



Health Fact Sheet

Osteoporosis

Osteoporosis is a condition of decreased bone mass and density, which leads to increased bone fragility and risk of fracture. It is a progressive disease, which affects mainly women, although men do suffer from bone loss, but mainly due to the side effects of certain drugs, nutritional deficiency or illness.

Bone is constantly restoring itself, it is dynamic. Cells called osteoblasts make bone, and cells called osteoclasts remove old bone, whose minerals are re-absorbed by the body. If bone is broken down more quickly than it is replaced osteoporosis is the result.

There is a natural decline in bone density from the forties onwards, somewhere in the region of 2% a year. There are several known types of osteoporosis with different causes. Type I is believed to be caused by hormonal changes. This leads to an acceleration in the loss of bone mineral, and is linked to the menopause. Type II is to do with dietary deficiency, particularly lack of, or lack of absorption of calcium, magnesium and vitamin D. Type III is not age related but caused by certain drugs.

Known risk factors are the following:

- Peak bone mass – the larger and denser the bones are in adulthood, the less normal bone loss will affect you. Therefore large-framed heavy women have less risk than small-framed slight women.

- Race plays a part with Caucasian, and Asian women being most likely to have problems.

- Long term digestive problems leading to poor absorption of minerals, or poor dietary habits.

- Heavy alcohol use and smoking, caffeine addiction

- Inactivity

- Never having been pregnant

- Early menopause

- Family history of osteoporosis

Diet is thought to be particularly important, as a high acid diet is thought to leach calcium from the bones in order to buffer out the acids. See factsheets Acid or Alkaline and Acid and Alkaline Table.

It is a fallacy that just taking calcium is enough to treat osteoporosis. Many other minerals are important in building bone matrix and it is important to supplement them also – magnesium, boron, potassium, folic acid, Vitamins C, D, E and K to name a few. In addition, the *type* of calcium taken is important – it should be in citrate, phosphate, chelated, lactate or aspartate form, which are more soluble and therefore more absorbable.

In addition to this, the ability to efficiently absorb nutrients has to be good. It has been shown that up to 40% of post-menopausal women are severely deficient in stomach acid which severely compromised

their ability to absorb these vital nutrients. A digestive enzyme supplement is recommended to be taken as a matter of course if there is any indication of digestive weakness – common in those over 40.

Much research has been done into the role of Vitamin D, the sunshine vitamin, and its role in controlling calcium absorption. It is required in the form of Vitamin D3 which is converted to more potent vitamin D compounds. Impairment of this process can lead to liver or kidney disorders.

Magnesium supplementation is now being thought to be as important as calcium supplementation. This important mineral is now in short supply in our food and therefore deficiency is common. Women with osteoporosis have lower bone magnesium content than those without.

Another factor which should be taken into consideration is silica. Responsible for cross-linking collagen strands it gives bone its flexibility. Supplementation of this mineral may be helpful. It has also been shown to help the body absorb calcium.

Clinical studies are also showing results with the supplementation of phytoestrogens called isoflavonoids.

Hormonal factors affecting calcium uptake include hormonal imbalance, particularly with the parathyroid and thyroid glands. Both loss of oestrogen and oestrogen dominance are also cited. With oestrogen deficiency it is posited that this makes the osteoclasts more sensitive to the parathyroid hormone, which results in increased bone breakdown. This raises blood calcium levels which then leads to depressed parathyroid hormone levels, leading to lower levels of active Vitamin D with the consequent increased excretion of calcium from the body. With oestrogen dominance it is relative to progesterone levels. When the balance is upset with high oestrogen levels (often due to HRT, the Pill, exposure to xeno-oestrogens) it affects the building of bone – progesterone is a major trigger for bone growth. The use of natural progesterone cream, prescribed by your doctor has proved four times more effective than synthetic oestrogen HRT therapy which is often prescribed for osteoporosis.

Dietary and lifestyle factors to be aware of is that high caffeine and alcohol intake affect the body's ability to absorb calcium, as does smoking. Weight-bearing exercise such as walking is important as it leads to more minerals being deposited in the bone.

With regards to drugs, those causing the most problems are anti-seizure medications, anticoagulants, and corticosteroids. In addition, if you are taking thyroid hormones, you also need to increase your calcium intake.

Recommendations

Eat a pH balanced diet.

Cut back (or out) on caffeine, alcohol and smoking

Avoid soft drinks and yeast products – they are high in phosphorus which competes with calcium for absorption

Limit your consumption of tomatoes and citrus fruits, they are thought to inhibit calcium uptake

Eat foods rich in calcium and vitamin D. These include:

Broccoli	Dark green leafy vegetables	Salmon
Sardines	Whole grains	Oats
Pineapple	Sea vegetables	Soybeans
Tahini	Sesame seeds	Poppy seeds
Cheese	Natural yoghurt	Chickpeas
Whole milk	White cabbage	Haricot beans

Water – a lot of tap water supplies have fluoride added to them. Whilst sodium fluoride was once thought to be helpful in building bone it has been shown to be an ineffective treatment for osteoporosis. Indeed high fluoride levels in the body can lead to skeletal problems. It is therefore important to ensure you have a high quality filter on your drinking water.

Supplement Regime

A good multivitamin and mineral

Skeletal Strength – a combined formula of nutrients needed to build bone matrix

Calcium Magnesium – a balanced formula of calcium and magnesium in absorbable forms

Vitamin D3

Consider also:

Horsetail & Rosemary – a good source of silica

Food Enzymes – dietary enzymes to aid with food breakdown and absorption

The following tissue salts may also be useful:

No 1 Calc Flour

No 2 Calc Phos

No 8 Mag Phos

No 12 Silica.

Herbs which contain calcium and can be drunk as teas include:

Nettle, parsley, dandelion, kelp, horsetail