

## What is osteoporosis?

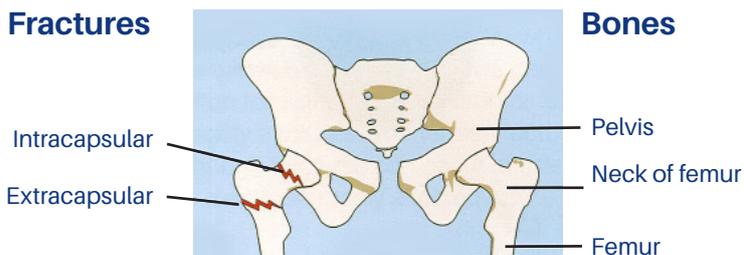
Osteoporosis occurs when the struts which make up the mesh-like structure within bones become thin causing them to become fragile and break easily, often following a minor bump or fall. These broken bones are often referred to as 'fragility fractures'. The terms 'fracture' and 'broken bone' mean the 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.

## What is a broken hip (hip fracture)?

A broken hip is a break at the top of the thigh bone (femur) where it joins the hip joint (pelvis). A number of factors can increase the risk of a broken hip (hip fracture) including osteoporosis, falling on a hard surface, falling directly onto the hip and a person's age. Women and men are at a greater risk of falling when they become older due to a loss in muscle size and strength as well as poor balance and co-ordination.

When someone breaks their hip, they usually need an operation to mend it. The operation will depend on where the fracture is located and will either pin or screw the femur together or replace the top of the femur, known as a hip replacement.

## Where do hip fractures occur?



## What are hip protectors?

Hip protectors are either padded or plastic devices which are fitted into special underwear and sit over the hip joint. They have been used widely in the past

to help prevent broken hips in older people who may break their hip by falling sideways onto the area in the hip known as the greater trochanter. The greater trochanter (shown in the diagram, bottom left) is a large bump which juts outward from the top of the femur (thigh bone) next to the neck of the femur. This is where most broken hips occur, particularly if the person has osteoporosis.



## How might hip protectors prevent hip fractures?

Different types of hip protectors can prevent hip fractures in a number of ways:

- Padded hip protectors are designed to absorb the energy of a fall.
- Semi-rigid and the older style hard shell plastic protectors work by diverting the impact away from the greater trochanter in the hip.
- Newly developed plastics which act to both absorb and disperse the energy of a fall are now being used to produce modern hip protector pads.

The pads are mostly held in position by being held in the underwear in a pocket which aims to keep the pad in place. It is important that the hip protector sits over the greater trochanter to offer the best chance of protecting you from a broken hip if you fall.

## Do hip protectors work?

A large review of hip protector studies in 2014, suggested that frail older people who wore hip protectors in nursing homes had a modest reduction in hip fracture. However there was little or no evidence of

this reduction in people who used hip protectors in their own homes. The reason for these findings is uncertain but it is possible that some individuals did not wear the hip protectors all the time or that they were not fitted properly. People in nursing homes may have benefited more because staff had been trained to fit the hip protectors and to encourage residents to wear them.

There was one other uncertainty from the review. If you redirect force from the hip with the hard or more rigid type of hip protector there may be a very small increase risk of a pelvic fracture.

### **Who might benefit from using a hip protector?**

Hip protectors may be most useful for people who are confused or have dementia, are falling often or for those frailer individuals in residential care whose bones are very fragile, especially if they have previously had broken bones. This may be because in this setting, individuals are likely to have carers who understand about the use of protectors and the importance of ensuring they fit properly.

However if you are older, living at home and at risk of a hip fracture, you may also benefit from wearing them.

### **Which hip protector should I use?**

The majority of studies measuring the number of broken hips prevented by hip protectors have used the older type hard shell hip protectors. However, experts looking at the mechanics of how the other types of protectors might work suggest they may be just as effective and that there is probably little difference between them. What is most important is how comfortable and easy they are to wear. When choosing a hip protector it might be helpful to consider which type might suit you best as they can vary in the materials they are made of, how they are cared for, their cost and general comfort.

The biggest issue with hip protectors has been comfort and fit. Correct fitting of the underpants and positioning of the pads will ensure they are comfortable and more likely to be worn whenever the person is at risk of falling, even at night. Some of the modern types of pads have ventilation channels for temperature regulation and only a small part of their surface is in contact with the skin helping to reduce heat formation and sweating. These might be more comfortable when worn for a longer time, even throughout the day and night.

