



Dietetics Department Plant Based Sources of Calcium

Please note: This is general information and should not replace any personalised advice given to you by your healthcare team.

Why do I need calcium?

Calcium is the most abundant mineral in the body and has many functions. With around 99% of calcium deposited in bones and teeth, it is important for promoting the growth and maintenance of strong and healthy bones and teeth. It is also important for nerve and muscle function, blood clotting and the release of hormones.

Plant sources of calcium are readily available in a balanced diet and are also rich in vitamin K, potassium and vitamin C which help to keep bones healthy. However, it is important that a variety of calcium sources are consumed to avoid deficiency.

How much calcium do I need?

Our calcium needs will change at different stages throughout our life. The table below explains how much calcium our body needs depending on our age and gender.

Calcium needed (mg/day)

Age	Male	Female
0-12 months	525	525
1-3 years	350	350
4-6 years	450	450
7-10 years	550	550
11-18 years	1000	800
Adults	700	700

Calcium needed (mg/day)

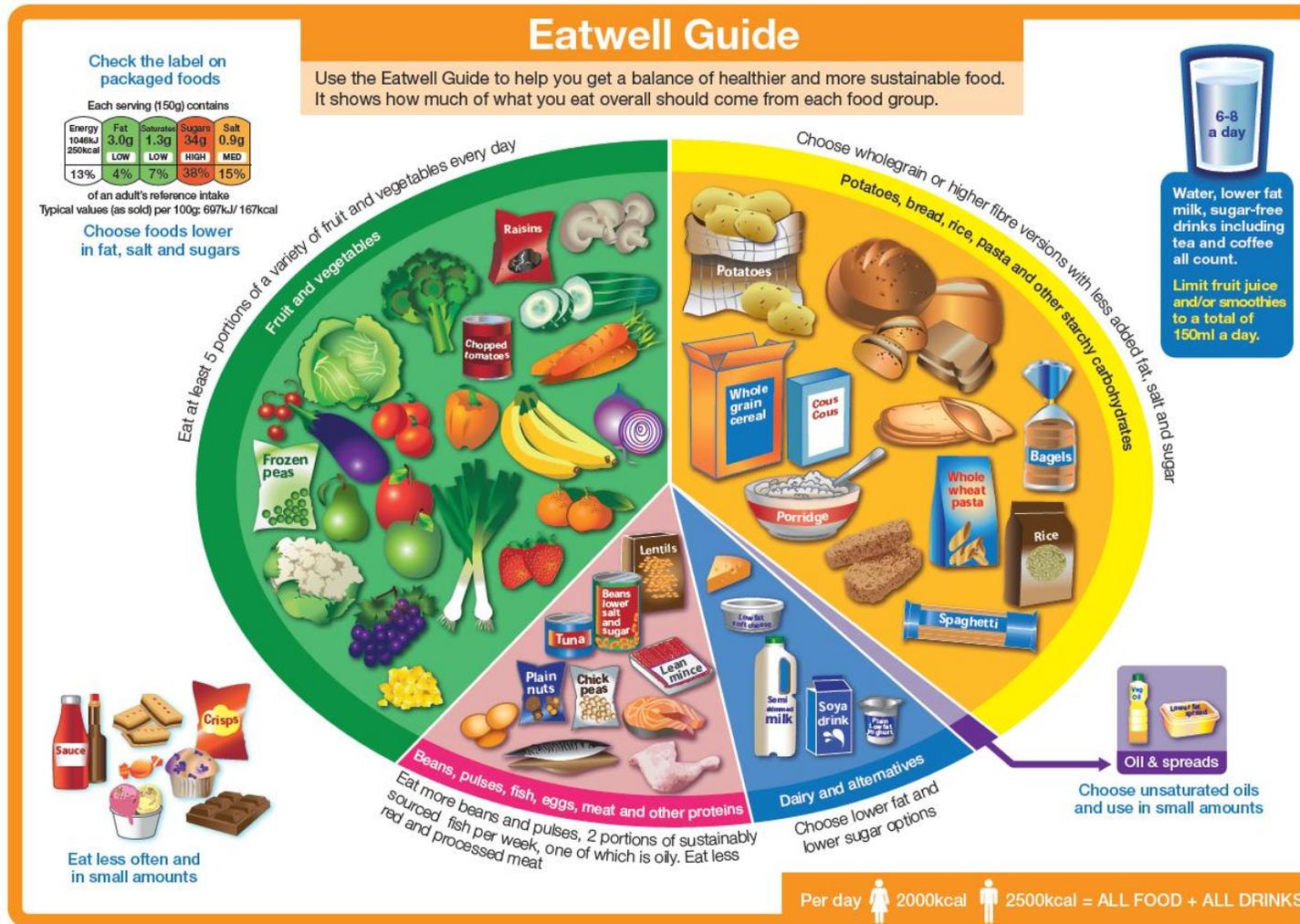
Special requirements	
Breastfeeding mums	1250
Women past the menopause	1200
Coeliac disease	1000 at least
Osteoporosis	1000
Inflammatory bowel disease	1000
Postmenopausal women and men over 55 years	1200

Which foods contain calcium?

