

A photograph of a multi-generational family walking together on a grassy path in a park. From left to right: a young man in a blue and white striped polo shirt and jeans, a young woman in a white t-shirt and jeans, an older woman in a light-colored cardigan and trousers, an older man in a blue shirt and trousers, a young boy in a blue t-shirt and khaki pants, and a young girl in a striped shirt and shorts. They are all smiling and walking towards the right. The background features lush green trees and a small pond.

DAIRY AND YOUR MUSCLE AND BONE HEALTH

AHDB
DAIRY

The
Dairy Council



DAIRY, NUTRITION AND HEALTH THROUGHOUT LIFE

A healthy lifestyle and good nutrition throughout life can help us live in better health for longer, with less illness and disability in older age. Maintaining a healthy body weight and looking after our muscles and bones can help us age healthily.

Over the next few pages we will take a look at some of the issues around ageing well and how the nutrients in milk and dairy can help. Then we will explain bone health and muscle health in a little more detail before looking at the nutritional benefits of the nation's favourite dairy products.

**Milk and dairy foods provide
important nutrients for people of all
ages and stages of life.**



Please see our publication 'Dairy and Body Weight' for further information on maintaining a healthy body weight.

PREGNANCY AND BREASTFEEDING

- Nutrition is particularly important at this stage of life and women need to make sure they are meeting their nutritional requirements for both themselves and their baby.
- Iodine is important for growth and brain development in babies during pregnancy but many young and adult women do not get enough from their food. A glass of milk provides about 1/3 of their recommended daily amount.
- Calcium demands are higher during breastfeeding (an additional 550mg of calcium per day is needed in addition to the usual 700mg). 3 portions of dairy, including milk, cheese and yogurt provide about 735mg of calcium.



ADULTS

- It's important to look after our muscle and bone health as adults to help reduce our risk of age-related illness which could occur later in life.
- Milk and dairy foods provide important nutrients including protein, calcium and phosphorus which can help maintain bones.
- Milk and dairy foods also provide important nutrients, such as protein and calcium, for muscle function.



CHILDREN

- Children grow very quickly and need nutrient-rich foods.
- Milk and dairy products provide protein, calcium, phosphorus and iodine for their growth and development.



OLDER ADULTS

- Some older adults may be at risk of muscle and/or bone diseases, and malnutrition, as a result of illness, prolonged hospitalisation or mobility problems.
- Milk and other dairy products can be very useful for adding nutritional value to the diets of older people. Whole milk and whole milk products provide energy and are high in protein and calcium which can contribute to maintaining muscles and bones as we age. They also provide B vitamins and some fat soluble vitamins. Dairy can also add flavour and taste to meals and snacks.



TEENAGERS AND YOUNG ADULTS

- Having a good diet in our teenage years helps lay the foundations for a healthy adult life. Unfortunately, some teens fall short of their recommended intakes of nutrients, including calcium and iodine.
- Teenagers have high calcium demands due to rapid growth. Dairy provides protein, calcium and phosphorus which are needed for normal bone development.
- Young women who plan to have children should make sure they have a balanced and nutritious diet before becoming pregnant. Having sufficient iodine and folic acid intakes before becoming pregnant is very important because it can be difficult to correct the consequences of poor intake during pregnancy.



There are clear benefits of consuming milk and dairy foods for growth and development in children, and for helping to maintain muscle and bone health throughout life, as they contain nutrients that are important to people of all ages.



BONE HEALTH

Looking after our bones is important at every stage of life.

During childhood bones develop quickly and grow in both length and strength. The teenage years are particularly important for bone building, and calcium requirements are high at this time. Around 90% of the adult skeleton is formed by the age of 18. However, bones continue to strengthen into our thirties.

Throughout adulthood, bone needs to be maintained and continues to undergo 'remodelling' - replacing old bone with new.

After the menopause in women, and around age 50 in men, bone stores of calcium can be lost leaving bones at risk of becoming thin and more likely to fracture.

Our bones need several nutrients from our diet to grow and develop. Protein, calcium, vitamin D and phosphorus have been identified as being particularly important for bones, alongside regular exercise.

Weight-bearing activities are particularly good for bones; these include running, skipping, dancing and brisk walking.

Other lifestyle habits such as not smoking and limiting alcohol intake are also good for bone health.

VITAMIN D

Vitamin D helps our body absorb calcium. However, few foods naturally contain vitamin D so we should get this from sunshine and fortified foods. Spending some time in the summer sunshine and taking vitamin D supplements (10µg per day) during the winter months can help us meet our requirements.

