Calcium

What is it and why is it important?

Dairy UK

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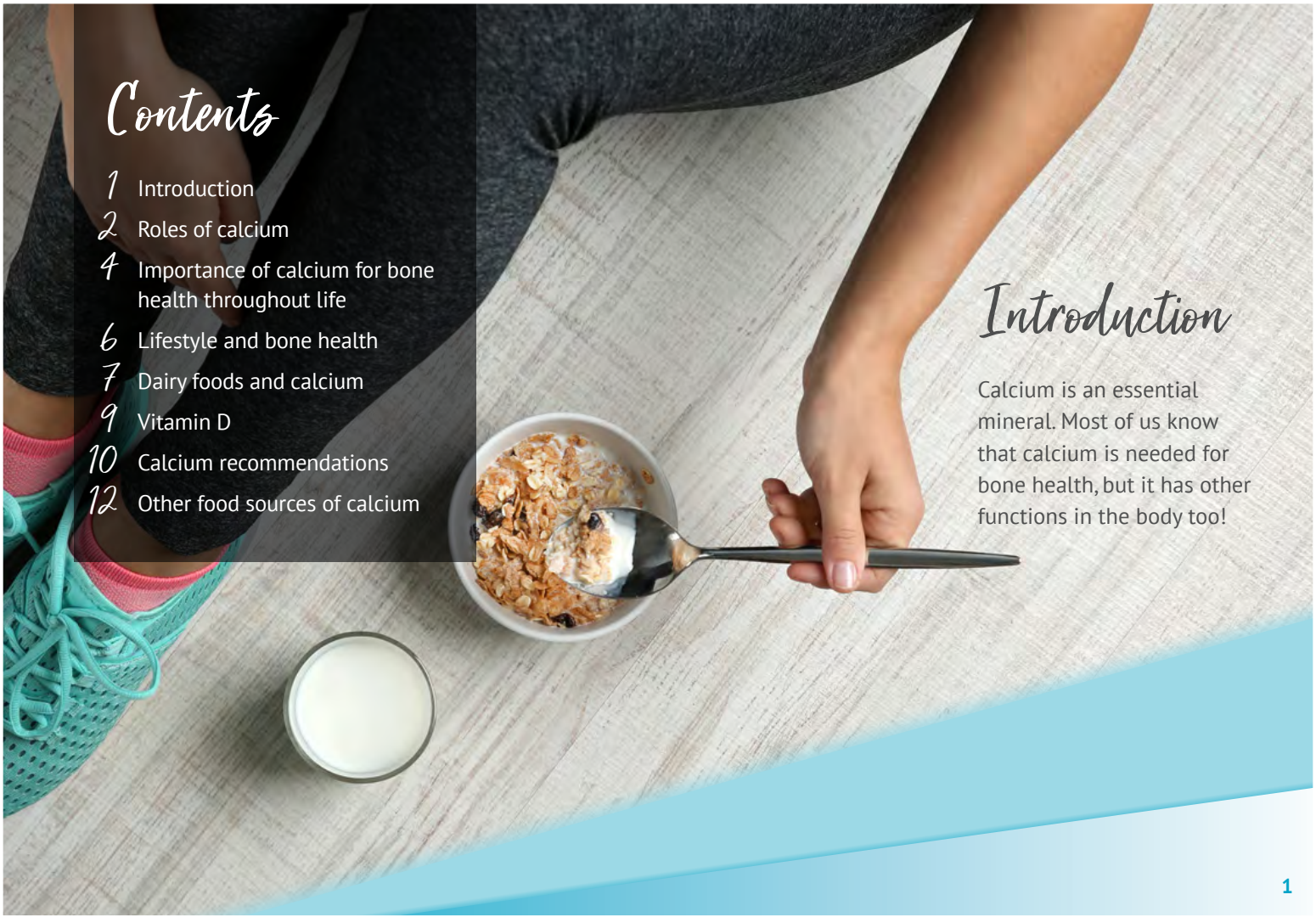


Introduction

Calcium is an essential mineral. Most of us know that calcium is needed for bone health, but it has other functions in the body too!

