



GOOD Bite

for childcare staff

The low down on calcium



Calcium is needed for the normal development and maintenance of children’s bones. In addition it is found in their blood which enables the proper functioning of nerves, muscles and heart.

Ninety nine per cent of calcium is in teeth and bones providing structure and strength. Approximately 1% is found in the blood.

The skeleton is more than dry bones! It is made up of 25% water, 20% protein, 5% fat and 50% minerals (mostly calcium and phosphate). An average adult has 1.2 kg of calcium in their skeleton.

Everyone’s Skeleton is in a state of flux. Bone is being remodelled all the time. Some bone cells lay down fresh calcium salts whilst others erode redundant deposits. About half a gram of calcium is turned over each day. Bones are not just a physical support to the body, but a large reserve of calcium and phosphate on which the body can draw upon to keep the amount in the blood at the correct level.

Future Investment

Bone mass increases sevenfold from birth to puberty and a further threefold during adolescence and then remains stable until about age 50 in men and until the menopause in women. This is known as ‘peak bone mass’. After this time we can’t increase our peak bone mass - only maintain it. When children are growing, think of calcium intake being like putting deposits in the (bone) bank. The more calcium they put into the bank as children, the more benefits they’ll receive as adults, as they’ll be less likely to suffer from osteoporosis.

Before birth the foetus has its own supply of calcium assured with the mother’s body providing all it needs, even if her diet is deficient. Calcium absorption is enhanced in late pregnancy and lactation. After birth, the infant is dependent on dietary sources, usually breast milk or artificial formula. In childhood, dairy foods are the best source of calcium.

The calcium content of foods plus how available that calcium is to the body are both important. Assisting absorption of calcium is Vitamin D, proteins and lactose. Interfering with absorption are phytates, fats and oxalates. The amount of calcium absorbed varies across foods. For example, calcium may be poorly absorbed from foods rich in oxalic acid (e.g. spinach, rhubarb, beans) or phytates (seeds, nuts, grains, certain raw beans and soy isolates). Compared to milk, calcium absorption from dried beans is about 50% and from spinach, 10%. Absorption from soy milk may not be, as high as that from cow’s milk.

Calcium is lost in urine, faeces and sweat. The amount lost in urine and faeces may decrease when on low calcium diets. This may explain why people from countries with low calcium (dairy) intake have normal bone density. Perhaps some people adapt to low calcium intake.

So how much calcium do children need each day. The following table will help:

0 – 6 months	210 mg
7 – 12 months	270 mg
1 – 3 years	500 mg
4 – 8 years	700 mg

Where to get calcium from?

Dairy foods such as milk, custard, yoghurt and cheese are the richest and easiest source of calcium to absorb. Ice-cream, cream cheese, ricotta and cottage cheese provide some calcium but are not rich sources. Non-dairy sources of calcium include

- Canned fish with bones (salmon, sardines)
- Calcium fortified soy milk or rice milk

2 serves of dairy are recommended each day. At least one serve should be provided whilst in care. The following are each one serve:

- 1 cup of milk (250 mL)
- 1 tub of yoghurt (200 g)
- 2 slices of cheese (40 g)

As children only have small tummies you may find it easier to give them smaller serves spread throughout the day to give a total of one serve. The other serve will come when they are at home.

Tips for topping up on calcium

- If packing a lunch box include a serve of calcium. Some good ideas are milk based poppers, cheese sandwiches or cheese and wholegrain crackers, tub of yoghurt or custard, cheese sticks. Remember to keep lunchboxes cold so food doesn't spoil.
- Sprinkle cheese over vegetables
- White/sauces over meat and vegetables- add cheese for extra flavour
- Custard or ice-cream with canned fruit for dessert
- Smoothies
- Milk before bed
- Bowl of cereal with milk – makes a great snack not just at breakfast but anytime
- Milk based pudding, creamy rice and rice custard
- Milky soups

Important points to remember

- Butter and cream, though dairy foods contain little calcium compared to other dairy products.
- Soy milk, rice milk or other milk alternatives don't naturally contain calcium. If buying these, make sure they have been calcium fortified with at least 100 mg of calcium/per 100 mL.
- Milk makes a great drink. Serve it instead of fruit juice and cordial.

Full cream dairy products should be served to children under two years. Fat reduced milk is suitable from two years and skim or low fat from five years.

The role of childcare in promoting calcium

Childcare plays an important role in helping children achieve their peak bone mass. Many of the little things your centre does every day will go a long way in teaching children the importance of strong teeth and bones and help them meet the daily calcium requirements.

Ideas for promoting calcium while in care

- take the opportunity to discuss calcium and its role in keeping bones and teeth strong
- try taste testing some different calcium rich foods.
- colour in pictures of food which help to keep bones and teeth strong
- participate in Healthy Bones Week and Dental Health Week. This is the perfect opportunity to promote strong bones and teeth in your centre. You could get a dental hygienist to present at your centre

Put it in your Policy

Including some guidelines on calcium in your nutrition policy is a great way to ensure children are getting enough calcium while in care.

Children who are in care for 8 hours or more each day should be receiving 50% of the recommended daily intake of all nutrients. For children in long day care to get 50% of their calcium requirements, a total of one dairy food serve will need to be provided. Offering milk drinks at morning and afternoon tea and dairy based desserts is an easy way

of meeting calcium requirements.

Centres that provide food – check your menu to make sure 2 small serves or 1 adult serve of calcium rich foods are included every day. Milk drinks at morning and afternoon tea, and dairy based desserts are an easy way to meet calcium requirements. Cheese on crackers, white and cheese sauces are also good calcium rich ideas.

When food is brought from home, calcium needs should still be met. Pack cheese, yoghurt or milk. Parents will need Information and centre policy guidelines in regard to provision of calcium containing foods.



Contact Us!

This fact sheet is produced by the Central Coast Public Health/Community Nutrition Team. If you have any suggestions or nutrition topics you would like covered please contact us by telephone on 4320 3691 or fax on 4320 2828.



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