The majority of the population choose dairy products as the main source of calcium. However, calcium is abundant in a wide assortment of vegetables.

The 'Eatwell Guide' below shows how you can achieve a varied and balanced diet to meet your nutritional needs, including calcium containing foods.

The 'Eatwell Guide' below shows how you can achieve a varied and balanced diet to meet your nutritional needs, including eating foods that contain calcium.



Source: Public Health England in association with the Welsh Government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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A larger version of this diagram from Public Health England can be found at:

www.gov.uk/government/publications/the-eatwell-guide.

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Food sources containing calcium

Plant sources of calcium are readily available in a balanced diet. However, it is important that a variety of calcium sources are consumed to avoid deficiency. See below for the different quantities of foods that contain calcium.

Beans, pulses and other plant based protein sources (*cooked)

Food choice	Portion size (28g = 1oz)	Calcium (mg)
Almonds	6 whole	24
Baked beans, in tomato sauce	small tin (150g)	78
Brazils	3 whole	17
Chickpeas*	2 tablespoons (120g)	55
Hazelnuts	25g	35
Hummus	2 tablespoons (30g)	12
Kidney beans*	2 tablespoons (120g)	44
Lentils*	3 tablespoons (45g)	7-10
Peas*	medium portion (65g)	23
Sesame seeds	1 tablespoon (15g)	100
Soya beans*	2 tablespoons (120g)	100
Sunflower seeds	1 tablespoon (15g)	17
Tahini paste	1 heaped teaspoon (20g)	136
Tofu, firm, steamed/fried	100g	320-500
Tofu, silken, steamed/fried	100g	150-200
Walnuts	3 whole (20g)	19

Potatoes, bread, rice, pasta and other starchy carbohydrates

Food choice	Portion size (28g = 1oz)	Calcium (mg)
Granary bread	1 medium slice (35g)	25
White bread	1 medium slice (30g)	33
Wholemeal bread	1 medium slice (35g)	19
Porridge made with fortified non-dairy milk	Medium bowl (75g)	105
Muesli (50g) with 125ml fortified non-dairy milk	Medium portion	200
Toasted teacake	Average 85g	83
Pitta bread, white	Average 69g	63
Tortilla chips	Small bag (25g)	38

Non-dairy milks and non-dairy alternatives

Food choice	Portion size (28g = 1oz)	Calcium (mg)
Non-dairy milks, calcium fortified (almond, soya, coconut, oat)	250ml	250-300
Soya yoghurt	Pot (150g)	180
Custard made with non-dairy milk	Medium portion (150ml)	200

Fruit

Food Choice	Portion size (28g = 1oz)	Calcium (mg)
Apricots, dried	3 medium (24g)	18
Blackberries	Handful (50g)	20
Blackcurrants	Handful (50g)	30
Clementines/sat sumas (with peel and pips)	1 average (80g)	18
Currants	1 tablespoon (25g)	23
Dates dried and stoned	4 medium (30g)	14
Figs, dried	2 (40g)	100
Grapefruit	Half (120g)	28
Kiwi	1 medium (60g)	15
Melon (cantaloupe, honeydew)	Average slice (150g)	14-30
Olives in brine	6 medium (18g)	11
Oranges (with peel and pips)	Medium (100g)	33
Prunes, dried	3 medium (30g)	10
Raisins	1 tablespoon (30g)	14
Raspberries	Average portion (60g)	15
Sultanas	1 tablespoon (30g)	19
Tangerines (with peel and pips)	1 average (80g)	25

Vegetables (*cooked)

Food choice	Portion size (28g = 1oz)	Calcium (mg)
Asparagus*	medium portion (125g)	30
Beetroot, pickled	5 slices (50g)	10
Broad beans*	2 tablespoons (120g)	67
Broccoli*	80g	32
Brussel sprouts*	medium portion (100g)	20
Cabbage*	average (100g)	42
Carrots*	medium portion (100g)	25
Celery	1 stick (30g)	12
Green beans*	medium portion (100g)	56
Kale* curly boiled	100g	150
Leeks*	1 medium (160g)	32
Mixed veg, frozen, boiled	90g	32
Okra*	3 medium (15g)	18
Onion, raw	average (90g)	23
Potatoes, old baked in skin	Medium 200g	22
Potatoes, new boiled in skin	(average portion) 200g	26
Spring greens, boiled	80g	60
Sweet potato, boiled	130g	30
Watercress	¼ bunch (20g)	34

Nutrient levels vary according to food processing method, therefore please check the label of the brand you use.

