

What is osteoporosis?

Osteoporosis occurs when the struts which make up the mesh-like structure within bones become thin causing them to become fragile and break easily, often following a minor bump or fall. These broken bones are often referred to as 'fragility fractures'. The terms 'fracture' and 'broken bone' mean the same thing. Although fractures can occur in different parts of the body, the wrists, hips and spine are most commonly affected. It is these broken bones or fractures which can lead to the pain associated with osteoporosis. Spinal fractures can also cause loss of height and curvature of the spine.

Common terms for transsexual people vary and can include 'female-to-male' for a transsexual man (trans man) or 'male-to-female' for a transsexual woman (trans woman). These may be abbreviated as M2F, F2M, MTF or F to M, for example.

The term transgender is also used more generally and includes people who haven't had any medical intervention.

Sex hormones and bones

Sex hormones are important in regulating the growth of the skeleton and maintaining the strength of bone. The female hormone oestrogen and the male hormone testosterone have effects on bone in both men and women. Sex hormones are responsible for changes in bone growth and development during childhood and adolescence. Later in life, levels of these hormones will decline naturally or might be considerably reduced following drug treatment or surgery. When levels of these hormones reduce, the protection they give to bones reduces too and bone begins to be lost more quickly.

In general women are more at risk of developing osteoporosis than men as they tend to have smaller bones and because of the accelerated loss of bone at the time of the menopause.

Are transsexual people at increased risk of bone mineral density loss?

Trans men (female-to-male) and trans women (male-to-female) are at risk of developing osteoporosis because of the need to take hormones that change the balance of oestrogen and testosterone in the body. After gender reassignment surgery, the level of hormones may decrease and this may also affect bone density. The degree to which either of these factors affect the risk of breaking a bone, however, remains uncertain.

Replacement sex hormones (testosterone for trans men and oestrogen for trans women) are necessary to maintain bone strength and are generally continued long-term. The risk of developing osteoporosis may increase if sex hormone replacement is discontinued, or if levels of replacement are too low.

Lifestyle factors can also influence bone health. Positive influences will include having a well-balanced healthy diet with enough calcium, stopping smoking and avoiding excess alcohol intake. Weight bearing exercise is important in maintaining healthy bones although some sports can be an issue for some transsexual people. Gender specific changing rooms and single sex sports teams can sometimes be seen as a barrier to being physically active.

An individual's risk of fracture will depend on their particular pattern of hormone replacement alongside the presence of other general risk factors for osteoporosis.

What is a bone density scan?

A bone density scan (dual energy x-ray absorptiometry (DXA) is the most accurate way to measure bone health. The scan measures the amount or density of bone which is a good indicator of bone strength and the resistance to fracture. The scan is a simple, painless procedure that uses very low doses of radiation and takes only a few minutes. The usual sites of measurement are the hip and lower spine but sometimes the forearm (wrist) is used. The results of the bone mineral density scan are compared with reference measurements to give an assessment of

the presence or absence of significant bone loss (osteoporosis) and also the risk of fracture.

Are there any adverse effects associated with hormone therapy?

Most people have few adverse effects taking oestrogen but fluid retention and raised blood pressure (hypertension) might be experienced. Taking oestrogen may also be associated with a small increased risk of blood clots occurring in the leg, called a deep venous thrombosis. These blood clots may sometimes travel to the lung (known as a pulmonary embolism) which can be life threatening.

As immobilisation during and following surgery could also increase the risk of a blood clot developing, oestrogen therapy may be discontinued prior to major surgery, following a discussion with your consultant. Oestrogen therapy is associated with other hormonal changes (such as raised prolactin levels), a small increase in the risk of heart disease and stroke and also, after long term use, with an increased risk of breast cancer.

Adverse effects associated with testosterone replacement therapy might include acne, increased blood pressure, a raised level of red blood cells, changes in certain fatty acids in the blood and heart disease. There may also be a small risk of thickening of the lining of the womb (endometrial hypertrophy).

Anti-androgen or gonadotropin-releasing hormone analogues (GnRH antagonists or agonists) are drugs which are used to reduce testosterone production in trans women and oestrogen in trans men and are also associated also with low bone density.

Hormone therapy should only be used with medical supervision where its effects can be monitored.

Drug treatments that reduce fracture risk for those at high risk of osteoporosis.

Several drugs are licensed for the treatment of osteoporosis and aim to strengthen existing bone, to help prevent further bone loss and, most importantly, reduce the risk of broken bones. These treatments are only available from GPs or consultants and are prescribed for those people with osteoporosis and at high risk of fracture.

All currently licensed treatments are detailed in a separate leaflet from the charity called 'Drug treatments for osteoporosis' and detailed in individual drug factsheets.

Useful contacts

The Gender Trust

76 The Ridgeway
Astwood Bank
Redditch
Worcestershire
B96 6LX

Tel: 01527 894838

www.gendertrust.org.uk

Advice and support for transsexual and transgender people, and for their partners, families, carers, and allied professionals and employers.

Gender Identity Research and Education Society (GIRES)

Melverley
The Warren,
Ashted,
Surrey
KT21 2SP

Tel: 01372 801554

www.gires.org.uk

Provides information for trans people, their families and the professionals who care for them.

The **National Osteoporosis Society** is the only UK-wide charity dedicated to improving the prevention, diagnosis and treatment of osteoporosis and fragility fractures. The Charity receives no Government funding and relies on the generosity of individuals to carry out its vital work.

For osteoporosis information and support contact our Helpline:

 **0808 800 0035**

 **nurses@nos.org.uk**

To become a member or make a donation:

 **01761 473 287**

 **join online at www.nos.org.uk**

To order an information pack or other publications:

 **01761 471 771**

 **info@nos.org.uk**

or download from our website at www.nos.org.uk

This fact sheet is one of a range of publications produced by The National Osteoporosis Society. If you would like more general information about osteoporosis see our booklet *All about Osteoporosis*.

This information reflects current evidence and best practice but is not intended to replace the medical advice provided by your own doctor or other health professional.