

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?

Calcium is important in a balanced diet. It keeps our bones and teeth healthy and prevents fractures. Without enough calcium, when you get older bones can become weaker and break more easily (osteoporosis). Our bodies use calcium all the time so we need to replace it regularly with a diet that includes food which contain calcium, particularly in childhood.

Vitamin D helps to increase the amount of calcium your body takes in. Make sure your child gets enough vitamin D. This can be found in

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

The way sunlight works on the skin is also an important source of vitamin D. We may advise that your child takes vitamin D if they:

- have problems getting enough vitamin D or
- belongs to a certain population group.

How much calcium do children need?

Calcium is found mainly in dairy foods. 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.

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Your doctor or dietitian may advise you take vitamin D and calcium supplements, but you should also try to increase the amount in your diet.

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

How much calcium is needed in a day?

| Age | At least |
|----------------------|-----------|
| 0 to 12 months | 525mg |
| 1 to 3 years | 300-400mg |
| 4 to 6 years | 400-500mg |
| 7 to 10 years | 500-600mg |
| Males | |
| 11 to 18 years | 1000mg |
| Females | |
| 11 to 18 years | 800mg |
| Breastfeeding parent | 1250mg |

What are the sources of calcium in the diet?

Dairy alternatives

Dairy alternatives that have added (fortified) calcium, for example: rice milk; oat milk; coconut milk; soya milk; soya yoghurts; coconut yoghurts; or margarine. 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 breastmilk or infant formula are high in calcium and should be continued until the age of 2 as the main drink if possible. They have the right amount of nutrients needed to support healthy growth (junior soya milks can be used from 1 year of age).

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). These play a part in keeping bones strong. Having many different types of fruits and vegetables helps with calcium intake.

Starchy foods

Breakfast cereals often have **added** calcium, for example, Cheerios or Ready Brek, Coco Pops (also available as supermarket own brands). In the UK, white /brown flour (not wholemeal) has calcium added so 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.

Non-dairy sources of calcium

| Food | Portion size | Calcium mg |
|--|-------------------------|------------|
| Dairy alternatives | | |
| Special infant formulas (such as Aptamil Pepti 1 & 2, SMA Althera, Alimentum, Nutramigen Puramino, SMA Alfamino, Neocate LCP and Junior) | per 300ml / 9oz made up | 200mg |
| Alpro growing up milk (soya or oat) | 100ml | 120mg |
| Oat milk, Rice milk, nut 'milk drink' (fortified) over 2 years of age | 100ml | 120mg |
| Soya or coconut yoghurt/dessert fortified | 120g | 120mg |
| Soya cheese such as Cheezly | 1 matchbox size | 60mg |
| White sauce/custard made with fortified substitute milk | 100ml | 120mg |

| | | |
|------------------------------------|----------------------|-------|
| Fish and vegetarian protein | | |
| 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 | | |
| 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 | | |
| 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 | | |
| 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 | | |
|--|----------------------|-------|
| 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 | 144mg |
| Koko dairy free plain yoghurt | 100g | 160mg |
| Actimel dairy free | 100g bottle | 120mg |
| Cereals/flour | | |
| | 30g | 150mg |
| Cereals: fortified such as Cheerios | 30g | 150mg |
| Ready Brek | 1 bowl | 350mg |
| 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 | ½ 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 your child's diet

- Increase the amount of fortified soya/rice/oat milk. Include it in milkshakes, smoothies or hot drinks. Use it in cooking for puddings and sauces.
- Or aim for 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.
- Include 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 softie)

WellKids Liquid

Osteocare Liquid

Bone support liquid (Holland Barrett)

Supermarket own brand

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 2585400

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