SOURCE: Public Health England (2015) McCance and Widdowson's The Composition of Foods Seventh summary edition: <https://www.gov.uk/government/publications/composition-of-foods-integrated-dataset-cofid>
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How can I maximise my calcium status?

Eat adequate quantities of foods that contain calcium - refer to the food tables and see the example below for meal ideas.

Be more physically active - bones can be kept strong through weight-bearing exercise and the government recommendation is for 5 x 30 minute of moderate activity per week e.g. running and cycling as well as day to day activities such as walking, gardening and housework. Strength training is helpful to develop muscle size e.g. gym, Pilates and yoga and it can also preserve both health and protect against osteoporosis.

Limit salt intake - salt increases calcium loss from the body in urine.

Limit caffeine - caffeine found in tea, cola, coffee and high energy drinks inhibits calcium absorption.

How do I improve the absorption of calcium from my diet?

Our body requires vitamin D to help us absorb and use calcium efficiently. We make most of our vitamin D from sunlight. Try and expose your face and forearms (without sun cream) for around 20 minutes, 3 times a week between April and October. Be careful not to get sun burnt and avoid the sun in the middle of the day in the summer months. Other sources of vitamin D include:

- Spreads and margarines (most are fortified with vitamin D but check the label)
- Mushrooms (grown under ultra violet light)
- Fortified breakfast cereal
- Fortified milks

From April to October most people can get all the vitamin D they need as mentioned above. However, during the autumn and winter it is difficult for people to get enough vitamin D from food alone. The Department of Health recommends that all adults and children over the age of one should consider taking a supplement containing 10 mcg (400IU) of vitamin D during this time.

A daily supplement is recommended all year round for those who are at risk of low vitamin D levels including:

- All pregnant and breastfeeding women
- Babies and children up to the age of 5 years
- People aged 65 years and over
- People with darker skin
- People who are rarely exposed to the sun

Do I need a supplement?

Food is the best source of all nutrients. However, for people following a very restricted diet, supplements of calcium may be recommended by your dietitian or doctor.

Children

Babies and children up to one year of age who are not breast-fed will need a suitable milk-free infant formula as non-dairy milks are *not* nutritionally complete. Non-dairy milks that are enriched with calcium can be used once a child is over one year. Depending on the child's diet it may be beneficial to continue with the milk free formula until at least 18 months of age and if a poor eater, until 2 years' of age.

Rice milk should not be given to children under 5 years' of age because of the levels of arsenic in this product.

How much calcium am I getting?

Check how much calcium you are getting by totalling up your intake of calcium rich foods on a typical day.

Food item	Amount of calcium (mg)
	Daily Total:

Meal Ideas

Breakfast Ideas

Cereal/muesli with fortified non-dairy milk

- Porridge made with non-dairy milk topped with dried fruit
- Toasted granary bread with baked beans
- Fresh fruit with soya yoghurt, sprinkled with toasted almonds
- Pancakes with dried fruit, non-dairy yoghurt and no added sugar jam

Lunch Ideas

- Tomatoes and beans on toast
- Lentil and tomato soup with granary bread
- Walnut salad with jacket potato and soya cheese
- Hummus and toasted pitta bread with sliced cucumber and carrots
- Scrambled tofu on toast with tomatoes and mushrooms
- Bean pate on cracker breads with salad

Main Meal Ideas

- Lentil rissoles with green beans, tomatoes and dressing
- Bean stew and dumplings with green vegetables
- Cannelloni filled with mixed beans, mushrooms, onions, tomatoes and topped with grated non-dairy cheese
- Roasted peppers stuffed with nuts and spinach, served with vegetable rice and fresh tomato sauce
- Chick pea curry and brown rice with salad

Snack/Pudding Ideas

- Rice pudding or custard made with non-dairy milk with dried fruit
- Non-dairy yoghurt or ice cream with stewed fruit
- Baked apple stuffed with dates and nuts
- Fruit scones with spread and jam
- Apricot and apple crumble with non-dairy cream or ice cream
- Fruit cake

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About this leaflet:

Author: Sandra Hood, Dietitian
Written: August 2018
Approved: August 2018
Review date: August 2021
Edition: v1

If you have feedback regarding the accuracy of the information contained in this leaflet, or if you would like a list of references used to develop this leaflet, please email pals@dchft.nhs.uk



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