Roles of Calcium

Along with bone health, calcium has many other roles in the body, it:

Contributes to normal
BLOOD CLOTTING

Supports normal
MUSCLE FUNCTION

Has a role in the process of
CELL DIVISION & SPECIALISATION

Supports normal energy-yielding
METABOLISM
(the release of energy from foods)

Contributes to normal
NEUROTRANSMISSION
(the delivery of messages between nerve cells)

Supports normal function of
DIGESTIVE ENZYMES

Importance of Calcium for bone health throughout life

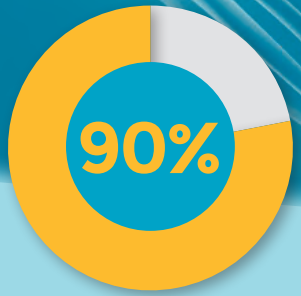
CHILDREN

Calcium is needed for growth and development of bone in children. **Physical activity** is important too!

TEENAGERS

Around 90% of the **adult skeleton is formed** by the age of 18.

Teenage girls need 800mg calcium a day and teenage boys 1000mg a day.



PREGNANCY & BREASTFEEDING

There is no increase in calcium requirements during pregnancy. Breastfeeding women need an extra 550mg calcium a day.

ADULTS

Bones **continue to strengthen** until our mid-thirties.

1200mg a day

MENOPAUSE

An extra 500mg calcium* is recommended to help reduce loss of bone mineral in **post-menopausal women.**

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

Lifestyle and bone health

Like muscles, our bones need regular exercise to keep them strong. **Weight-bearing activities**, where our feet and legs support our weight, are particularly good for bones. These include running, skipping and dancing, even brisk walking. Adults should aim for at least **2½ hours per week**, with muscle-strengthening activities that work all the major muscle groups **on 2 or more days a week**.

Not smoking and **limiting alcohol** intake are also good for bone health.

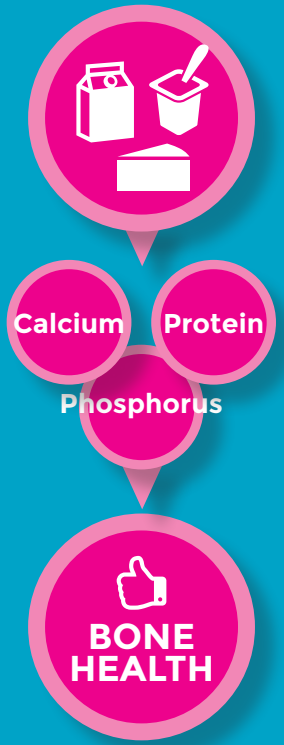
For more information on lifestyle and bone health, check out the Royal Osteoporosis Society's Bone Health Checklist: https://theros.org.uk/information-and-support/bone-health/bone-health-checklist/

Dairy foods and calcium

Including **milk, cheese** and **yogurt** in the diet is a great way to help meet our calcium needs.

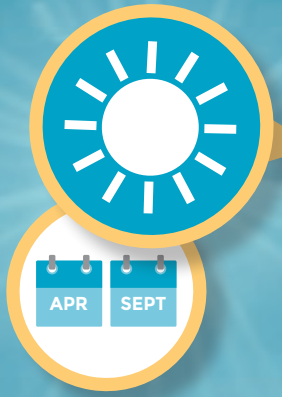
The table on page 11 shows the recommended calcium intakes for different ages, as well as the portion sizes that can help meet these needs.

Calcium isn't the only bone-friendly nutrient that milk, cheese and yogurt provide! They also contain **protein** and **phosphorus**, both of which **support the maintenance of normal bones.**



Vitamin D

Vitamin D helps the body absorb calcium from foods.



The body makes vitamin D from the **action of direct sunlight on skin.** In the UK this is possible between April and September.

However, between October and March, our bodies can't make enough vitamin D from sunlight so we need to **rely on vitamin D from the diet.**

Since few foods are sources of vitamin D, everyone over the age of 4 is advised to take a daily supplement of 10µg (micrograms) during autumn and winter. Pregnant and breastfeeding women should consider supplementation during spring and summer too.

A daily supplement of 10µg vitamin D is recommended all year round for:

- children aged 1-4 years
- adults aged 65 years and over
- people with darker skin
- people who spend lots of time indoors
- people who cover most of their skin when outdoors.

Babies under one should have 8.5-10µg vitamin D daily if they are breastfed or take less than 500ml infant formula a day (infant formula is already fortified with vitamin D).

