Nutritional Support in Primary Care

This article is about nutritional support for adults.

Achieving good nutritional status is an important way to support other healthcare interventions in reducing morbidity and mortality. This can be in the form of nutritional advice, support and supplementation. Oral, enteral or parenteral nutritional support, alone or in combination, should be considered for all people who are either malnourished or at risk of malnutrition. Potential swallowing problems should be taken into account.

With increasing emphasis on patient care at home rather than in hospital, many of the issues in the community are the same as within the hospital environment. See separate Nutritional Support in Hospital article.

Both enteral and parenteral nutrition at home place a considerable burden on family or other carers, who therefore require adequate training and ongoing support. The co-ordination of patient care by a multidisciplinary nutritional care team is essential.

Identifying patients at risk

- All patients considered at risk, including elderly patients living alone and in care homes, should be screened when there is clinical concern and on admission to a care home.
- Nutritional support should be offered to people who are malnourished, as defined by any of the following:
  - A body mass index (BMI) of less than 18.5 kg/m$^2$.
  - Unintentional weight loss greater than 10% within the preceding 3-6 months.
  - A BMI of less than 20 kg/m$^2$ and unintentional weight loss greater than 5% within the preceding 3-6 months.
- Nutritional support should be considered in people at risk of malnutrition, defined as those who have:
  - Eaten little or nothing for more than five days and/or are likely to eat little or nothing for five days or longer.
  - A poor absorptive capacity.
  - High nutrient losses.
  - Increased nutritional needs from causes such as catabolism.

Epidemiology

Risk factors

- Any severe or chronic disease: eg, malignancy, chronic pancreatitis.
- Those convalescent after major surgery or severe illness.
- Difficulty with eating: eg, poor dentition, sore mouth, chewing or swallowing problems, sensory loss, disorder of upper limbs.
- Vulnerable psychosocial situation: eg, elderly living alone, people with learning disabilities living alone, poverty or social isolation, people in nursing or residential homes.
- Psychological illness: mental illness - eg, depression, behavioural eating disorders.
- Alcohol or substance abuse.

Nutritional assessment

- The assessment is based on the patient's current BMI, recent weight change and factors (eg, illness) which will have a bearing on likely requirements.
- The Malnutrition Advisory Group of BAPEN (formerly known as the British Association for Parenteral and Enteral Nutrition) has produced a screening tool for adults at risk of malnutrition in the community.
Elderly people who live alone may find it difficult to make nutritionally balanced meals for themselves. Nutritional assessment should include asking the patient about what they eat, how they buy and prepare food and whether there are parts of the process that they find difficult.[6]

Some vulnerable people may have a diet which is adequate in energy but may be lacking in vitamins and minerals such as calcium.[7, 6]

A case can be made for routine calcium and vitamin D supplementation for housebound patients or those who have other risk factors for osteoporosis, although the research has been inconclusive to date.[8, 9]

**General nutritional advice**

- First-line measures should include the use of appropriate standard foods.
- General advice includes encouragement to eat small frequent meals and snacks that are high in energy and protein but which address the special requirements of the patient - eg, diabetes or renal impairment.
- Small snacks between meals increase nutritional intake - eg, cheese and biscuits, whole-milk yoghurts or toast and peanut butter.
- Portable snacks include crackers or packets of nuts, preferably unsalted.
- Patients could also use full-fat, instead of low-fat dairy products. Those who have listened for years to the message that low-fat foods are good for you may need firmly reminding that this advice no longer applies to them.
- Milk powder may be added to fortify ordinary milk and drinks, tinned soups, mashed potatoes, cereals and puddings.
- Fortified whole milk or milkshakes between meals should be encouraged. Cream, butter and cheese can also be used to fortify foods such as soups and mashed potatoes.
- Energy sources such as sugar, honey, jam and dried fruit can be added to cereals and puddings. Pure fruit juices may also be useful.
- Simple measures such as exercise and fresh air can increase appetite.
- Eating in the company of others (eg, at day centres or luncheon clubs) may stimulate patients to eat more.
- Alcohol, in moderation, can be an effective appetite stimulant.
- Although some drugs (eg, corticosteroids) can stimulate the appetite, effects are not always immediate or long-lasting and they may cause serious adverse effects. Use is mainly confined to those receiving palliative care and is not usually recommended outside specialist centres.

