Vertebral Compression Fracture

**What is a vertebral compression fracture?**

The human spine is made of 24 spinal bones, called vertebrae. Vertebrae are stacked on top of one another to create the spinal column. The front part of the vertebrae is called the body of the vertebra.

In a healthy person this ‘body’ is composed of dense bone and is very strong. However it can become damaged by injury or weakened by disease. If it breaks or collapses (gets squashed) this is called a Vertebral Compression Fracture (VCF). The site of fracture more commonly occurs in the mid back and lower back.

**How is it caused?**

High energy trauma - A physical injury in which there is a very large force, for example as a result of a car accident, can cause a fracture to one or more vertebrae

Low energy trauma - A fracture can occur in your back which you may not be able to pinpoint to a specific injury/event. These fractures happen because your bones are weaker than normal, most commonly because of a condition called osteoporosis (reduced bone density) and less commonly due to cancerous or non cancerous tumours.

**What are the symptoms?**

Spinal fractures may be asymptomatic, but certain signs and symptoms may be present;

* Sudden severe or chronic back pain
* Change in the shape of your spine (more flexed/rounded)
* Loss of height
* Difficulties with balance, mobility and even breathing

**How is it diagnosed?**

A physical exam, together with an x-ray, can help determine whether you have a spinal fracture. Occasionally an MRI or CT scan is needed. If your GP or health professional is unsure why the fracture has occurred a blood test may also be carried out.

**Are there symptoms I should be worried about?**

In the majority of people spinal fractures are very stable and heal without complication. Very occasionally broken bone fragments can press on the spinal cord or lower spinal nerves and produce leg numbness and pain. These symptoms should improve. Very occasionally the nerves are more affected and you may notice lower leg weakness. If this happens we need to see you urgently.

Very rarely the nerves supplying your bladder and bowel may also be affected causing a condition known as Cauda Equina Syndrome. This requires emergency treatment. If you experience any of these symptoms you should visit the Emergency Department for assessment:

* New, significant pain, pins and needles or numbness in both legs
* Loss of feeling or pins and needles between your inner thighs or around genitals
* Numbness around your back passage or buttocks
* Difficulty trying to start, stop or control flow of urine
* Loss of sensation passing urine
* Leaking of urine or not knowing your bladder is empty or full.
* Inability to stop a bowel motion or leaking
* Loss of sensation passing a bowel motion
* Change in ability to achieve an erection or ejaculate
* Loss of sensation in genitals during sexual intercourse

**What can I do?**

In most cases vertebral compression fractures heal on their own with conservative treatment.

Exercise

You do not need to wait 6-12 weeks for your fracture to heal before you start exercising. It is important to start gentle exercises as soon as you feel able which will help to improve muscle tone, ease tension and reduce muscle spasm in your back. The following two exercises are exercises that are safe to do following your fracture:



For further information about exercise please click on the following link:

<https://theros.org.uk/information-and-support/osteoporosis/living-with-osteoporosis/exercise-and-physical-activity-for-osteoporosis/caring-for-your-back/exercises-for-back-pain-after-spinal-fractures/>

Pain relief

A vertebral compression fracture can be very painful and unlike some fractures sustained in other parts of the body cannot be immobilised and offloaded easily therefore activities like sitting and standing may be very uncomfortable. It is important to take adequate pain relief in order to maintain your mobility.

Some people manage with simple over the counter medication such as paracetamol or ibuprofen but other people will require stronger analgesia only available on prescription. It is important you discuss the benefits/risks with your GP and only take prescription medication that has been prescribed to you.

Activity modification

It is important to be as active as pain will allow. Avoiding activity completely can weaken your bones further and in some cases result in muscle weakness and joint stiffness which can contribute to ongoing pain after the fracture has healed. You should refrain from heavy lifting (more than a kettle) and repetitive bending in the first few weeks as this can put a lot of strain through the healing bone and cause more pain.

Sleep positions

It may be helpful to use extra pillows to support your knees and spine when you sleep to help reduce pain. Try placing a pillow under your knees when sleeping on your back or a pillow between your knees if sleeping on your side.

Lifestyle changes:

Reducing (or quitting) smoking – smoking reduces the density of bone and therefore can make them more susceptible to fracture. If you require any help with this then contact your GP or the hospital smoking cessation support team.

Reduce alcohol intake – excessive drinking can also weaken bones. Try cutting down the number of days when a drink is consumed per week and the amount of drinks per day. Please contact your GP if you require some help.

For more general information about managing daily living following a spinal fracture visit:

<https://theros.org.uk/information-and-support/osteoporosis/living-with-osteoporosis/recovering-from-a-broken-bone/spinal-fracture/>

Prevention and treatment of osteoporosis

Osteoporosis is one of the main causes of a vertebral compression fracture but not everyone with osteoporosis will sustain a fracture. One in two women and one in five men over the age of 50 will break a bone, mainly because of poor bone health.

If you have sustained a low energy fracture you may be offered a bone health review to assess your risk of further fractures. A bone density scan (DXA) may be recommended as part of this.

If your bone density is low or you are considered at high risk of developing a further fracture you are likely to be prescribed bone preservation medication and be given advice to optimise your bone health. Your GP will provide you with this.

**How long will it last?**

A vertebral compression fracture generally takes between 6-12 weeks to heal. In some cases, you can expect to recover well from a spinal fracture. Occasionally, the pain doesn’t go away completely.

If your symptoms persist despite applying the advice in this leaflet then you may wish to consider other options for helping control your pain.

**What other options are there?**

Physiotherapy:

Physiotherapy is available if you need further support with your rehabilitation. The aim of physiotherapy is to help you regain your mobility and independence after your fracture by providing you with advice and a structured rehabilitation programme. If you require a mobility aid such as a walking stick this can also be provided if deemed appropriate.

Please click on the link below and complete a self referral form if you would like to receive physiotherapy input:

[https://eput.nhs.uk/our-services/essex/west-essex-community-health services/adults/rehabilitation/musculo-skeletal-physiotherapy/](https://eput.nhs.uk/our-services/essex/west-essex-community-health%20services/adults/rehabilitation/musculo-skeletal-physiotherapy/)

Surgical Intervention:

Sometimes surgery may be considered in the treatment of vertebral fractures if you have:

* Severe ongoing pain after a recent, unhealed vertebral fracture despite optimal pain management
* If the pain has been confirmed to be at the level of the fracture by physical examination and imaging.

You will be referred to a specialist orthopaedic spinal surgeon if surgery is being considered.

There are two main types of surgery to treat vertebral fractures:

Vertebroplasty is the injection of bone cement into the vertebral body in order to relieve pain and/or stabilise the fractured vertebra.

Kyphoplasty is a variation of this procedure using a high-pressure balloon inside the vertebral body to create a space in which to put the cement, and sometimes to try to restore or increase the height of the vertebral body to normal or nearly normal.

These procedures are done through a tiny incision on the skin- one or two for each bone that is treated.  A needle is placed into the vertebral body using X-ray guidance and the procedure is carried out through the needle.

Surgery is primarily aimed at relieving pain, which should help improve your mobility, and secondarily to prevent further vertebral collapse.

There are risks and benefits with all surgery. These will be discussed with you by your consultant.

**Useful Websites**

Royal Osteoporotic Society- <https://theros.org.uk/>

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