Female, male and unisex versions are available and some are produced to be used when also wearing incontinence pads. You might wish to check the protectors are easy to pull up and down. It can be a good idea to try one pair first for comfort before committing to buying any more. You may need to consider if one pair is enough or whether to buy one

to wear and have an extra pair to wash. Some of the detachable protector pads are fitted into pockets in pairs of underpants which can be washed separately and can provide a more economic option than pads that are sewn into each pair of underpants.

Some modern types of plastic pads claim that they continue to be effective after a fall impact making them better value in the long term.

### **How else can you avoid breaking a hip?**

Reducing the risk of falling may reduce the risk of broken hips for many people. Regular physical activity can help to improve mobility, balance and muscle strength, which all contribute to preventing falls. The National Osteoporosis Society has a separate exercise booklet with information for people with varying levels of ability.

Many older people have low vitamin D levels and there is evidence to suggest that a supplement of this vitamin with calcium may reduce fracture rates in older, frailer people. There are also osteoporosis drug treatments available that reduce the risk of broken hips. Practical measures to reduce your risk of falling include wearing flat, well-fitting shoes, avoiding mats on polished floors and making sure your glasses are kept clean and you regularly see an optician. Further advice on preventing falls can be obtained from your GP, practice nurse or health visitor.

### **Other protectors**

Some work is going on to develop other protectors such as wrist guards but further information on their effectiveness is required before they can be recommended.

### **Contacts**

For more information about the prevention of falls, contact:

**Age UK**  
**Tel: 0800 678 1174**  
**[www.ageuk.org.uk](http://www.ageuk.org.uk)**

For information about hip protectors contact:

### **Royal Society for the Prevention of Accidents (RoSPA)**

Head Office  
RoSPA House  
28 Calthorpe Road  
Edgbaston  
Birmingham  
B15 1RP, UK  
**Tel: 0121 248 2000**  
**[www.rospace.com](http://www.rospace.com)**

## RoSPA in Scotland

43 Discovery Terrace  
Heriot-Watt University Research Park  
Edinburgh  
EH14 4AP

## RoSPA in Wales

2nd Floor  
2 Cwrt-y-Parc  
Parc Ty Glas Cardiff Business Park  
Llanishen  
Cardiff  
CF14 5GH

## Disabled Living Foundation (DLF)

Unit 1, 34 Chatfield Road,  
Wandsworth,  
London  
SW11 3SE

**Helpline Tel: 0300 999 0004 open 10am-4pm**  
**<http://www.dlf.org.uk/>**

The DLF provide clear, practical advice on daily living equipment including hip protectors. You can speak to them by telephone or view their webpages called 'Living made easy'. See the sections called 'Clothing for protection' then 'Hip protectors'. These contain information, manufacturers' contact details and approximate prices on a number of different hip protectors. **[www.livingmadeeasy.org.uk](http://www.livingmadeeasy.org.uk)**

### Examples of hip protector products:

**HipSaver** - soft padded hip protectors in many styles  
Win Health Ltd  
**Tel: Freecall UK 0808 168 5522**  
**[www.winhealth.com](http://www.winhealth.com)**

**Fall-Safe®** - hip protectors of a new material which are soft and flexible  
Hip Impact Protection Ltd.  
**Tel: 07784220713**  
**[www.hips-protect.com](http://www.hips-protect.com)**

**Safehip®** - hip protectors made of a breathable textile  
**Tel: 0845 122 3600 / 01482 670100**  
**Email: [safehip.ordersuk@bsnmedical.com](mailto:safehip.ordersuk@bsnmedical.com)**

**BSN Medical Ltd**  
**Tel: 0845 122 3600**  
**[www.safehipstore.co.uk](http://www.safehipstore.co.uk)**

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](mailto:nurses@nos.org.uk)**

### To become a member or make a donation:

 **01761 473 287**

 **join online at [www.nos.org.uk](http://www.nos.org.uk)**

### To order an information pack or other publications:

 **01761 471 771**

 **[info@nos.org.uk](mailto:info@nos.org.uk)**

**or download from our website at [www.nos.org.uk](http://www.nos.org.uk)**

**The Hip Shield** - honeycomb structure pad that compresses on impact. Available via the internet.

Some hip protectors carry a CE Mark awarded by the Medicines and Healthcare Products Regulatory Agency (MHRA). This mark demonstrates that the protector pants have undergone a clinical evaluation for safety but does not provide proof that the product will prevent your hip from breaking.

### Disclaimer:

*The National Osteoporosis Society provides the details of other organisations for information only. Inclusion in this factsheet does not constitute a recommendation or endorsement.*

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.**