



# Malnutrition in the Elderly

## Understanding the root cause



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Think of a time in your life when you lost your appetite. What caused it? Perhaps you didn't want to eat because you were feeling ill. Or, perhaps, you were really stressed-out before an important presentation or exam. Now imagine how it would feel to have someone come up to you at that moment and tell you that you had to drink one pint of fortified milk per day, eat 'little and often' and that you had to add more butter, double cream and cheese to your food. Would that have been helpful advice?

A fortified diet and oral nutrition supplements can sometimes stop and/or reverse weight loss and improve quality of life. Other times, they will have no meaningful impact on these measures at all. Health professionals are urged to ascertain the root cause of the problem before spending considerable time, money and human resources, trying to resolve the consequences of malnutrition. Is there something hindering this person's ability to eat? And if so, what can be done to resolve malnutrition?

### Background

Malnutrition affects 1.3 million people in UK who are over the age of 65 years.<sup>1</sup> Malnutrition is defined by the National Institute for Health and Care Excellence (NICE) as someone having a body mass index (BMI) of less than 18.5 kg/m<sup>2</sup>, and/or has had unintentional weight loss greater than 10% within the last 3-6 months, and/or has a BMI of less than 20 kg/m<sup>2</sup> and unintentional weight loss greater than 5% within the past 3-6 months.<sup>2</sup> Malnutrition increases hospital admissions, increases the risk of becoming dependent on others (e.g. becoming a permanent resident in a care home) and increases GP visits and prescriptions.<sup>3</sup> So, why is malnutrition so common in people over the age of 65?

Appetite is affected by numerous physical, psychological and environmental factors. Lack of money and/or impaired mobility and dexterity, can all make shopping, preparing food and eating more difficult.<sup>4</sup> Nausea, pain, dysphagia, constipation, medication side effects, acute illness, taste and smell loss and oral health

problems can make food less appealing and more difficult to eat.<sup>4</sup> Loneliness and depression can reduce motivation and cachexia and/or end-of-life changes will affect how the body responds to food. There is clearly not a 'one-size-fits-all' approach to managing malnutrition. Here are five of the most challenging 'root causes' of malnutrition and suggestions on how to manage them.

### Taste & smell loss

Both taste and smell have a huge impact on appetite and the amount of enjoyment people get from their food.<sup>4</sup> When people say food has less "taste" (or "no taste"), they may logically assume that there is a problem with their taste buds. However, 'taste' only refers to the ability to detect sweet, salty, sour, bitter and umami flavours on the tongue.<sup>5</sup> If someone's taste has declined, age may not be to blame.<sup>5,7</sup> Instead, problems tend to arise when older adults have at least one medical condition and take more than three medications per day — suddenly they may need approximately 2-12 x more salt/sugar/bitter/umami flavours in their food in order to be able to detect them.<sup>7</sup>

Most people don't realise that 75-90% of the flavour from food actually comes from its smell.<sup>5</sup> So, when someone says their food "tastes" bland they may not realise it is actually their sense of smell that has diminished. When food is chewed, smell molecules are released and travel up the back of your throat and attach to the olfactory bulb in the nose.<sup>5</sup> This is called retronasal smell and is different from orthonasal smell, where the smell molecules come from outside the mouth, such as when smelling a flower.<sup>5</sup> This is why food loses some of its flavour when someone has a blocked-up nose. Over half of people aged 65-80 years have olfactory dysfunction, as do 62-80% of people over the age of 80.<sup>8</sup> People with certain neurological diseases (e.g. Alzheimer's disease, mild cognitive impairment, Parkinson's disease, Lewy body dementia and Huntington's disease) also have a greatly diminished sense of smell.<sup>9</sup>

Someone with a reduced sense of taste or smell will require a medication review. Other coping strategies include promoting strong flavours, such as lemon or ginger, and/or adding extra herbs, spices and condiments, such as vinegar. Another option, if the person's swallow is safe, is to make meals more interesting by including lots of different textures (e.g. smooth, chewy, crunchy), offering foods at different temperatures (e.g. hot, room temperature, frozen), and including food and drink which makes the tongue 'tingle', such as carbonated beverages, hot peppers, mustard and menthol.<sup>4,5</sup>

## Oral health

Almost a quarter of people aged 65+ years do not have any natural teeth,<sup>9</sup> and about 30% of people the same age have reduced saliva production, often due to medical issues and medication.<sup>4</sup> Tooth loss reduces the ability to chew food by 30-40% and dentures reduce chewing efficiency by 75%.<sup>6</sup>

In order to taste, smell and swallow food properly, a person needs adequate dentition, enough strength in their jaw muscles to chew the food adequately, sufficient saliva to moisten the food and good tongue co-ordination.<sup>6</sup> A reduced ability to chew limits the variety of foods that can be safely consumed and this can reduce eating pleasure.<sup>6</sup>

One study of 200 long-term care residents found that the prevalence of undernutrition was 50% and that many of the eating and swallowing problems were linked to issues with oral health.<sup>6</sup>

In fact, oral health problems were the single most important predictor of weight loss in the frail elderly.<sup>6</sup> Missing teeth, wearing dentures and chewing difficulties are also associated with a loss of appetite.<sup>4</sup>

Solutions to oral health problems include ensuring a patient's mouth, teeth and/or dentures are cleaned properly every day and making sure they get regular dental checkups. If people are missing teeth, ask whether dentures can be fitted, and make sure these dentures fit properly. Also, be sure to check the mouth regularly for oral thrush and if discovered treat it promptly.

