



EQUILIBRIUM SPORTS & SPINAL

BACK PAIN

A COMPREHENSIVE GUIDE TO BACK PAIN AND REHABILITATION





It is estimated that 70–90% of Australian people will suffer from lower back pain in some form at some point in their lives¹. Low back pain usually involves pain experienced in the lower portion of the back. This usually involves spasm of supportive muscles along the spine, irritation to the joints of the spine and damage to the intervertebral disc between the spinal segments (the Vertebrae).

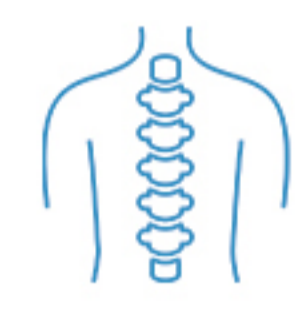
Quite often numbness and tingling can be experienced into the buttocks or lower extremity, if the nerves of the lower back become involved. There are multiple causes of low back pain. Prevention of low back pain is key, as symptoms can reoccur on more than one occasion once you have sustained a low back injury.

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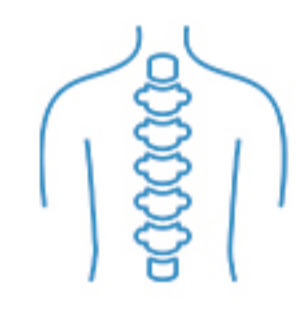
¹ Australian Institute of Health and Welfare 2020



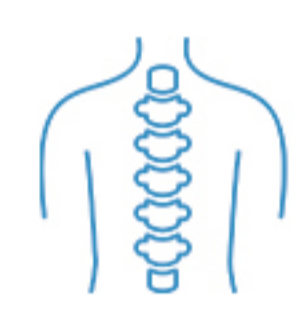
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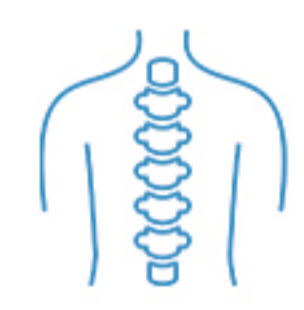
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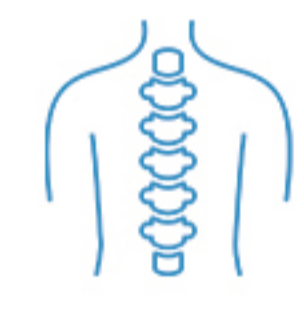
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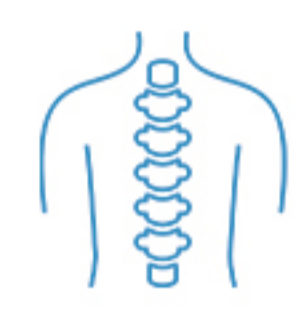
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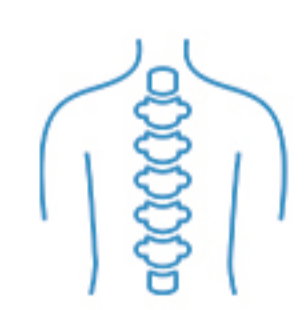
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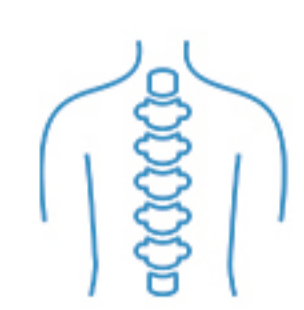
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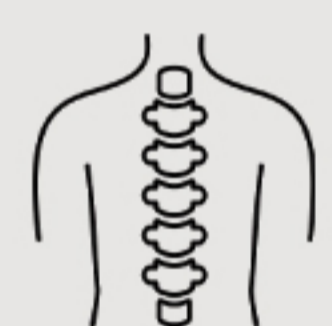
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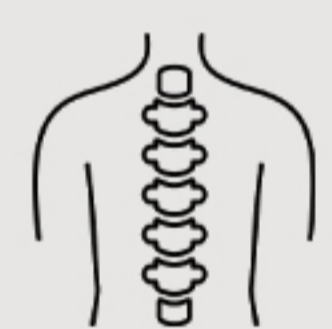
UNDERSTANDING YOUR LOW BACK

Understanding the structures that make up your lower back, can be extremely helpful when you are experiencing an episode of lower back pain. The Lower back, known as the lumbar spine is made up of:



