Osteoporosis

**What is osteoporosis?**

Osteoporosis is a condition where your bones lose strength, making you more likely to break a bone than the average adult. Osteoporosis affects around 3 million people in the UK.

**How is it caused?**

Our bones are living structures. Bones are broken down by osteoclasts and re-built by osteoblasts. In osteoporosis there is greater activity of the osteoclasts than osteoblasts causing the bones to lose density.

There are several risk factors which can increase the likelihood of developing osteoporosis. Some of these factors we are able to change, others we are unable to.

Factors we cannot change:

* Genetics
* Age
* Gender, being a woman puts you at greater risk due to the menopause
* Ethnic origin
* Previous history of breaking a bone
* Factors we can change include:
* Body Weight
* Smoking
* Slips, trips and falls
* Alcohol consumption.

There are also several medical conditions which can affect your bone health. You may wish to speak with your doctor if you have one of these conditions:

* Low levels of oestrogen in women due to: early hysterectomy, early menopause, anorexia nervosa, Turners Syndrome and/or excessive exercise
* Low levels of testosterone in men as a result of: surgery for some cancers, Kallman syndrome, Klinefelter syndrome
* Hyperthyroidism: high levels of the thyroid hormone
* Rheumatoid Arthritis (RA)
* Crohn’s or coeliac disease
* Reduced mobility, such as suffering a stroke

**What are the symptoms?**

Osteoporosis is a silent disease and often patients will not be diagnosed unless they have a fracture. An easily broken bone is often the first sign that your bones have lost strength. Strong bones should be able to withstand a bump, or the impact of a fall from standing height. So if you've broken a bone easily, speak to your doctor.

Fractures more common in people with osteoporosis include wrist fractures following a fall.

Fractures in the spine may occur and present with

* unexplained back pain
* a change in posture
* loss of height.

**How is it diagnosed?**

If you have symptoms of osteoporosis or have risk factors as above, your doctor may refer you for tests. Tests can include an x-ray, which will identify any broken bones (fractures).

You may be referred to have a DEXA or DXA scan, which identifies how much bone tissue that you have. A DEXA scan will provide you with both T and Z scores.

A T Score is based on levels which could be above or below the average young and healthy individual. If you are within range of +1 to -1 your bone strength is considered within the normal range. The more minus the number, the lower bone density, which reduces with age. If the T score is within -1 and -2.5 you are consider to have osteopenia which occurs before osteoporosis. If the T score is -2.5 you are considered to have osteoporosis. A ‘Z score’ compares your bone density to the average bone density of people the same age as you.

A low T/Z score does not necessarily mean you will have a fracture or need to begin urgent treatment. A FRAX assessment tool can also be completed in order to identify your unique risk factor, which considers age, height, weight; amongst other health screening questions. This is a useful tool to enable clinicians to see whether treatment is required.

**What can I do?**

There are many different lifestyle changes we can adopt to relieve symptoms. The Royal Society of Osteoporosis has a wealth of information regarding tips for healthy eating, vitamin D and key lifestyle changes. In particular, exercise is important in improving and maintaining bone strength and balance, which is key to prevent falls.

These exercises help to improve balance and bone strength:



Please liaise with a Physiotherapist for a bespoke exercise program. It is important that the exercises do not cause you pain that is difficult to control, if so stop and speak with your Physiotherapist.

For more information follow the link below for exercise advice and videos:

<https://theros.org.uk/information-and-support/osteoporosis/living-with-osteoporosis/exercise-and-physical-activity-for-osteoporosis/>

Pilates for Osteoporosis – Pilates is a mind and body exercise program which addresses the whole body through a series of mat-work and equipment based exercises. Exercises improve muscle strength including deep postural and core stability muscles, improves breathing, coordination, postural correction, suppleness, flexibility and mindfulness. Pilates for osteoporosis enhances bone strength, balance, core stability and postural awareness.

Thai Chi – Tai Chi is an exercise which combines deep breathing, relaxation and flow movements. These can improve balance, posture and general mobility.

Royal Osteoporosis Society – visit the website (<https://theros.org.uk>) for information on Osteoporosis and speak to specialist nurses.

**How long will it last?**

Once osteoporosis is diagnosed, there are a number of things which maintain bone density levels and prevent symptoms from getting worse.

**Is there anything I avoid?**

Be physically active and exercising following a diagnosis of osteoporosis or if you have risk factors is important towards maintaining bone strength. However, if you have spinal fractures or lots of other broken bones, you may need to modify some exercises. The Royal Osteoporosis Society has produced useful information and support regarding osteoporosis and exercise modification:

<https://theros.org.uk/information-and-support/bone-health/exercise-for-bones/>

**What other options are there?**

Your GP may recommend medication alongside lifestyle advice in order to build bone strength and reduce the risk of fracture. Medications could include those which slow down the breakdown of bone. Those with ongoing pain following a spinal fracture may be referred to an orthopaedic surgeon to discuss treatments which may relieve symptoms such as vertebroplasty or kyphoplasty.