

There are over 30 forms of HRT available in pills, patches, under-the-skin implants or gels.

Bisphosphonates are non-hormonal medicines which work by blocking the break down of bone. There are three bisphosphonates available in the UK namely, alendronate (Fosamax), etidronate (Didronel) and risedronate (Actonel).

A type of medicine called **selective oestrogen-receptor modulator** or SERM is a synthetic hormone replacement which works by copying the effects of oestrogen on the bones. This type of drug reduces the risk of osteoporosis and heart disease, but appears to not increase the risk of breast or endometrial cancers. The SERM currently available in the UK for osteoporosis is raloxifene (Evista).

Vitamin D and calcium supplements are an effective treatment to reduce bone loss in the elderly.

Calcitriol is an active form of vitamin D given to post-menopausal women who have osteoporosis in the spine. Calcitriol improves the absorption of calcium from the gut.

Calcitonin is a hormone made by the thyroid gland (a hormone-producing gland in the neck), which blocks the action of the cells that are responsible for breaking down bone. It is only available in injection form.

Testosterone can be used to treat men who are deficient in this hormone and can increase their bone density. It is available in injection or implant form.

Further information

National Osteoporosis Society

☎ 01761 471771

www.nos.org.uk

The Amarant Trust

A charity that promotes better understanding of the menopause.

☎ 01293 413000

This factsheet is based on reputable sources of medical evidence and has been reviewed by BUPA doctors. For more details of references and sources, please see our website. The content is intended for general information only and does not replace the need for personal advice from a qualified health professional.

Osteoporosis

Osteoporosis means porous bones. Bones affected by osteoporosis are less dense than normal bones. They are also more likely to break, even as a result of a minor bump or fall, or even without an injury.

It is around four times more common in women than men, and most common in women who have been through the menopause. About three million people in the UK are affected - one in three women and one in 12 men over the age of 50.

What is osteoporosis?

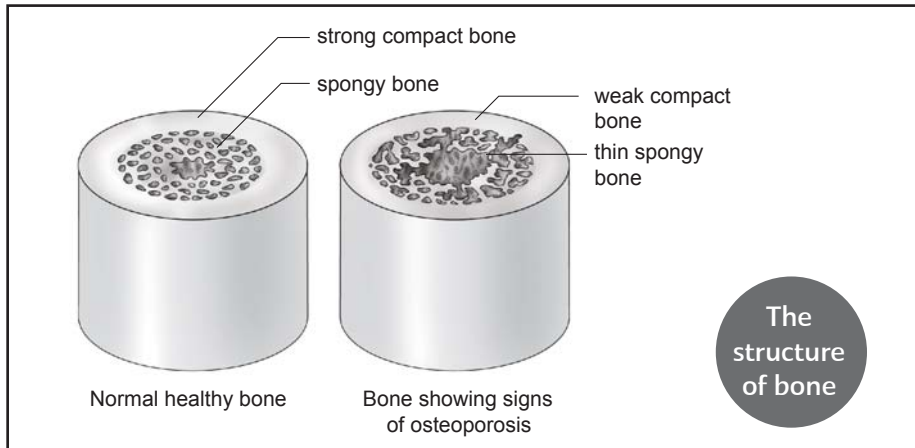
The inside of a bone consists of a strong mesh made of protein and minerals (particularly calcium). This mesh is living tissue that is constantly being renewed by a process called bone turnover. Old, worn out bone is broken down and absorbed by the body while, at the same time, new bone tissue is created from fresh protein and minerals.

In children and young people, more new bone is created than is broken down. This makes bones bigger and more dense.

The bones are at their strongest when the peak bone mass is reached, and this

usually occurs in a person's mid-twenties. Peak bone mass is then maintained for about ten years, with roughly equal amounts of bone creation and breakdown. After the age of about 35, bone loss begins to overtake creation as part of the normal aging process. With osteoporosis, the process happens much more quickly, leading to premature bone weakness.

As well as bones, such as the wrist or hip, breaking more easily than usual, osteoporosis can result in small fractures of the bones in the spine. This can cause a curved back and a loss of height.



Low levels of oestrogen

The female hormone oestrogen reduces the amount of bone that is broken down and so helps to protect against osteoporosis.

In women, the ovaries make oestrogen from puberty to the menopause. Any condition that reduces the number of years that a woman produces oestrogen tends to increase the risk of osteoporosis. These risks include:

- having an early menopause (before the age of 45),
- an early hysterectomy (before the age of 45, especially if both ovaries are removed),
- missing periods for six months or more as a result of over-exercising or over-dieting (especially due to anorexia).

Other risk factors

Men who have low levels of the male hormone, testosterone, are also at a

higher risk of osteoporosis. For both men and women, the following factors also increase the risk of developing osteoporosis:

- long-term use of corticosteroid tablets (medicines sometimes used for conditions such as severe allergies),
- a family history of broken hips,
- digestive disorders that affect absorption of nutrients, such as Crohn's disease or ulcerative colitis,
- long-term immobility,
- heavy drinking or smoking,
- very low body weight..

Symptoms

Osteoporosis has been called the "silent disease". Most people affected are unaware that their bones are thinning until they experience a break, or notice more gradual signs such as height loss, or curvature of the spine (sometimes known as 'dowager's hump').

The bones most likely to break as a result of osteoporosis are the hip, wrist and the vertebrae of the spine.

Prevention

People who reach a high peak bone density when they are young are less likely to develop osteoporosis. Bone density can be boosted by a healthy diet and regular exercise, particularly in people under 35. This means prevention needs to begin at a young age.

Diet

A varied, well-balanced diet is important to build and maintain healthy bones.

A combination of bread and cereals, fruit and vegetables, milk and dairy products, and protein (from meat, fish, eggs, pulses, nuts and seeds) should provide the nutrients that your body needs.

Foods rich in calcium are especially valuable for healthy bones. Good sources include milk and dairy products, such as cheese and yogurt.

The body needs vitamin D to absorb calcium properly. About 15-20 minutes of daylight on the face and arms during the summer months will enable the body to store enough vitamin D for the rest of the year; you don't need to sunbathe. Vitamin D is also available in foods such as margarine and oily fish.

Exercise

Weight-bearing exercise helps to promote bone formation and bone

health. Good exercises include running, skipping, aerobics, tennis, weight-training and brisk walking. Ideally, try to do this type of activity three times a week for at least 20 minutes.

If you are not used to exercising, build up your exercise routine gradually - increasing frequency before intensity. Talk to your GP before you start if you have a health problem that affects your heart or breathing.

Lifestyle

Smoking can have a harmful effect on bone and can also cause an early menopause. If you smoke, try to give up. You should also be careful not to drink too much alcohol.

Treatment for osteoporosis

There are now a number of effective treatments that can help prevent fractures and increase bone density. These include:

Hormone replacement therapy (HRT).

This prescription-only treatment aims to restore oestrogen to a pre-menopausal level. In the short term, it is taken to relieve menopausal symptoms such as hot flushes, night sweats, and vaginal dryness. Small doses over several years also reduce osteoporosis. HRT may also help reduce the risk of heart disease. Some women may experience breast tenderness and nausea as side-effects of the treatment. HRT can also increase the risk of developing breast cancer and uterine cancer, but the risk remains low.