

# **Osteoporosis** – *Natural prevention and management solutions by Nutritional Therapist* *Aimée Morrissey BA. Dip NT*

*Osteoporosis* literally means “porous bones” and the condition is characterised by a loss of bone minerals, density and bone strength, especially in the spine, arms and legs. The result is that bones become more fragile and susceptible to fracture. Dubbed a 'silent' disease, osteoporosis is often not diagnosed until a usually minor fall/accident causes a fracture, as there are few symptoms in the early stages. Some sufferers, but they are rare, will notice increased periodontal problems (such as loss of teeth) and changes in posture and loss of stature<sup>1</sup>. Osteopenia is the name given to the early stages of osteoporosis, and a diagnosis indicates an increased risk of the development of osteoporosis.



Osteoporosis is a common problem for menopausal women as low levels of the hormone oestrogen can lead to an accelerated loss of bone mass. It is not, however, exclusively a disease of menopausal women, and has been observed in menstruating women, men, those with a low Body Mass Index (BMI) and those suffering with eating disorders.

Some experts refer to osteoporosis as a 'paediatric, preventable disease' since we build our bone strength in childhood, reaching a peak by the time we reach age 30<sup>2</sup>. Research has revealed that osteoporosis is much more than the end result of calcium deficiency, and by ensuring a varied, healthy diet of wholefoods in combination with weight-bearing exercise and appropriate supplementation, the risk of fracture is greatly reduced in sufferers.

Osteoporosis is diagnosed by Dual Energy X-Ray Absorptiometry, commonly referred to as a DXA scan which measures bone density at various sites in the body. Scores between 0 and -1 are normal, between -1 and -2.5 indicates osteopenia and below -2.5, osteoporosis is diagnosed<sup>3</sup>. Typical medical interventions include Calcium & Vitamin D supplements, bisphosphanates such as Fosamax and, in some cases, HRT.

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<sup>1</sup> Balch, J.F. Prescription for Nutritional Healing. New York, Avery Publishing Group) 1997 p.414.

<sup>2</sup> E.M. and Levin, B Staying Healthy with Nutrition: The Complete Guide to Diet and Nutritional Medicine. California: Celestial Arts Publishing, Haas., 2006 p.578.

<sup>3</sup> Prof. Jane Plant Understanding, Preventing and Overcoming Osteoporosis, 2003, London, Virgin Books, p.5.

## **Primary causes/risk factors of Osteoporosis**

- Females – Low levels of oestrogen at menopause can lead to accelerated bone density loss
- Family history of osteoporosis/easy fracture from trips/minor falls
- Increased age – peak bone mass is usually reached at approximately .age 30, and age-related bone loss of 0.5- 1% per year begins at approximately .age 40 for men and women
- Low body weight
- Low dietary intake of Calcium/ vitamin D deficiency
- Low stomach acid production
- Lifestyle factors such as smoking, caffeine consumption, sedentary lifestyle/lack of exercise, heavy alcohol consumption and long-term use of certain medications.

## **Reducing the risk**

So, how can we help ourselves in preventing the development of the disease, or, if diagnosed, reduce our risk of fracture and/or further degeneration? The following are guidelines that should help to minimise the risk of disease and ensure bone health.

Bone is living tissue that is constantly being broken down (by cells called '*osteoclasts*') and rebuilt (by cells called '*osteoblasts*'). Normal bone metabolism is dependent on various factors, such as hormones, and liver and kidney activity. In addition, approximately a dozen nutrients are essential to maintaining optimal bone health. Of these, **Calcium**, **Vitamin D** and **Vitamin K** are among the most important. At least 1200mg of Calcium, 600i.u. (or 15mcg) of Vitamin D and sufficient Vitamin K are essential for healthy bones. Below are the best sources of these nutrients. All are available in supplement form also.

