

Calcium advice for children on a dairy-free diet

Nutrition and Dietetics

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Information for Patients

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Why is calcium important?

A balanced diet with enough calcium helps keep bones and teeth strong. It also helps prevent broken bones and reduces the chance of weak bones that break easily in later life (osteoporosis). Our bodies use calcium all the time, so we need to replace it every day, especially when children are growing.

Vitamin D helps the body absorb calcium. Children need enough vitamin D to build strong bones. You can get vitamin D from foods like:

- fortified margarine and low-fat spreads
- fortified breakfast cereals
- oily fish
- eggs

The Department of Health recommends all children aged 1 to 4 years to have a vitamin supplement containing 10 µg vitamin D a day. All babies who are having less than 500ml of infant formula a day or who are only breastfed, need 8.5 to 10µg vitamin D a day.

Sunlight on the skin also helps the body make vitamin D. In winter (October to March), the sun is not strong enough for this. The Department of Health recommends that everyone takes a vitamin D supplement during these months.

How much calcium do children need?

Some groups of people are at higher risk of calcium and vitamin D deficiency:

- children on a dairy free diet, with multiple food allergies.
- teenagers going through a growth spurt.
- black and ethnic minority groups or those that do not get enough sunlight.

If you feel you or your child are not getting enough calcium or vitamin D in your diet, you could start taking a calcium or vitamin D supplement. You can talk with your doctor or dietitian about this.

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For those not having cow's milk or milk products in their diet, you must find a suitable milk alternative to get a good source of calcium. This can be a specialist formula prescribed by your doctor **or** a milk replacement drink such as soya that has **added calcium** for older children.

How much calcium is needed in a day?

Age	Calcium (mg)
0 to 12 months	525mg
1 to 3 years	300 to 400mg
4 to 6 years	400 to 500mg
7 to 10 years	500 to 600mg
Males	Calcium (mg)
11 to 18 years	1000mg
Females	Calcium (mg)
11 to 18 years	800mg
If Breastfeeding*	1250mg

*If your baby is breastfed, you may need to remove cow's milk from your diet to stop any proteins from the dairy products passing through to your baby in your breast milk.

We recommend you having dairy alternatives which are high in calcium to make sure you are meeting your requirements.

What gives you calcium in your diet?

Dairy alternatives

Dairy alternatives are foods you can have instead of dairy. This is if you cannot have milk (lactose intolerant) or choose not to have milk (vegan diet). You can have foods that have added (fortified)

- rice milk
- oat milk
- coconut milk
- soya milk*
- soya yoghurts
- coconut yoghurts
- margarine

calcium. For example:

*Fortified, unsweetened milk alternatives can be given alongside a varied diet from 1 year of age. You can speak with your doctor or dietitian about the best milk alternative for your child's needs.

Check the nutrition label that they have added calcium. **Rice milk is not suitable for children under 4 years due to its higher arsenic content.** For younger children, breast milk and infant formula are high in calcium and should be continued until the age of 18 months. They have the right amount of nutrients needed to support healthy growth.

Fruit and vegetables

Oranges, dried fruit, baked beans, broccoli and okra have higher amounts of calcium. Most fruit and vegetables are a source of other vitamins (B, C and K) and minerals (such as magnesium). Having many different types of fruits and vegetables helps with calcium intake.

Starchy foods

Breakfast cereals often have **added** calcium, for example, Cheerios and Ready Brek (also available as supermarket own brands). Check the nutritional labels on food packaging. Not all fortified cereals will have added calcium. In the UK, white/brown flour (not wholemeal) has calcium added. This means foods made from flour will contain calcium. Some bread such as 'best of both' and 'vitamin boost' have **extra** calcium added.

Meat, fish and vegetarian protein

'Bony fish' (sardines, tinned salmon and whitebait) where the bones are eaten, are rich sources of calcium and vitamin D. Eating fortified tofu, sesame seeds (also tahini), almonds, hazelnuts, brazil nuts, ground nuts and nut spreads are good ways of increasing calcium intake through non-animal sources. These can be added to recipes as well as used as sandwich fillings.

Dairy alternatives	Portion Size	Calcium (mg)
Special infant formulas: <ul style="list-style-type: none"> • Aptamil Pepti 1 & 2, Aptamil Pepti Syneo, • SMA Althera, • Nutramigen 1 & 2 with LGG, • Nutramigen Puramino, • SMA Alfamino • Neocate LCP, Neocate Syneo, Neocate Junior • Similac Arize 	per 300ml / 9oz made up	200mg
Alpro growing up milk (soya or oat), KoKo kids/vitamin enriched milk.	100ml	120mg
Plenish enriched oat milk (gluten free).	100ml	240mg
Other fortified soya/oat milk drinks (check for calcium).	100ml	120mg
Nut 'milk drink' such as almond. Avoid 'organic' milk substitutes.	100ml	120mg
Soya or coconut yoghurt/dessert fortified. For example the Coconut Collaborative yoghurts.	120g	120mg
Soya cheese such as Cheezly, Cathedral City (plant-based), free from cheese from Asda, Sainsbury's or Tesco.	1 matchbox size	45 to 70mg
White sauce/custard made with fortified substitute milk	100ml	120mg

