Wedge Fractures

This leaflet gives you information about wedge fractures and what you can do to help manage the symptoms you are experiencing.

What is a wedge fracture?

A wedge or compression fracture refers to a break in one of the bones of the spine, called the vertebra. Wedge fractures can either be the result of trauma such as falling onto your bottom, or due to a weakening of your bones through conditions such as osteoporosis.

How is a wedge fracture diagnosed?

Compression fractures are usually diagnosed by the combination of the symptoms you describe and a physical assessment. Wedge fractures can be seen on spinal X-rays, where the wedge shaped vertebra is visible. On rare occasions, if there is concern over the cause of the fracture an MRI scan might be arranged.

What's wrong with me?

It is possible that healthy young adults can sustain a wedge fracture through trauma, however they are most likely to occur as we get older. This is because as our bodies age, the balance of hormones that maintains tissue health changes, causing loss of bone strength. This is a normal part of the aging process, however when someone loses a certain amount of bone density, it is termed osteoporosis. Certain medications such as steroids also make bones weaker.

Osteoporosis is usually symptom free, and doesn't cause pain until a fracture occurs. Osteoporotic fracture can either be the result of trauma or following normal daily activities such as bending or lifting. These are termed fragility fractures.

How can this affect me?

A wedge fracture leads to a loss of vertebral height, and can cause the vertebra to lose their square appearance, becoming wedge shaped. They can occur anywhere in the thoracic (middle) or lumbar (lower) part of your spine.

This can cause you to become shorter and for the shape of your posture to change, leading to some people developing a stooped (bent forward) posture over time. In some cases this could lead to long term (chronic) back pain, shortness of breath, indigestion and in women stress incontinence.

How long will it take to get better?

As with other fractures they generally heal normally over six to eight weeks, although the change in shape of the bone is irreversible. Though in some cases this may take longer. Conditions such as osteoporosis can gradually worsen over time, but generally respond well to conservative management.

It can however take several months of exercise, pacing and pain medication before you start to see improvements in your bone density and function. It is therefore important you perform exercises regularly for this period to see your symptoms improve.

What I can do to help myself get better?

Although the effects of a wedge fracture can sound scary, undertaking the right management approach means it does not necessarily need to affect your quality of life. They are not dangerous, your spine is still strong and you should remain as active as possible.

While it is common that people in pain will look for someone to get rid of their pain, it is more effective to find a strategy that allows you to be in control and manage your symptoms. Most people with wedge fractures can successfully manage their symptoms with simple strategies, called conservative treatment options.

A combination of supplements, medication with the right type of exercise can help you increase your bone density, improve your movement and reduce pain. Balance exercises are also very important for the prevention of fractures by reducing your risk of falls. Even if you are older, your body will still respond to exercise.

Conservative treatment options

1. Managing pain

   Pain medication is usually most effective when combined with an exercise programme. Should you need help with your pain:

   - Take mild painkillers such as paracetamol or ibuprofen
   - Ask your GP or pharmacist about using a combination of tables
   - Discuss nerve pain modifying drugs with your GP if you have severe nerve pain

   Drug free approaches such as a TENS machine can be effective at helping to block the feelings of pain. The use of heat or ice may also help to reduce pain.

2. Other medications and supplements

   The National Institute for Health and Care Excellence (NICE) has made recommendations about who should be treated with medication for osteoporosis. A number of factors are taken into consideration before deciding which medication to use, including your:

   - Age
   - Bone mineral density (measured by your T-Score)
   - Risk factors for fracture

   Your GP will be able to advise what medication is best for you.

   Calcium is the building blocks of our bones, while Vitamin D is needed for our bodies to absorb it. Although supplements that contain calcium and vitamin D, such as Adcal D3 are important for maintaining bone health, you should look to get these from your diet.

3. Pace yourself

If you have not exercised before, or are returning to activity after experiencing an wedge fracture, then it is advisable you follow the principles of pacing. Do this by establishing what you can do already, for example:

At the moment, I can…

Walk for	*minutes*
Stand for	*minutes*
Lift	*kg / lbs from one table to another*

Once you know what you can do, create a plan to increase it. Begin by doing less than you do at present (say 80%), but do this more frequently through the day. Increase this gradually every few days to improve your activity tolerance.

4. Exercise

Exercising can seem daunting, especially if you have pain and stiffness, however it is one of the most important elements of managing a wedge fracture. In the initial stages the level of pain you are experiencing may mean that you are only able to perform basic movement exercises. Exercises in the water, such as hydrotherapy are a gentle and comfortable way of starting to exercise again.

As your fracture heals and pain starts to settle, you should look to perform weight-bearing and resistance exercise to improve bone strength, these should be done at least twice a week. There is no evidence that one type of exercise is better than another, however, you should enjoy what you are doing and ensure your routine includes: flexibility, strength, balance and cardiovascular fitness. It is recommended that adults do at least 30 minutes of moderate-intensity aerobic activity such as fast walking at least five days a week.

You may find the exercises uncomfortable at first, this is normal. Use the pacing principles to judge how much exercise you should start with, and to increase your exercise over time. It is better to do a few exercises several times a day rather than all at once.

5. Lifestyle

Lifestyle can significantly impact upon the progression of conditions such as wedge fracture and the level of physical restrictions it can cause.

