

Healthy Bones

Building and keeping strong, healthy bones continues throughout a person's life. Bones have many important roles in the body. They support your body, protect organs, help muscles work, and store calcium.

What can I do to keep my bones strong and healthy?

- Get enough calcium and vitamin D every day. Both of these nutrients help build strong, healthy bones.
- Calcium-rich foods are the best source of calcium. Calcium from foods is absorbed better than calcium from supplements.
- If you can't get enough calcium from food you will need to take a supplement. Be sure not to take more calcium than what you need for your age and gender.
- While your skin can make vitamin D from the sun, the amount you make depends on many things such as, the season, where you live, your skin tone, and if you use sunscreen. To make sure you get enough, choose foods high in vitamin D and take a supplement all year round.
- Do **weight-bearing exercises** every day. This means that your feet and legs support your weight during the activity. This includes activities such as walking, running, jumping rope, dancing, tennis, squats, and push ups.



How much calcium do I need each day?

Age	Calcium (mg/day)	Upper Limit (mg/day)
4–8 years	1000	2500
9–18 years	1300	3000
19–50 years	1000	2500
51–70 years:		
	Men	1000
Women	1200	2000
70+ years	1200	2000

How much vitamin D do I need each day?

Age	Vitamin D (IU/day)	Upper Limit (IU/day)
4–8 years	600	3000
9–18 years	600	4000
19–50 years	600	4000
51–70 years	600	4000
70+ years	800	4000

- **NOTE:** Pregnant and breastfeeding women should meet calcium and vitamin D requirements based on age.
- See the tables on pages 3 and 4 for food sources of calcium and vitamin D.
- **Don't take more than 2000 IU of vitamin D from supplements unless your healthcare provider tells you to take more.**

Food sources of calcium and vitamin D

Milk is the best source of calcium and vitamin D. Milk products such as yogurt and cheese provide calcium. Some yogurts also contain vitamin D. Check the label to see how much calcium and vitamin D is in each food.

- Aim for two to four servings of milk and fortified alternatives daily.
- Add skim milk powder to recipes or drinks to get more calcium.
- Milk products contain magnesium and phosphorus which work with calcium and vitamin D to build strong bones.
- Fortified plant-based beverages (such as soy, rice, and almond beverages) are also sources of calcium and vitamin D. Look for the word "fortified" on the label. Note that rice and almond beverages contain much less protein than soy beverages or milk.
- Cheese provides calcium but is higher in fat than milk. If you enjoy cheese often, choose lower fat varieties such as part-skim mozzarella or light cheddar.
- Calcium and vitamin D are added to some brands of orange juice and breakfast cereals. Read food labels and look for the words "fortified" or "added calcium and vitamin D".
- Juice is high in natural sugars, so limit 100% fruit juice to ½ cup per day.






- Other calcium-rich foods include tofu made with calcium, legumes (such as navy beans or soy beans) and canned salmon and sardines (with the bones). Salmon and sardines are also high in vitamin D.
- Vegetables such as spinach, chard, broccoli, and beet or turnip greens contain some calcium. The calcium from vegetables is not as well absorbed as calcium from milk products. Vegetables contain compounds that lower how much calcium your body absorbs.

Tips for kids and teens

- Flavoured milks such as chocolate or vanilla have the same amount of calcium and vitamin D as white milk, but they have more sugar. Reduce of the amount of added sugar by mixing flavoured milk with plain milk.
- Children who drink soft drinks usually drink less milk. Milk and fortified soy, rice, or almond beverages have many nutrients. Soft drinks have little or no nutrients. Limit the amount of soft drinks kids and teens drink and instead offer milk to drink with meals and snacks.
- Try a smoothie made with fruit, yogurt, and milk as a snack.



Food sources of calcium




Food	Serving Size	
Best Sources: About 300 mg calcium or more		
Cheese (Swiss, cheddar, Gouda, or mozzarella)	1½ oz (50 g)	
Goat's milk, fortified	1 cup (250 mL)	
Milk, lactose-reduced milk and buttermilk	1 cup (250 mL)	
Ricotta cheese	½ cup (125 mL)	
Skim milk powder	3 Tbsp (45 mL) (amount to make 250 mL milk)	
Soy, rice or almond beverage, fortified	1 cup (250 mL)	
Tofu made with calcium	¾ cup (150 g)	
Yogurt, plain	¾ cup (175 mL)	
Good Sources: About 200 mg calcium		
Blackstrap molasses	1 Tbsp (15 mL)	
Cheese (feta or Camembert)	1 oz (50 g)	
Cheese (parmesan)	2 Tbsp (30 mL)	
Pudding made with milk	½ cup (125 mL)	
Salmon or sardines, cooked or canned with bones (bones need to be eaten)	2½ oz (75 g)	
Soup made with milk	1 cup (250 mL)	
Yogurt, flavoured	¾ cup (175 mL)	
Sources: About 100 mg calcium		
Almonds, Brazil nuts	¼ cup (60 mL)	
Beans, navy, white or soy, cooked	¾ cup (175 mL)	
Calcium-fortified orange juice	½ cup (125 mL)	
Cheese (Brie)	1½ oz (50 g)	
Cottage cheese*	1 cup (250 mL)	
Oats, instant	¾ cup (175 mL)	
Shrimp, canned	2½ oz (75 g)	
Turnip greens, spinach or bok choy, cooked**	½ cup (125 mL)	

Nutrient amounts from Canadian Nutrient File, 2012.

