



GOOD  
TO THE  
BONE

by Kylie James & Joanne Smith



**Athletes and others with SCI need to pay close attention to their bone health.**

**B**one health is important for everyone as we age and even more so for people with spinal-cord injury (SCI).

Following SCI, a person can lose anywhere from 30–50% of their bone mass and this usually occurs below the level of injury in the weight-bearing bones of the hips, thighs and shins. These weakened bones can make a person more susceptible to the development of osteoporosis and fractures. The incidence of osteoporosis following SCI can be as high as 88%.

Fractures can occur from typical injuries such as those sustained in car accidents or playing sports, but individuals with SCI are also at high risk for fragility fractures. These are low-trauma fractures that can occur when performing basic activities such as transfers, stretching, a fall from a wheelchair or even turning in bed.

When a person with SCI has a fracture he or she is susceptible to other serious health conditions such as pressure sores, blood clots, weight gain and further impairment of mobility, which can significantly impact quality of life.

The good news is there's plenty you can do to help keep your bones as strong and healthy as possible. Proper nutrition and following a good supplementation program can be a practical and cost-effective ways to help reduce the risk of bone loss and developing osteoporosis.

## Food Not Supplements

Calcium is widely known as a key nutrient in bone health.

Often, people are placed on calcium supplements to ensure they're getting enough calcium. However, research conducted by Cathy Craven, MD, and others at the University of Toronto shows it may be better to get calcium from food sources as opposed to taking a calcium supplement.

This is because the supplemental calcium may increase calcium blood levels too quickly



and increase the risk of kidney stones, bladder stones and cardiovascular disease.

Although dairy is often the go-to for calcium, it can be very inflammatory to the body (people with SCI want to avoid inflammatory foods as they tend to cause inflammation all over the body) and often contains hormones and antibiotics.

Great alternative sources of calcium include broccoli, dark, leafy greens such as kale and collard greens, as well as salmon and bone-in sardines, parsley, almonds and walnuts.

Coffee, alcohol and salt can interfere with calcium absorption. If you're a coffee lover, you'll be pleased to know that you need to drink about three or more cups of coffee before it'll start affecting calcium levels. Alcohol, however, not only interferes with calcium absorption, it can actually be toxic to bone cells.

Before supplementing with calcium, consult your health practitioner. It's best to take your



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The more soda you consume, the lower your blood calcium levels become.

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calcium in the form of citrate or microcrystalline hydroxyapatite, which are very well absorbed in the body, and take it with food to maximize absorption. Beware of calcium carbonate, it may be inexpensive, but has a poor absorption rate.

## Vitamins & Minerals

Magnesium is another key nutrient needed to help increase calcium absorption and can reduce the risk of kidney stones and heterotrophic ossification.

Consuming magnesium-rich foods such as almonds, whole grains, black beans, halibut, avocado, sunflower seeds, sesame seeds and quinoa is a good start. Before supplementing with magnesium, consult your health practitioner.

The recommended supplement dose is between 400–800 mg a day and it's best to take it with a



meal to maximize absorption. Magnesium has other benefits such as softening stools, improving sleep and reducing anxiety, muscle spasms and stress levels.

Vitamin D is also a big player for healthy bones because it helps the body absorb calcium. Unfortunately, this vitamin is not found in abundance in our food supply.

Sources of vitamin D in foods include oily fish such as salmon, cod liver oil and mackerel, egg yolks and fortified cereals and milks. The vitamin D our skin makes from the sun has a longer life cycle in the body than vitamin D from food, but this can also be tough to get if you live in colder climates.

Vitamin D is best to be taken in supplement form, although dosages will be dependent on age, skin pigmentation, geographical location, lifestyle, season and blood work. Consult your health practitioner about the right dosage for you.

## Ditch the Pop

Boron is often overlooked, but is an important trace mineral that helps reduce calcium loss from the body. It also helps activate vitamin D and estrogen, which are needed to maintain healthy bones. Foods high in boron include almonds, avocados, red apples, dried organic apricots and bananas.

Incorporating bone-boosting herbs such as rosemary, thyme and sage into your meals can help inhibit the breakdown of bone. Consuming foods high in silica such as bananas, beans, raisins and carrots help absorb calcium and



## Bone Building Smoothie

This smoothie contains calcium, magnesium, boron and silica — all nutrients that help build strong, healthy bones.

### Ingredients:

- 5 almonds (or 1 tablespoon of almond butter)
- 5 walnuts
- ¼ of an avocado
- 2 cups of spinach
- 1 scoop of protein powder
- Add water or almond milk

### Directions:

Mix in a blender until smooth.



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increase the strength and integrity of your bones. Silica can also be found in herbs such as oat straw and horsetail.

Other important items to take out of your diet are soda pop and other sparkling beverages. The phosphorous levels in these drinks are extremely high and contain no calcium. The high phosphorous levels in soda pop can cause your body to lose calcium. The more soda you consume, the lower your blood calcium levels become.

Incorporating these nutritional recommendations into your daily diet can help ensure you have healthy strong bones and reduce your risk of osteoporosis.

For more information on nutrition for bone health and other nutrition information specific to SCI, visit [eatwelllivewellwithsci.com](http://eatwelllivewellwithsci.com).

*Kylie James and Joanne Smith are co-authors of the book Eat Well Live Well with SCI and Other Neurological Conditions.*

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