

NUTRITION AND THE ELDERLY

Consultant Chemical Pathologist **Ruth Ayling** looks at the diets of those over 65 years old and examines why they have different nutritional needs from younger adults.

In the UK, life expectancy has doubled over the last 200 years. At present, over 10 million of the UK population is over 65 years and the Office for National Statistics estimates that by 2046, people of this age will make up approximately 25% of the population.

Nutritional assessment

Obesity is common in the elderly. However, malnutrition is also a

significant issue, estimated to affect 10% of the elderly and up to a third of those in hospital. Both over and under nutrition are associated with medical problems of particular relevance to the health of the elderly population.

For example, undernutrition increases the likelihood of frailty, falls, hip fracture, poor wound healing, and pressure sores, prolongs hospital stay and is associated with increased morbidity. Obesity is associated with

many of the major causes of morbidity and mortality in the elderly, including diabetes, stroke and heart disease and some cancers.

Assessment of nutritional status is important and should be a routine part of all clinical care. A simple way to do this is by using the Malnutrition Universal Screening Tool (MUST), which is a five-step screening tool to identify adults who are malnourished, at risk of undernutrition, or obese. It uses body mass index, recent weight loss and the effect of any acute disease, to determine an overall risk of malnutrition and guide further management. This tool is very easy to use and has been validated for use in hospital and community settings.

Barriers to optimal nutrition

Ageing may be accompanied by many factors that can make it more difficult for nutritional needs to be met. These include social influences, such as bereavement and isolation, decreased physical functioning, cognitive decline and multi-morbidities. Factors such as poorly fitting dentures, visual issues and mobility limiting access to the shops may potentially be more readily amenable to solution than complex

medical problems. For the elderly in care homes and hospitals, there are additional barriers, which the term “organisational malnutrition” has been used to refer to.

Degenerative changes within the gastrointestinal tract have the potential to impact upon nutrition. For example, reduced muscle mass, loss of elasticity of connective tissue and decreased neuronal number may underlie changes such as dysphagia, disturbed gastrointestinal motility and constipation. Abnormal gastrointestinal function may be further exacerbated by biochemical disturbances, such as hypokalaemia, limited mobility, cognitive disorders and medications such as anticholinergic agents and opioid analgesics.

Nutritional requirements

There are relatively few detailed studies of nutritional requirements in the elderly, but it is known that requirements of at least some dietary elements differ from those of younger adults. Calorie requirements can be predicted from basal energy expenditure using formulae, such as the Harris Benedict equation, and from this it is anticipated that calorie requirements decrease as age increases.

Malnutrition and obesity are common and should be screened for in this group of the population

Protein intake is an important determinant of both muscle mass and muscle strength. Ageing is associated with loss of muscle mass, which tends to be accompanied by loss of muscle strength – a condition termed sarcopenia. Because of age-related changes in protein metabolism and reduced anabolic responses to dietary protein, a higher daily protein intake is recommended for the elderly than for younger adults, 1-1.2g/kg body weight being suggested for those who are healthy, and at least 1.2-1.5g/kg body weight for those who are malnourished or at risk of malnutrition because of illness, provided renal function is adequate.

Some specific dietary recommendations have been made with respect to daily requirements of vitamins and minerals in the elderly. Requirements for vitamin D and calcium increase for various reasons, including less efficient 1,25 hydroxylation of vitamin D by aging kidneys and reduced calcium absorption in the gut. For vitamin


B12, the recommendation with respect to quantity does not change, but it is recommended that older adults ingest foods fortified with B12 or supplements as part of their daily intake. This is because, in the elderly, hypochlorhydria is common, often as a result of atrophic gastritis, *Helicobacter pylori* or medication, and predisposes to what is termed food-cobalamin malabsorption.

This is a situation where, in the absence of sufficient gastric acid secretion, the body is unable to release vitamin B12 from protein in food to enable it to be absorbed. Such patients do not have pathologies, such as pernicious anaemia or malabsorption, hence the rationale for oral B12 supplementation.

Dietary patterns

As it is food, rather than individual nutrients, that is consumed in the diet, it is relevant to examine associations between dietary patterns and disease risk in the elderly. The Mediterranean diet, characterised by a high content of fruit and vegetables, together with fish, grains, olive oil and red wine, has received much attention in this respect and has been found to be associated with a reduction in overall mortality risk and in the incidence and mortality of cancer and cardiovascular and neurodegenerative diseases.

Conclusion

The percentage of elderly people in the UK is increasing. Malnutrition and obesity are common and should be screened for specifically in this group of the population, as there may be particular barriers to achieving optimal nutrition as a result of medical and social issues. There is evidence that recommended dietary requirements of individual nutrients are different from younger adults and that certain dietary patterns are associated with favourable health outcomes. 

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