For more information on vitamin D, visit The British Dietetic Association's Food Fact Sheet on Vitamin D (link on back page)

Calcium recommendations by age group

Age	Calcium needs (RNI*, mg/day)	Portion sizes	Calcium content (mg)
1-3 years	350	100ml whole/semi-skimmed milk 60g whole plain yogurt 15g Cheddar cheese These portion sizes provide approximately 351mg calcium	120 120 111
4-6 years	450	189ml school carton semi-skimmed milk 80g whole plain yogurt 20g Cheddar cheese These portion sizes provide approximately 535mg calcium	227 160 148
7-10 years	550	189ml school carton semi-skimmed milk 125g low-fat plain yogurt 20g Cheddar cheese These portion sizes provide approximately 578mg calcium	227 203 148
11-18 years Male	1000	284ml semi-skimmed milk 200g low-fat plain yogurt 45g Cheddar cheese These portion sizes provide approximately 998mg calcium	341 324 333
11-18 years Female	800 (extra 550mg during breastfeeding)	250ml semi-skimmed milk 200g low-fat plain yogurt 30g Cheddar cheese These portion sizes provide approximately 832mg calcium	300 280 222
19 years and over	700 (extra 550mg during breastfeeding)	200ml semi-skimmed milk 150g low-fat plain yogurt 30g Cheddar cheese These portion sizes provide approximately 705mg calcium	240 243 222

* RNI, Reference Nutrient Intake, is a figure set by the Department of Health for the amount of a nutrient that is enough to meet the dietary needs of most people (97.5%).

Other food sources of calcium

per adult portion:

Sardines (with edible bones) (500mg calcium / 100g canned)

Calcium-fortified bran cereal (99mg calcium / 30g)

Almonds* (60mg / 25g)

Sesame seeds* (67mg / 10g)

Okra* (96mg / 80g)

Red kidney beans* (canned) (25mg / tbsp)

Fortified white bread (64mg / 35g)

Kale* (120mg / 80g boiled)

A balanced and varied diet should provide enough calcium to meet our requirements. If you take a calcium supplement, make sure your total intake doesn't exceed 1500mg/day as this may cause stomach pain and diarrhoea.

Children under five years old shouldn't be given whole nuts because of the risk of choking. Those with a medically diagnosed allergy to any of the pictured foods should avoid them.

*However, these foods shouldn't be relied on as your main source of calcium. This is because they contain other compounds which can reduce the amount of calcium absorbed by the body.

Information sources

PHE & FSA (2020). National Diet and Nutrition Survey Rolling programme Years 9 to 11 (2016/2017 to 2018/2019).
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943114/NDNS_UK_Y9-11_report.pdf
[accessed 05/2022]

Public Health England (2016). Government dietary recommendations
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/618167/government_dietary_recommendations.pdf
[accessed 05/2022]

Finglas PM et al (2015) McCance and Widdowson's The Composition of Foods, Seventh Summary edition, Cambridge: Royal Society of Chemistry

Theobald H.E (2005) Dietary calcium and health - Briefing paper. British Nutrition Foundation Nutrition Bulletin 30, 237-277.

Royal Osteoporosis Society. Bone health checklist
https://theros.org.uk/information-and-support/bone-health/bone-health-checklist/
[accessed 05/2022]

Royal Osteoporosis Society. Causes of osteoporosis and broken bones
https://theros.org.uk/information-and-support/understanding-osteoporosis/causes-of-osteoporosis-and-broken-bones/
[accessed 05/2022]

British Dietetic Association (2019) Food Fact Sheet. Osteoporosis
https://www.bda.uk.com/uploads/assets/d8edf185-1b91-49ae-b7152b2071d41786/Osteoporosis-food-fact-sheet.pdf
[accessed 05/2022]

British Dietetic Association (2021) Calcium: Food Fact Sheet
https://www.bda.uk.com/foodfacts/Calcium
[accessed 05/2022]

NHS Choices. Vitamins and minerals. Calcium
http://www.nhs.uk/Conditions/vitamins-minerals/Pages/Calcium.aspx
[accessed 05/2022]

British Dietetic Association (2019) Food Fact Sheet. Vitamin D
https://www.bda.uk.com/uploads/assets/01d7715f-c4f7-42e7-96f67018f035b0ea/Vitamin-d-food-fact-sheet.pdf https://www.bda.uk.com/foodfacts/VitaminD.pdf
[accessed 05/2022]

For details on additional information sources please contact Dairy UK

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