DAIRY NUTRIENTS, MUSCLES AND BONES

Calcium contributes to normal muscle function

For adults, protein, phosphorus and calcium help maintain bones

Protein contributes to growth and maintenance of muscle mass in adults

Calcium helps to reduce the loss of bone mineral in post-menopausal women.
Low bone mineral density is a risk factor for osteoporotic bone fractures

Iodine contributes to the normal growth of children

CALCIUM, PHOSPHORUS AND PROTEIN CONTRIBUTE TO GROWTH AND DEVELOPMENT OF BONE IN CHILDREN



MUSCLE HEALTH

The protein we get from the foods we eat, alongside exercise, is important for muscle growth and for keeping our muscles functioning as we age.

Children and teenagers grow rapidly and need protein and calcium for growth and development of muscles. As we grow older, protein and calcium help maintain muscle function. Protein and weight bearing exercise in particular can promote growth in muscle.

Muscle loss can begin in our early forties, and affects men more often than women. Age related muscle loss can increase the risk of falls, disability, and reduced quality of life in older age.

Being physically active and having a balanced diet can help prevent muscle loss and improve muscle function.

Resistance exercise, such as weight-lifting, press-ups and heavy gardening, is believed to be the most beneficial type of activity to help prevent muscle loss.

Protein is the most important nutrient for muscle health. Guidelines recommend we have 0.75g of protein per kg of body weight per day, which is about 45g for adult women and 55.5g for adult men.

The quality of the protein is also important for our muscles, meaning the protein should contain the whole range of essential amino acids (the building blocks of protein).

Food sources of quality protein include:

- Milk and dairy foods
- Dairy ingredients (e.g. whey protein)
- Lean meat and poultry
- Fish and seafood
- Eggs
- Quinoa and soya

Other plant based foods contain some essential amino acids but not the full range so should be combined with other foods to provide a 'complete source'.



NUTRITIOUS DAIRY

Milk and dairy foods are rich in protein, calcium and iodine and a source of phosphorus, and some B vitamins. Over the next few pages we will take a look at the nutritional benefits of some of the nation's favourite dairy products.

FOR CHILDREN

Recommended portion sizes for this age group are 1/3 pint (or 3/4 glass) of semi-skimmed milk, a 125g pot of low-fat yogurt, and a small piece (20g) of hard cheese.

A 189ml carton of semi-skimmed milk can provide school age children with:

Nutrient	% of recommendation*
Protein	24%
Calcium	42%
Vitamin B2	47%
Iodine	53%
Phosphorus	41%

* Based on current recommendations for the UK population

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FOR TEENAGERS

Recommended portion sizes for milk and dairy foods to meet calcium needs for teenage girls include: 1 glass of semi-skimmed milk, a 150g pot of plain low-fat yogurt and a piece of hard cheese.

Teenage boys need bigger portions (or an extra portion) to meet their daily calcium needs (1 large glass of semi-skimmed milk, 200g of plain low-fat yogurt and a piece of hard cheese).

A 150g pot of plain low-fat yogurt provides:

Nutrient	% of recommendation*
Energy	4%
Protein	16%
Calcium**	30%
Iodine***	36%
Vitamin B12	30%
Vitamin B2	30%
Low in fat	Less than 2%

* Based on current recommendations for the UK population

** This is of particular importance as the latest survey in the UK shows that 14% of this age group do not meet their recommended calcium intake

*** 15% of this age group do not meet their recommended iodine intake

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NUTRITIOUS DAIRY

FOR ADULTS

Recommended portion sizes for adults for milk and dairy foods to help meet calcium needs are 1 glass of semi-skimmed milk, a 150g pot of plain low-fat yogurt and a piece of hard cheese.

A 30g piece of cheddar cheese can provide an adult with:

Nutrient	% of recommendation*
Energy	6%
Protein	17%
Calcium	32%
Vitamin B12	48%
Phosphorus	25%
Vitamin A (Full fat varieties only)	19%
Zinc	17%

* Based on current recommendations for the UK population

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FOR OLDER ADULTS

Recommended portion sizes for adults over 65 years for milk and dairy products to help meet calcium needs are 1 glass of semi-skimmed milk, a 125g pot of plain yogurt and a piece of hard cheese (or tablespoon of soft cheese).

A 200ml glass of milk can provide an older adult with:

Nutrient	% of recommendation*
Protein	15%
Calcium	35%
Vitamin B2	45%
Vitamin B12	100%
Iodine	44%
Phosphorus	35%

* Based on current recommendations for the UK population

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