



# OSTEOPOROSIS

By Louise Elliott

**More than a lack of Calcium.** Our skeletal framework is one of the most underestimated parts of the human body. Not only does it provide support and resistance for muscles to move us, but bone marrow is a source of your blood cell production and the bone matrix is also the storage house for Calcium, a mineral required to facilitate nerve firing and heart muscle contraction.

More than a rigid structure, the human skeleton is flexible too, withstanding enormous amounts of pressure that protect you every day against brain damage and vital organ harm.

Surely the value of our skeleton should not be taken for granted? However, when it comes down to one very preventable condition, Osteoporosis, we do tend to take "the brittle bone disease" rather lightly.

Like cardiovascular disease, Osteoporosis is from a process of deterioration, and in this case, one that leads to porous bones, causing fractures, pain and debilitation of lifestyle.

The cause is multifaceted and you'll be interested to know that consuming enough dairy is not the only preventative factor! Consider the following points:

Why do some native cultures that don't drink milk past infancy, not experience this debilitating condition? Yet Western cultures, like Australia, who consume copious amount of dairy foods, rate alongside countries with the highest incidence of Osteoporosis globally?

I don't wish to negate the value of dairy foods for building bones and preventing Osteoporosis; I simply wish to highlight some other forces establishing the condition, particularly in affluent societies such as ours.

If you don't have Osteoporosis or are unfamiliar with its pathology, consider your body as a house and your skeleton as the timber framework. Unbeknown to you, termites have invaded, and over time have they seriously decomposed the timberwork. Your walls then fall down.

Similar to termite damage, Osteoporosis is the slow, unidentified deterioration of bones over a lifetime, until one day the weakened structure gives way to a bump, and you experience a debilitating fracture. Please – don't be complacent about this condition! Statistically, half of Australian women and one-in-three Aussie blokes will suffer Osteoporosis by the age of sixty. And this is how it works: our bone's internal matrix is made up of the

mineral Calcium; in fact, it is the storage area for 99% of the body's Calcium supply. Consider your bones as 'Calcium banks', where deposits and withdrawals are made according to the needs of our physiology.

Over your lifetime, special cells called 'Osteoblasts' will add Calcium-based density to your bones, whilst other cells called 'Osteoclasts' will reabsorb (or break down) bone matter.

Children's bones grow due to more Osteoblasts being active in bone building and fewer Osteoclasts employed to break it down.

During this time, Calcium extracted from a child's diet will be enough for bone growth. Processing of food depletes and destroys minerals, so feed your children mostly meals that are in a natural state i.e. certified organic.

Calcium is found in some fruits, vegetables (especially green leafy types, like broccoli and kale), some nuts, salmon and sardine bones, dairy, and goat's and sheep's milk products. From the ages of mid-twenties to mid-thirties, the activity of the 'depositing' Osteoblasts and the 'withdrawing' Osteoclasts are similar, so consequently your bone density will remain relatively the same.

However, after this age more 'withdrawals' are made from the bones than 'deposits', causing the bones to slowly deteriorate. Thus, the more mineral matrix that is laid down early in life, the greater the Calcium supply available to support the natural breakdown of bone later in life. Effectively, a person can delay the onset of Osteoporosis, as well as the critical point of porosity where a fracture may occur.

After achieving a maximum bone mineral density in the formative years, it is essential to preserve this structure throughout later life.

The key to the high incidence of Osteoporosis sufferance in Western cultures, I believe, is not necessarily due to the ability to build bone during childhood, but the ability to preserve it into adulthood.

Mankind will naturally excrete Calcium from his diet that is not needed for bone maintenance, or other biological requirements. However, many factors surrounding Australian lifestyles actually accelerate the elimination of dietary minerals, and cause their leaching from bones!

Did you know that some foods, emotions and environmental factors can contribute to mineral loss? They can cause an internal, acidic environment, whereby the body removes Calcium from the bones to restore an alkaline balance.

You may be predisposing your bones to rapid Calcium loss if you frequently have any of the following habits in your lifestyle:

- Caffeinated drinks and foods (for example, coffee, tea, chocolate, caffeine-based energy drinks)
- Sugary treats
- Meals using refined flour, like white bread, cakes and biscuits
- High protein meals
- Excess dietary fat
- 'Fizzy' drinks (phosphorus beverages)
- Alcohol
- Salty foods
- Artificial Sweeteners
- Stress and worry
- Pollution and toxin exposures
- Cigarettes and drugs
- Certain medications

The above lifestyle habits typify Western cultures, and are possibly some of the greatest factors contributing to Osteoporosis in Australia.

Bone formation actually does continue into adulthood (albeit, significantly less), therefore, people can still fortify their bone density somewhat. However, once again, the Western lifestyle tends not to support this. Take for instance the amount of time we spend indoors.

Sunlight on our skin creates Vitamin D, an important vitamin necessary for Calcium to be absorbed from our diet and invested into our bones. Contrary to the 'cover-up outdoors' campaigns, we actually need some sun exposure most days of the week. How much time do you spend outdoors and uncovered? [Go to the Osteoporosis Australia

website and download the 'How much sun is enough?' flyer. It provides safe sun exposure guidance, pertinent to the time of day, month and location in Australia that you live.]

As previously discussed, emotional stress can be damaging to your bone integrity; however, exercise stress is quite the opposite. In direct response to the loads placed on them - through weight bearing exercise or the forceful pressures of muscle attachments - bones will integrate Calcium from your diet to become denser and stronger. Remember, if you find an activity or exercise easy, so will your bones; they will have no need to become stronger.

In the olden days - and in some cultures today - hard, manual labour necessitated survival; but on a positive note, it also ensured people's bones strengthened. However, most Australians today don't habitually participate in weight-bearing or resistance-based exercise. Most are sedentary (sit around a lot). All have chairs and toilets, which prevents you performing a full squat, an important action that would ordinarily, and multiple-times-per-day, cause exercise of the massive pelvic muscles that strengthen the hip socket (a primary site for osteoporotic fractures).

It is imperative that all people, from childhood through to final adulthood, regularly do weight-bearing exercise. Alongside receiving adequate sun exposure for Vitamin D production and Calcium absorption, and of course removing any of the aforementioned lifestyle habits that rapidly leach your Calcium stores; the likelihood of avoiding Osteoporosis will be dramatically improved.

Preventing porous bones is not just a case of how much Calcium you can ingest, rather how many factors in your lifestyle, over your lifetime, are not preserving it there!

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