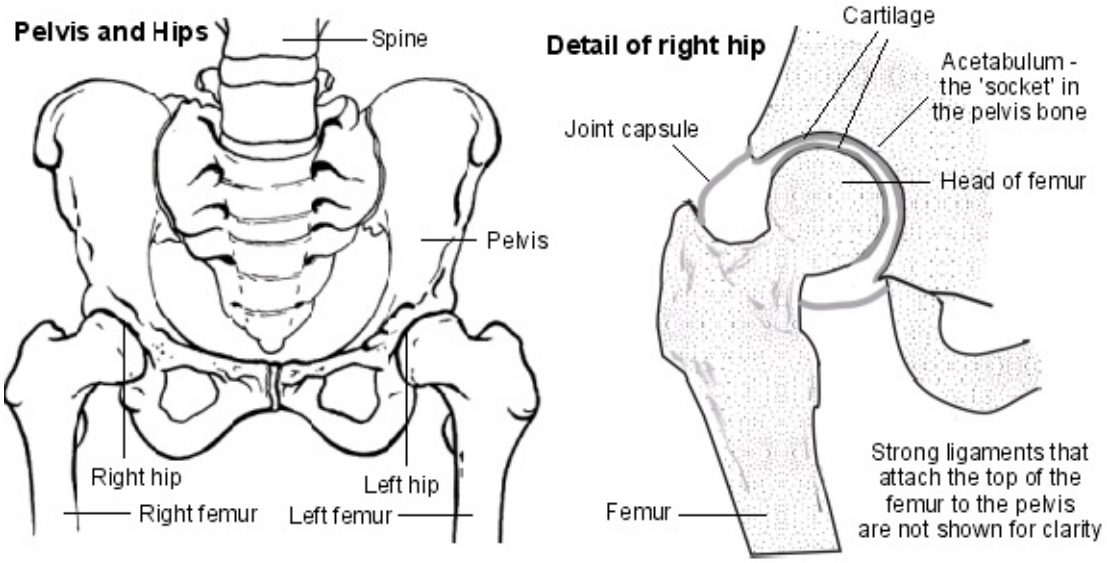
Hip Fracture

A hip fracture is another term for a broken hip. It is a common injury in older women with underlying 'thinning' of the bones (osteoporosis). Your hip can break in different places: A hip fracture can be within the joint capsule (intracapsular) or outside the joint capsule (extracapsular).

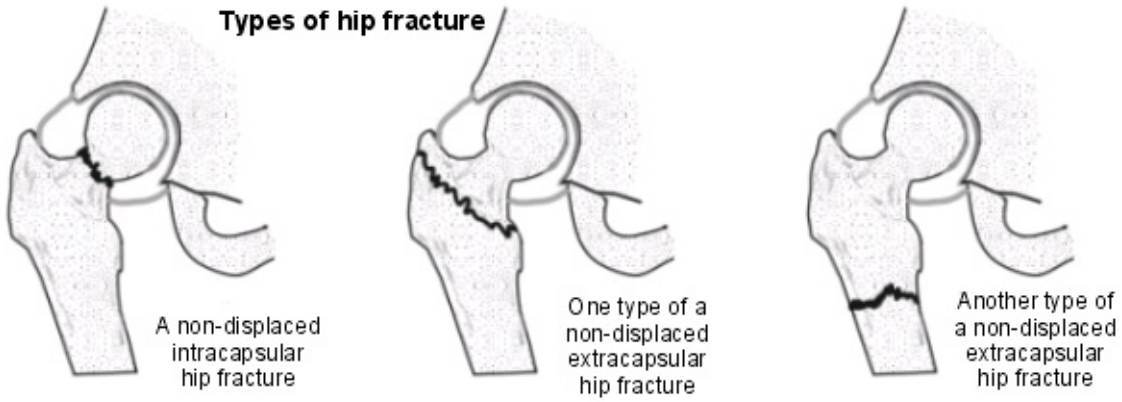
Most people who have a hip fracture need an operation by an orthopaedic surgeon to fix the break in the bone. Whether your fracture is intracapsular or extracapsular will determine the exact treatment that the surgeon suggests. Any underlying osteoporosis should also be treated after a hip fracture, in order to reduce the chance of it happening again.