**Calcium:** *Broccoli, Kale, Sesame seeds, Almonds, Cheese (esp. Swiss Cheese), Sardines (with bones), Sunflower seeds, Dried figs, Dried apricots, Goat's milk, Cow's milk (if well tolerated, milk is a good source of Ca. The lactose in milk increases Ca absorption).*

**Vitamin D:** *15minutes of sunlight daily, if possible, as this is the best way to meet your daily Vitamin D requirements. Deficiency can result however based on latitude, season, cloud cover, use of sunscreen etc<sup>4</sup>, Egg yolk, Mackerel, Herring, Butter, Liver, Cod Liver Oil, Homogenized Milk.*

**Vitamin K:** *Cauliflower, Spinach, Brussel Sprouts, Broccoli, Alfalfa, Soya beans, Rapeseed Oil ,Green Tea*

## **Maximise gastric acid output**

Calcium needs to be ionised in an acidic medium before it can be absorbed in the small intestine. This means that adequate stomach acid (betaine HCL) is necessary for Ca absorption<sup>5</sup>. Many factors can reduce the amount of stomach acid we secrete, including age, medication use, hormonal changes, and stress. If you suffer from indigestion, burping, bloating, refluxing etc. this may indicate low stomach acid. The herb Centaurium or lemon juice in water can be taken before meals to boost stomach acid, or digestive enzyme capsules containing betaine HCL can be useful. Digestive Enzyme Liquecence is an established remedy promoting the production of stomach enzymes which aid digestion and absorption of nutrients. If, however, you are currently being treated for gastritis, acid reflux, stomach ulcers or other digestive disorders, please consult with your healthcare practitioner first.

### **Reduce the intake of foods/beverages that increase bone breakdown**

Many people eat a diet that is higher in the mineral phosphorous than calcium, and this can lead to improper bone mineralisation and a loss of bone calcium. Foods to reduce due to their high phosphorous content include **meats** (including poultry), **caffeine**, and **soft beverages**. These are also acidic foods, meaning that calcium can be leached from the bones to act as a buffer, or alkaliser. **Alcohol consumption** of 60-90ml on a regular basis has been shown to exert a damaging effect on the skeleton, even in young women<sup>6</sup>. Heavy drinking further increases bone loss, and increases the risk of falling, so reduction/elimination may be advisable for many.

### **Ensure adequate protein intake**

Protein is an essential component of bone, and so it is vital to ensure good quality protein in the diet. Some suitable sources of protein include **fish, soya bean products** including tofu and other **pulses**.

### **Supplement the vital nutrients**

Recent research published in August 2010 concluded that *low calcium intake and poor vitamin D status are key determinants of osteoporosis and fracture risk. Calcium and vitamin D supplementation is an essential component of management strategies for the prevention and treatment of osteoporosis and osteoporotic fractures. It improves bone mineralization... and prevents falls*<sup>7</sup>.

- It may be prudent then for some at-risk individuals to supplement with important bone-building nutrients. These can include the following;
- Calcium supplement including Vitamin D in addition to a multivitamin/mineral complex
- Bone Complexes that will include Calcium, Vitamins D & K, Zinc, Boron
- Bone Liquecence helps support bone function and regrowth as well assisting with calcium absorption.

### **Exercise sensibly and regularly**

Regular resistance and weight-bearing exercises are vital in building healthy bones throughout life. Some suitable exercises include hiking, dancing, tennis, hockey, jogging. These may be especially suitable in younger years. In the case of diagnosed osteoporosis, sensible exercise that minimises injury is important. Tai Chi and yoga are gentle yet effective forms of exercise that will benefit posture and the entire musculoskeletal system.

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<sup>5</sup> Staying Healthy with Nutrition: The Complete Guide to Diet and Nutritional Medicine. California: Celestial Arts Publishing Haas, E.M. and Levin, B., 2006. p.579.

<sup>6</sup> Understanding, Preventing and Overcoming Osteoporosis, 2003, London, Virgin Books, Plant. p.18.

<sup>7</sup> Lips, P., Bouillon, R., Van Schoor, N. M., Vanderschueren, D., Verschueren, S., Kuchuk, N., Milisen, K. and Boonen, S. 2010, REVIEW ARTICLE: Reducing fracture risk with calcium and vitamin D. Clinical Endocrinology, 73: 277–285. doi: 10.1111/j.1365-2265.2009.03701.x