***Note:** Regular cottage cheese is very high in sodium. Choose no salt added cottage cheese when possible.

****Note:** Other leafy greens such as chard, broccoli, and beet greens provide only 19 to 87 mg of calcium per serving.

Food sources of vitamin D (IU = International Units)

Food	Serving Size	
Best Sources: About 200 IU or more		
Herring, pickled*	2½ oz (75 g)	
Rainbow trout, baked or broiled*	2½ oz (75 g)	
Salmon, baked, broiled, or canned*	2½ oz (75 g)	
Good Sources: About 100 IU		
Goat's milk, fortified	1 cup (250 mL)	
Halibut*	2½ oz (75 g)	
Milk and lactose-reduced milk, fortified	1 cup (250 mL)	
Sardines*	2½ oz (75 g)	
Skim milk powder	3 Tbsp (45 mL) (amount to make 250 mL milk)	
Soy, rice or almond beverage, fortified	1 cup (250 mL)	
Sources: About 50 to 100 IU		
Egg yolks	2 large	
Mackerel*	2½ oz (75 g)	
Margarine	1 Tbsp (15 mL)	
Yogurt with vitamin D	¾ cup (175 mL)	

Nutrient amounts from Canadian Nutrient File, 2012.

***Note:** Vitamin D levels of fish vary greatly.

Other tips for healthy bones

Some medicines, such as steroids, can affect your bones. If you take these medicines, check with your healthcare provider to make sure you are getting enough calcium and vitamin D to keep your bones healthy.

Too much **alcohol**, **caffeine**, and **salt** can make bones weak.

- Alcohol should be limited to no more than 2 drinks for women and 3 drinks for men per day. To a maximum of 10 drinks per week for women and 15 drinks per week for men. One drink is 12 oz (355 mL) of beer, 5 oz (150 mL) of wine, or 1½ oz (45 mL) of liquor. Children under 18 years should not drink alcohol.
- Adults should keep caffeine intake to no more than 400 mg per day. This is about 2 to 3 cups of coffee (1 cup is 8 oz or 250 mL). Also be aware of other sources of caffeine in your diet, such as coffee-based drinks, colas, tea, energy drinks, chocolate, and some medicines.
- Children should limit caffeine to no more than 2.5 mg per kg of body weight. This is about 45 to 85 mg per day. Be sure to count all possible sources of caffeine, including chocolate, colas, and medicines.
- Limit salt (sodium) intake to less than 2300 mg per day. Use less processed and packaged foods, read labels, and choose foods lower in sodium. Look for foods with less than 5% Daily Value of sodium on the label. Don't add salt to cooking or at the table.

If I need a supplement, what should I take?

Calcium

Try to meet your calcium needs by eating calcium-rich foods first. If you have not met your calcium needs with calcium-rich foods, take a supplement for the balance to meet the amount you need. Most calcium supplements come in pills or chewable tablets. Some have vitamin D added to them; count this as part of your daily vitamin D intake.

- Look for the amount of **elemental** calcium on the label. This is how much calcium is in the supplement.
- Take a calcium supplement in a dose of 500 mg or less at one time. You may need to take the supplement two or more times in a day. For example, take one pill in the morning and one at night.
- Calcium carbonate and calcium citrate are supplements that are well absorbed by your body.



Vitamin D

Alberta Health Services recommends that all Albertans take a vitamin D supplement every day, year-round.

Age	Recommended vitamin D supplement
0–70 years	400 IU per day
70+ years	800 IU per day

- Vitamin D can be found in most multivitamins, some calcium supplements, and as a supplement by itself. Any of these forms can help you meet your vitamin D needs. If your multivitamin doesn't meet your vitamin D needs, take a separate vitamin D supplement. Don't take several multivitamins to meet your vitamin D needs.
- Vitamin D supplements usually come in pill or liquid form.

NOTE: Fish oils made from fish livers (such as cod liver oil) are high in vitamin A.

Vitamin A can harm your liver if you take too much.

While these oils are high in vitamin D, using them long term is not recommended. Ask your healthcare provider before using any fish liver oil.