Some details on hip structure (anatomy)

Your hip joint is known as a ball and socket joint. The ball (head) of your thigh bone (femur) fits into the socket of your pelvic bone to make your hip joint. This socket is called the acetabulum. There is a strong but flexible joint capsule that surrounds the hip joint. It helps to give stability to the joint and also produces a fluid called synovial fluid to give lubrication and help joint movement.



What is a hip fracture?



A hip fracture is another term for a broken hip. Your hip can break in different places. A hip fracture can be:

- Intracapsular: the bone within the joint capsule breaks.
- Extracapsular: the bone outside the joint capsule breaks.

The site of your hip fracture can determine the treatment that the orthopaedic surgeon suggests (see below).

Your hip fracture can also be displaced or non-displaced:

- A displaced fracture is a fracture where the broken bones have moved out of their normal position. If the bone fragments have moved, they need to be put back (reduced) into their normal alignment.
- In a non-displaced fracture, the bone fragments, even though they are broken, are still aligned in their normal position.

How common is a hip fracture?

Hip fracture is a very common injury mainly affecting older people. It is one of the most common reasons for being admitted to a bone (orthopaedic) treatment ward in a hospital. Around 75,000 hip fractures are treated each year in the UK. However, given the UK's ageing population, this number is predicted to double by 2050.

About 8 in 10 people who fracture a hip are women. The average age of someone who fractures their hip is 80 years.

What causes a hip fracture?

For most older people, a hip fracture happens after a fall, usually just a fall from standing. 'Thinning' of the bones (osteoporosis) is the leading cause of hip fracture. If you have osteoporosis you are more likely to fracture your hip when you fall. Osteoporosis means that your bones have become less dense and more honeycombed. This makes them more fragile, so that less force is needed to break them. (See separate leaflet called Osteoporosis for more detail.)

There are a number of reasons why an older person may fall. It may be a simple trip over a loose rug or an item of furniture. However, sometimes there may be a medical reason for a fall such as low blood pressure, a heart rhythm abnormality, or a faint. If you fracture your hip, the doctors will usually try to work out why you may have fallen. Any underlying problem may need to be treated.

Hip fracture can also occur in younger people. In these cases, it is more likely to be caused by trauma such as a car crash or a fall from a significant height. The denser bones of younger people mean that greater force is needed to break a bone as large as the hip bone.

What are the symptoms of a hip fracture?

If you break (fracture) your hip you will feel a lot of pain around the injured hip. Typically this is most pronounced over the outer upper thigh or in the groin. You will be unable to move your hip, stand or walk. The affected leg often looks shorter and is turned outwards compared to the other leg. You may also feel light-headed, both due to pain and also because broken bones may bleed internally and this can cause your blood pressure to fall.

What should I do if I am concerned that I have a hip fracture?

If you think that you may have broken (fractured) your hip, you need to go to hospital as soon as possible. In most cases, this will mean calling 999/112/911 for an ambulance, as it is unlikely that you can be comfortably moved without a stretcher. Whilst waiting for the ambulance to arrive, do not try to move. You should also try to keep warm; covering up with a blanket may be helpful.

Do not eat or drink anything while you are waiting for the ambulance to arrive. When the ambulance arrives, you may be given some pain relief for the journey, sometimes as a painkilling gas to breathe. You will be carried on a stretcher to the ambulance and taken to hospital.

What happens when I arrive at hospital?

You will usually be seen in the Accident and Emergency department and assessed quickly. You may be given some further pain relief medication, if needed, and sent for an X-ray to look at your hip. If you are lacking in fluid in the body (dehydrated), you may be given some fluids via a drip into one of your veins (intravenous fluids). You will then usually be seen by an orthopaedic surgeon who will decide the best way to treat your broken (fractured) hip - see below. Another specialist may also see you to assess whether you have any pre-existing health problems. This is to make sure that you are as fit as possible before you have any operation, and also to look for reasons why you may have fallen.

Occasionally, a hip fracture cannot be seen on a standard X-ray. If you have hip pain and have fallen, the doctors will want to be certain that you have not broken your hip. You may therefore be offered a magnetic resonance imaging (MRI) scan, which gives more detailed information about the hip joint and soft tissue around it. If an MRI scan is not suitable for you or if it is not available within 24 hours, a different type of scan called computed tomography (CT) will be offered.

