon process). Mark the mid-point.

Ask the subject to let arm hang loose and measure around the upper arm at the mid-point, making sure that the tape measure is snug but not tight.



If MUAC is <23.5 cm, BMI is likely to be <20 kg/m^2.
If MUAC is >32.0 cm, BMI is likely to be >30 kg/m^2.

The use of MUAC provides a general indication of BMI and is not designed to generate an actual score for use with 'MUST'. For further information on use of MUAC please refer to *The 'MUST' Explanatory Booklet.*