Fish and vegetarian protein	Portion Size	Calcium (mg)
Tinned sardines	60g	300mg
Pilchards	2 pilchards	275mg
Breaded scampi	5 pieces (160g)	150mg
Tinned salmon with bones	60g (1/2 small tin)	170mg
Fish fingers	3 fish fingers (85g)	30mg
Tofu*	50g (2 tablespoons)	150mg
1 egg	1 medium	30mg
Prawns	60g	65mg

Nuts and seeds	Portion Size	Calcium (mg)
Tahini	1 teaspoon (19g)	130mg
Sesame seeds	1 tablespoon (12g)	80mg
Chick peas	1 tablespoon (35g)	50mg
Almonds(ground)	6 whole (13g)	30mg
Almond butter	1 tablespoon	25mg
Brazil nuts (ground)	3 whole (10g)	20mg
Nut spreads or ground nuts	1 tablespoon	25mg

Vegetables	Portion Size	Calcium (mg)
Okra stir fried	60g	130mg
Curly kale	60g	90m
Spinach boiled	1 tablespoon (40g)	60mg
Baked beans	2 tablespoons (80g)	40mg
Broccoli	3 florets (60g)	20mg
Carrots	65g	20mg
Black-eyed peas	1 tablespoon	100mg

Fruit	Portion Size	Calcium (mg)
Orange juice (fortified)	1 glass (160ml)	200mg
Orange	1 small (120g)	50mg
Dried figs	1 (20g)	50mg
Dried apricots	4 (32g)	25mg
Dried mixed fruit	1 tablespoon (25g)	20mg
Sun dried tomatoes	5 (30g)	10mg
Blackberries/strawberries	10	30mg
Apple	1 medium (180g)	10mg

Desserts	Portion Size	Calcium (mg)
Vegan petit filous	1 pot (95g)	120mg
Alpro soya dessert (dark chocolate and caramel)	1 pot (125g)	150mg
Alpro vanilla soy custard	100g	120mg
Alpro greek style yoghurt plain	100g	120mg
Alpro greek style yoghurt strawberry/ mango	150g	144 to 162mg
Koko dairy free plain yoghurt	100g	160mg
Oatly yoghurt	100g	120mg

Cereals/flour	Portion Size	Calcium (mg)
Cereals: fortified such as rice krispies, multigrain shapes, Cheerios (check labels)	30g	140 to 160mg
Ready Brek (can use as flour in recipes)	1 bowl (30g)	402mg
White/brown bread	1 medium slice (28g)	40mg
Bread with added calcium (such as Hovis Best of Both Medium, Kingsmill Vitamin Boost, ASDA Free From White Sliced Loaf)	1 medium slice (28g)	150mg
Chapatti	1 small (30g)	40mg
Scone	Half (½) a scone	90mg
Apple crumble	2 tablespoon	40mg
Fruit muffin/sponge pudding	1 muffin/med square	50mg

Sources: McCance and Widdowson's (2013), Nutritics (2017). *

Ways to increase calcium in the diet

- Increase the amount of fortified milk alternatives. Include it in milkshakes, smoothies or hot drinks. Use it in cooking for puddings and sauces. Include **free from** cheese in recipes.
- Try to have 3 portions of a calcium fortified 'dairy alternative' every day. For example: dairy free yoghurt with breakfast cereal; soya cheese in a sandwich at lunch; and a small pot of soya or coconut yoghurt after their evening meal. Look out for vegan foods such as a vegan pizza that may contain soya cheese.
- Try to have 2 portions of bony, oily fish a week. The bones contain the most calcium and can be mashed. Use the fish in a fish pie, topped with mashed potato (with added substitute milk and margarine) or as pasta bake with soya cheese.

- Try stir-frying using calcium fortified tofu instead of meat.
- Sprinkle sesame seeds as a crispy topping for potato pies, fruit salads, breakfast cereals and salads.
- Add dried fruit or ground almond to breakfast cereals or baking such as muffins, scones, crumbles, pastry

Calcium supplements

If your child cannot eat a lot of different foods (multiple food exclusions) or you are concerned they are not getting enough calcium, (or have poor growth), please talk to your dietitian about taking a calcium supplement. Your pharmacist may also be able to advise on taking a suitable supplement for your child's age.

Companies that make a children's calcium supplement include:

- Haliborange (calcium softee)
- WellKids Calcium Liquid
- Osteocare Calcium Liquid
- Boots 3 years+ A-Z multivitamin and mineral
- Sainsbury's Calcium and Vitamin D tablets (**for older children**)
- Superdrug's Bone Health Calcium tablets with Vitamin D (**for older children**)

Check ingredients for milk protein or other allergens and always check if a product is suitable for your child's age.

Contact details

Nutrition and Dietetics Department: **0116 258 5400**

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