What is the treatment for a hip fracture?

Most people who have a broken (fractured) hip need surgery to fix the break in the bone. The type of surgery will depend on where you have broken your hip bone (whether you have an intracapsular or extracapsular fracture) and also any underlying health problems that you may have. You should discuss the options available with the surgeon who is performing your operation. Current guidelines from the National Institute for Health and Care Excellence (NICE) recommend that surgery should be performed, if possible, on the day of, or the day after, admission to hospital. The guidelines also say that adequate pain relief before and after surgery is essential. However, non-steroidal anti-inflammatory medicines are not recommended, as they may increase the bleeding associated with the fracture.

Intracapsular hip fractures

Non-displaced fractures

Usually, if you have a non-displaced intracapsular hip fracture, you will have an operation to join together and hold in place the broken bone fragments. This is known as internal fixation. Various devices can be used to provide the fixation, including screws, nails, plates and rods. Internal fixation like this enables quicker healing of the broken hip bone and usually allows you to become mobile again more quickly.

Sometimes, a non-displaced intracapsular fracture is treated conservatively. This means that no operation is done and your hip bone is left to heal naturally. However, if this is the case, your stay in hospital tends to be longer. There is a risk that the bone fragments move so that the hip fracture becomes displaced. Conservative treatment is usually reserved for people who have severe underlying health problems or who are very frail, who would not be able to go through an operation.

Displaced fractures

If you have a displaced intracapsular hip fracture, the bone fragments need to be re-aligned. They can then be fixed in place during an operation using internal fixation, as described above. Sometimes, a hip replacement is used to treat a hip fracture. Hip replacement is also known as hip arthroplasty. During a hip replacement, the surgeon removes parts of the bones that make up your hip and replaces them with artificial hip parts, also called prostheses. In a total hip arthroplasty, both sides of the hip joint are replaced (the ball, or head, of the thigh bone (femur) and the acetabulum socket). In a hemiarthroplasty, only the head of the femur is replaced by a prosthesis.

If you already have pre-existing hip joint disease such as osteoarthritis, and you are reasonably active and otherwise well, a total hip replacement is often a good option to treat a displaced intracapsular hip fracture.

Extracapsular hip fractures

An operation is needed to treat extracapsular hip fractures. A special screw called a sliding hip screw is usually fitted to hold the bone fragments in place. Sometimes a nail (called an intramedullary nail) is used instead.

Types of anaesthetic used in hip fracture surgery

Spinal or epidural anaesthesia is often used during hip fracture surgery. In both of these you remain awake during your surgery. For a spinal anaesthetic, a local anaesthetic drug is injected through a needle into the small of your back to numb the nerves from your waist downwards for two to three hours. For an epidural anaesthetic, a small plastic tube (an epidural catheter) is passed through a needle into the small of your back. Through this tube, you are given local anaesthetic and pain-relieving drugs. Again, it produces numbness in your lower body. Unlike a spinal anaesthetic, an epidural anaesthetic can be topped up and so the effects last longer than with a spinal anaesthetic.

Sometimes, you may be given a general anaesthetic for surgery after a hip fracture. This is an anaesthetic where you are put to sleep.

What happens after surgery for a hip fracture?

After surgery you will usually be taken from the operating theatre to an orthopaedic ward. You will be given pain relief as needed. Oxygen therapy (via a facemask or nasal cannulae) is usually given. A drip to give you intravenous fluids will also be required by most people.

After surgery, you should be offered rehabilitation treatment, including physiotherapy, which should start on the day after surgery. A physiotherapist will assess you and offer mobilisation (exercises to help promote strength and recovery), unless there is a medical or surgical reason not to. You should be offered supervised mobilisation at least once a day and have regular physiotherapy reviews. You may also be seen by an occupational therapist to help you reach your maximum level of function and independence after your hip break (fracture). They can help with any adaptations that may be needed around your home to allow you to return home safely.

Some hospitals have specialised rehabilitation wards that are set up to help elderly people who have sustained injuries including hip fractures.