**Oral supplementation with energy-rich and protein-rich foods**[10]

- In practice, commercial products provide a more reliable and acceptable method of supplementation than table foods.
- Before nutritional supplements are prescribed, patients should have tried first-line dietary measures as briefly outlined above.
- Nutritional supplements should be supplied along with appropriate dietary advice. They should not be used on a long-term basis without regular monitoring and reassessment.
- The choice of supplement depends on its nutritional profile, palatability and acceptability, as well as cost. Patient preference is important in order to ensure good compliance.
- Nutritional needs and food intake determine the number of supplements required. This should not usually exceed 500-600 kcal daily (about two cartons of sip feed), unless under the care of a dietician. Supplements should only be used as the sole source of nutrition following dietetic advice.
- Supplements should be given between meals and not with or instead of a meal. Boredom with taste and texture may be overcome by trying different flavours or types of feeds.
- Nutritional supplements available on the NHS should generally be prescribed for Advisory Committee on Borderline Substances (ACBS) approved conditions. No more than four to six weeks' supply should be given, as the patient should be reassessed after this time.

**Artificial nutritional support**

Indications include:

- Severe anorexia.
- Moderate or severe malnutrition in someone who is unable to eat a sufficient oral diet.
- The pre-operative patient who has lost 10% or more of body weight.
Inability to eat or swallow because of neurological, oropharyngeal or oesophageal disease.
- An oral diet not anticipated for more than seven days.
- Intestinal failure.

Enteral nutrition and parenteral nutrition are usually given during the night in adults when they are inpatients. This is to minimise the number of interruptions in the day which are likely to occur - eg, physiotherapy, diagnostic tests. Once they are discharged home the timing of the feed will depend upon necessary interruptions, carers’ availability (if needed) and presence of patient confusion or agitation.

Enteral feeding

- Enteral nutrition in the community is growing at a rate of about 20% per year; the most recent figures suggest a prevalence of 80 patients per million.
- Most patients who need tube feeding are admitted to hospital, usually for the management of the underlying disease.
- When their clinical condition permits it, there is evidence that nasogastric feeding can be commenced in the primary care setting - but, due to the risk of tube displacement, this is usually not a practical option and percutaneous endoscopic gastrostomy (PEG) is preferred.
- The nutrient mixture is instilled directly into, or just proximal to, the upper end of the small bowel.
- Enteral tube nutrition may be used in patients with a functioning gastrointestinal (GI) tract to supplement oral feeding or to replace it entirely. The latter is indicated for patients who require intensive protein and calorie support and who are unable, or unwilling, to take oral supplementation.
- Enteral nutrition is much safer and cheaper than total parenteral nutrition (TPN) and is the preferred route when there is adequate GI function.
- In addition to high-energy and high-protein supplements, elemental (chemically defined) diets are frequently given enterally. They provide essential nutrients in a readily assimilated form, require little or no active digestion and have minimal residue.
- Even when nutritionally complete feeds are being given, it may be important to monitor water and electrolyte balance. Extra minerals (eg, magnesium and zinc) may be needed in patients where GI secretions are being lost. Additional vitamins may also be needed.

Complications of enteral feeding:
- These are usually not serious and can be overcome with careful monitoring.
- Up to 20% of patients may have diarrhoea and GI discomfort from intolerance to a major nutrient component or to the osmotic fluid load of the formula.
- Oesophagitis is uncommon with small-bore soft tubes.
- Other possible complications include blockage of a tube, a misplaced tube or infection.
- Regular haematological and biochemical tests may be needed, particularly in the unstable patient. Close monitoring of water balance, electrolytes, osmolality, and blood urea is required in order to prevent electrolyte disturbances, volume overload and hyperosmolarity syndrome.

Parenteral nutrition

- The prevalence of home parenteral nutrition is about 4 per million and this figure has remained stable. [2]
- When adequate feeding through the alimentary tract is not possible, nutrients may be given by intravenous infusion. This may be in addition to ordinary oral or tube feeding (supplemental parenteral nutrition) or may be the sole source of nutrition (TPN).
- The most common indication for home parenteral nutrition in the UK is Crohn's disease. [2]
- Other indications include preparation of undernourished patients for surgery, chemotherapy or radiation therapy; other severe or prolonged disorders of the GI tract; major surgery, trauma, or burns; prolonged coma or refusal to eat; some patients with renal or hepatic failure.
- It is commenced in hospital.
- The management of patients who need home artificial nutritional support requires adequate co-ordination between the hospital and the primary care team. The provision of nutrient solutions is facilitated through pharmaceutical companies with home care services.

Further information can be found in the separate Enteral Feeding article.
Further reading & references

- British Association for Parenteral and Enteral Nutrition
- NDR (Nutrition and Diet Resources) UK

5. Screening for malnutrition: MUST calculator; BAPEN.

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