Although it can be difficult to be cheerful or optimistic, particularly if you are in pain, it's important to stay positive as this can help you recover faster. Low mood, stress and poor sleep are all known to increase pain by making our nerves more sensitive.

Ensuring that you have a regular sleep pattern, taking steps to reduce stress, such as relaxation and mindfulness can help you to better manage your symptoms.

Being overweight is a risk factor for developing longer term pain. Even if you have osteoporosis, you can still lose weight in the same way everyone else can: by reducing the calories you consume and increasing exercise.

Create a calorie deficit by cutting empty calories from your diet. Reduce the amount of sugar, processed food, saturated fat, fizzy drinks and alcohol you consume. Excess fizzy drinks and alcohol also make our bones weaker.

Eating a healthy and balanced diet is recommended for everyone. Replace these foods with lean meats, fruit, vegetables, whole grains, nuts and seeds. Include calcium rich foods in your diet, such as:

- Leafy green vegetables
- Dried fruit
- Tofu
- Dairy

Our bodies are able to generate Vitamin D when exposed to sunlight outdoors. From April to September most of us should get all the vitamin D we need to keep our bones healthy. However in the winter months, sunlight is not a sufficient source of vitamin D. Eating oily fish such as mackerel and using vitamin D supplements is therefore important to ensure good bone health.

Smoking causes the release of harmful chemicals into our bodies that slows healing, makes bones weaker and makes nerves more sensitive to pain. Smoking also increases the level of stress hormones, which also increases nerve sensitivity. Visit **www.smokefreewestsussex.co.uk** to find out more about stopping smoking.

6. Posture

Slouched and head forward postures can place extra strain on the neck and lower back contributing to pain. Take steps to improve your posture by improving your seating position and avoid slouching. It is important that you make sure you have good posture when sitting and standing.

Take regular breaks from your desk, driving or any activity where your spine is held in the same position for a long period of time. Correcting your posture may feel awkward at first because your body has become so used to sitting and standing in a particular way. A firm supporting pillow seems to help some people when sleeping.

7. Physiotherapy

Physiotherapy can be beneficial in the management of wedge fractures. Physiotherapists are experts in helping people develop self-management strategies and developing exercise routines for individuals with pain and medical problems.

8. Reduce the risks of a fall

Falls are a common cause of fractures in people with osteoporosis. Taking simple steps can reduce your likelihood of a fall, such as;

- If you have a medical condition that causes dizziness, speak with your doctor
- Some medications cause unsteadiness. If you are taking a number of different tablets ask your doctor to review them
- Avoid loose fitting, high heeled footwear or shoes with smooth soles
- Keep your glasses clean and hearing aids well maintained
- Ensure you drink enough through the day, people who are dehydrated are at greater risk of falling
- Fit hand rails around the home if you need them

- Remove rugs and mats as these are a common cause of trips in the home
- Tie up loose or trailing wires so these don't become a trip hazard
- Ensure your home is well lit

How can a clinician help?

What about scans?

Once your fracture has been diagnosed, you may be referred for other investigations such as a DEXA scan if your health care professional suspects you have osteoporosis. DEXA scans measure bone mineral density, the results of this are given as a 'T-Score'. This is the difference between your bone density and the expected bone density of a healthy young adult and someone who's the same age and gender as you:

- above -1 is normal
- between -1 and -2.5 SD is defined as decreased bone mineral density (osteopenia)
- below -2.5 is defined as osteoporosis

If pain does not settle, if there is concern over the cause of your fracture, or if an intervention like an injection or operation is being considered, an MRI scan (magnetic resonance image) may be helpful.

MRI scans are the gold standard for getting an internal view of the bodies' structure. They don't involve x-rays and are very safe, although they are quite noisy and some people find them claustrophobic.

Do I need a scan?

MRI scans are not normally required for wedge fractures, because it is normal that pain will improve and the fracture will heal on its own, with time.

MRI scans are very sensitive and will detect almost all serious spine problems such as cancer, infection or pressure on the spinal cord or spinal nerves.

They will also comment on minor abnormalities that are not important, or related to your symptoms. Although these words can sound concerning, they are nothing to worry about.

What if my symptoms do not improve?

Most people who use conservative strategies to manage their fractures do not experience significant pain or other problems in the long term, and will not need an operation. Injections and most types of spinal surgery have limited value in treating vertebral fracture pain.

However, if you experience severe vertebral collapse, or are in significant long-term pain that impacts upon your quality of life, then a specific type of surgery may be appropriate.

What does surgery entail?

Surgical treatment (termed either kyphoplasty or vertebroplasty) is used to re-expand and strengthen the fractures (collapsed) vertebral body. More than one part of the spine can be treated in one session. Research shows that these procedures are beneficial at helping to reduce pain, but may not help increase an individual's level of physical activity.

Summary: what are the key take home messages?

- A wedge fracture is not serious and can be effectively managed with conservative treatment. It may take several months to see improvements
- Good days and bad days are normal
- Remain as active and undertake exercise to improve your fitness
- Painkillers with exercise are more effective than on their own
- Use pacing strategies, rest and medication to increase your function
- Although activity maybe painful, you are not harming your spine