Treatment of any underlying osteoporosis

If you are an elderly person who has broken your hip, it is common for there to be underlying 'thinning' of the bones (osteoporosis). Depending on your age, you may be referred for a special dual-energy X-ray absorptiometry (DEXA) bone scan to look for any evidence of bone thinning and osteoporosis. However, women over the age of 80 almost all have a degree of osteoporosis, and so this bone scan is usually only suggested for people under the age of 75.

Treatment of osteoporosis is commonly with a medicine in the bisphosphonate group of medicines. These are often prescribed with dietary supplements of calcium and vitamin D.

Are there any possible complications after a hip fracture?

Complications that may occur in some people following a broken (fractured) hip include:

- **Infection** - you may be given some antibiotics to try to prevent infection (such as wound infection) after surgery to treat a hip fracture. Pneumonia is another infection that can occur after a hip fracture.
- **Deep vein thrombosis (DVT)** - a DVT is a blood clot in a vein, usually a leg vein. It can be caused by immobility. As you will be more immobile after a hip fracture, you are at increased risk of developing a DVT. For this reason, you will also usually be given some blood-thinning medication to help prevent DVT after you have a hip fracture. (See separate leaflet called Deep Vein Thrombosis for further details.)
- **Blood loss** - this can occur after a fractured hip. Because of possible blood loss, you may need fluid replacement via a drip. Sometimes a blood transfusion is needed.
- **Fracture non-union** - this occurs when the bone fragments of the fracture do not heal or join back together in the normal way.
- **Avascular necrosis** - this is more likely if you have an intracapsular hip fracture. The blood supply to the head of the thigh bone (femur) is damaged by the fracture. Without blood, the bone tissue can die back and crumble. This can lead to problems including persistent (chronic) pain around the hip.
- **Pressure ulcers** - a pressure ulcer is an ulcerated area of skin caused by irritation and continuous pressure on part of your body. If you are not very mobile and are spending long periods in bed or in a chair (as you are after a hip fracture), you are at increased risk of developing a pressure ulcer. (See separate leaflet called Pressure Ulcers for more details.)

What is the outlook (prognosis) after a hip fracture?

This can depend to some extent on how fit you were before you broke (fractured) your hip. However, even the fittest of people do not always regain full mobility afterwards. If you were less fit when you broke your hip, you may find that after a hip fracture, it becomes difficult for you to live independently.

Some people need extra care when they move back home after a hip fracture. Others may need to move into a residential or nursing home so that they can get the extra care with mobility that they need.

Some people have persistent pain in their hip area after a fracture. If this is severe you should seek medical advice.

Can a hip fracture be prevented?

'Thinning' of the bones (osteoporosis) complicated by a fall is the most common underlying cause of a broken (fractured) hip. Prevention of a hip fracture is aimed at trying to prevent osteoporosis, at treating any osteoporosis that is already present, and at trying to prevent falls.

The separate leaflet on osteoporosis discusses its prevention in detail. But briefly, osteoporosis prevention includes:

- Regular weight-bearing exercise such as brisk walking, aerobics, dancing, running.
- Ensuring adequate calcium and vitamin D intake (possibly with supplements).
- Smoking and alcohol can affect your bones and make bone loss worse. If you smoke, you should make every effort to stop. If you drink heavily you should cut down.

There are a number of ways to reduce the chances of having a fall. They include:

- Looking at any particular hazards in your home, such as loose rugs or furniture.
- Having a regular check of your eyesight.
- Seeing your doctor regularly for a review of your medication, your blood pressure and your general health.
- Attending a falls clinic or having physiotherapy for exercises to improve your balance and strengthen the leg and core muscle which you use to balance with.
- Walking aids if your balance is poor.

If you are concerned that you are at risk of falling, you should discuss this with your doctor or social worker.

A note about hip protectors

In the past it has been suggested that wearing special padding around your hip (known as a hip protector) might reduce the chance of breaking a hip if you fall. Early reports of some trials suggested that this was a good idea. However, further trials suggested that hip protectors are not effective in preventing a broken hip in those who live at home. Their effectiveness for patients who are particularly frail - for example, those living in a nursing home - is uncertain.

Further reading & references

- Management of hip fracture in older people; Scottish Intercollegiate Guidelines Network - SIGN (June 2009)
- Osteoporosis - primary prevention; NICE Technology Appraisals, January 2011
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