## Loneliness & depression

According to Age UK, loneliness can be as harmful to health as smoking 15 cigarettes per day.<sup>9</sup> One third of people aged 65+ years and half of people 75+ years live alone.<sup>4</sup> Living alone has been found to reduce appetite, provide fewer social cues to eat and, generally, makes eating less pleasurable.<sup>4</sup> The suggestion of lunch clubs and/or befriending services may be helpful in these situations.

Depression is an even bigger worry. Symptoms may include lack of appetite, loss of interest in activities and lack of motivation.<sup>4,10</sup> Twenty per cent of people 65-69 years are depressed and over 40% of people over age 85 years are depressed.<sup>10</sup> If you think depression is the underlying reason why the patient is not eating, be sure to refer them to their GP or mental health services for assessment and treatment.

## Cachexia

Cachexia is one of the major causes of weight loss in the elderly and is associated with an increase in mortality.<sup>11</sup> The early stage of cachexia is diagnosed when:

1. There is an underlying chronic disease
2. There is unintentional weight loss <5% of the person's usual body weight in the last six months
3. There is chronic or recurrent inflammation (as identified by C-reactive protein levels)
4. There is anorexia or anorexia-related symptoms.<sup>12</sup>

Cachexia is different from starvation because it involves a rapid or accelerated loss of skeletal muscle combined with a higher metabolic rate, both of which occur in the presence of inflammation and a chronic disease.<sup>13,14</sup> One third to one half of people with the following diseases will develop cachexia: chronic obstructive pulmonary disease, chronic heart failure, chronic renal failure, liver failure, cancer, AIDS and rheumatoid arthritis.<sup>12</sup>

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The exact mechanism is not yet known, but the loss of weight and skeletal muscle in cachexia may be due to the presence of pro-inflammatory cytokines (e.g. tumor necrosis factor alpha), a faster rate of protein catabolism and/or a slower rate of protein synthesis.<sup>13,14</sup>

Strategies to prevent or treat cachexia have not yet been determined. Nutritional interventions have only been found to preserve body fat, they have not been successful at preserving muscle mass.<sup>14, 15</sup> The best advice at this stage is for health professionals to help patients and their families understand the changes which are occurring and to be clear about the limitations of nutritional interventions.<sup>11</sup>

## End-of-life

Appetite, thirst and the ability to tolerate food and fluid reduce in the last few weeks of life.<sup>16</sup> This is a normal part of the dying process. As a person becomes more weak and drowsy, swallowing and digesting food and fluids become harder and can place a strain on the body.<sup>17</sup> This anorexia can cause the patient's family a tremendous amount of stress and anxiety, particularly if the family isn't aware, or hasn't accepted, that end-of-life is near.<sup>18</sup> The family may try to force feed the patient under the false assumption that eating will improve the patient's quality of life and/or extend survival.<sup>18</sup> Families often worry that their loved one will starve to death, but hunger and thirst are both suppressed in terminal disease.<sup>19</sup> In fact, force feeding, tube feeding and/or offering artificial hydration (e.g. intravenous; subcutaneous fluid) may actually make the dying person more uncomfortable and may even hasten the dying process.<sup>20</sup>

Dehydration when someone is at the end of their life actually has a function. It causes ketones and other metabolic byproducts to be produced which act as a natural anaesthetic and cause reduced consciousness and reduced suffering.<sup>18</sup> Force feeding or tube feeding someone at the end of their life when gastric emptying, digestion, absorption and peristalsis have

all declined, can increase nausea, vomiting, bleeding, oedema, incontinence and infections.<sup>16, 20</sup> There is no evidence that tube feeding prevents aspiration, prolongs survival, reduces the risk of pressure sores or improves function.<sup>18</sup> Artificial hydration can lead to oedema, ascites and excess fluid around the lungs making it more difficult to breathe.<sup>18, 20</sup> The best approach is for family members and carers to offer 'comfort care' - i.e. mouth care, sips of water and making food and fluid available if the patient wants them, but not to force anything.<sup>21,22</sup> A dry mouth can be managed with ice chips, lip balm and moist swabs.<sup>20</sup>

Health professionals need to speak with patients and their families well before the end-of-life period, and advise them to anticipate a reduction in eating and drinking as the person's condition deteriorates.<sup>19</sup> Health professionals can then use this time to find out what the patient's wishes are when it comes to artificial feeding and artificial hydration at end-of-life, and document these preferences as an advanced directive.<sup>18, 20</sup> When end-of-life draws near, health professionals then need to have the difficult conversation with family members to make sure they understand what is happening. This will allow families to experience less anxiety and spend their time and energy on their caretaking activities.<sup>18</sup>

## Conclusion

**Health professionals are urged to focus on the underlying reason(s) why someone has lost their appetite instead of placing all of their emphasis on food fortification and oral nutrition supplements. Patients and their families would really benefit from open and compassionate discussions with health professionals around cachexia and end-of-life, where there is little evidence to support that active nutrition interventions will have any positive impact on quality of life. All clinical commissioning groups need to ensure that they have an end-of-life strategy or pathway in place to guide health professionals as they try to navigate these challenging situations.**

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