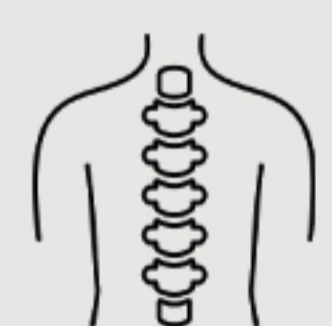
5 vertebrae

These are labelled L1 - L5 - helping to support the weight of your upper body



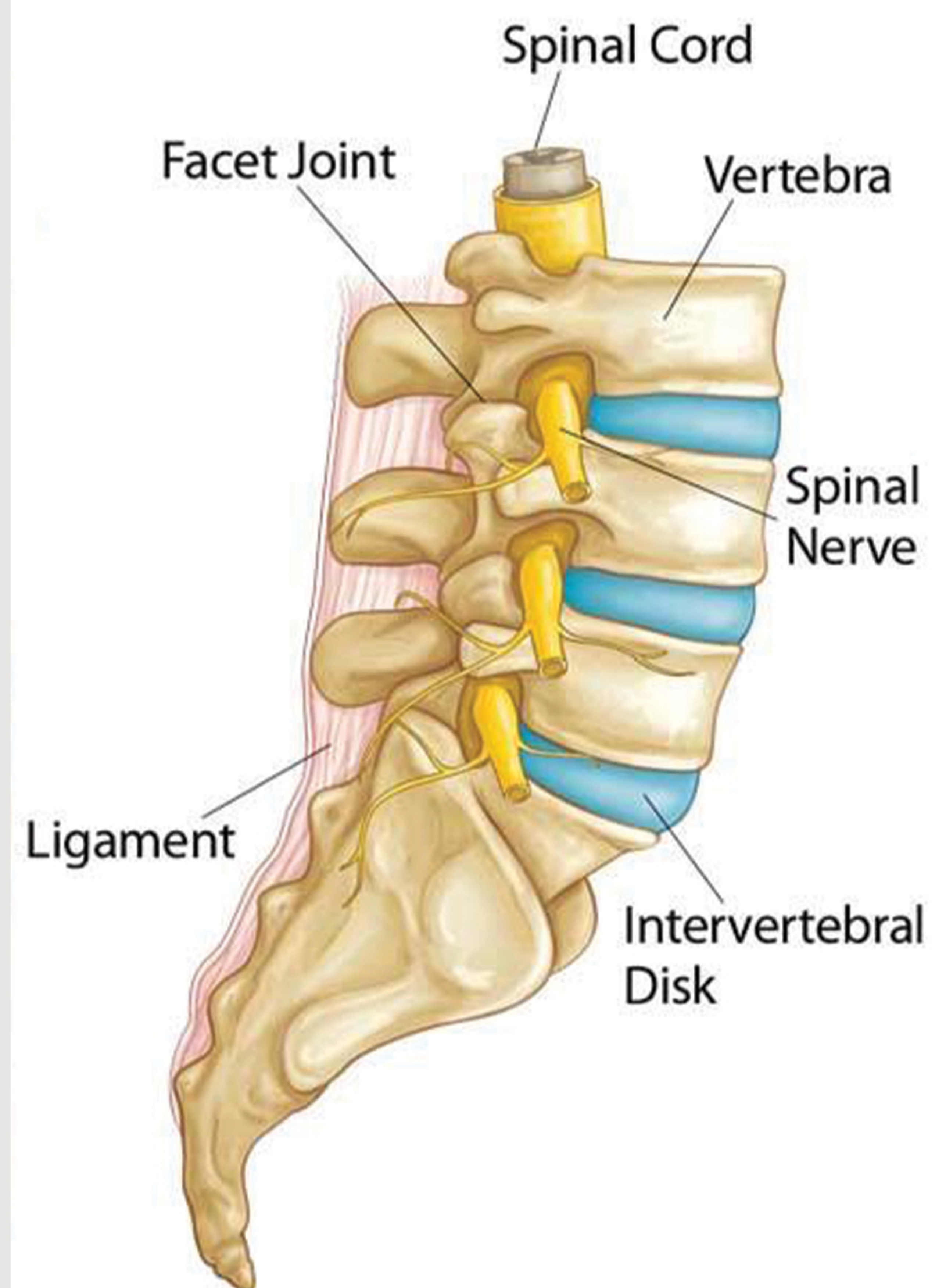
Intervertebral Discs

Consisting of an inner part known as the Nucleus and a tough hard outer aspect known as the Annulus. These 5 intervertebral discs are located between your vertebrae and act as shock absorbers or cushioning system to protect your vertebrae during spinal movements.

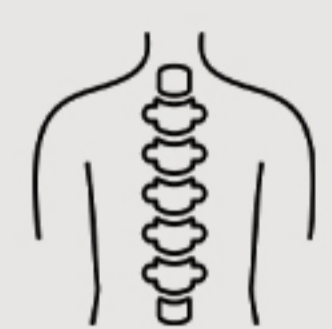


Facet joints

Your vertebrae are connected to each other via paired facet joints. These joints provide stability and mobility and allow your spine to move in different directions.

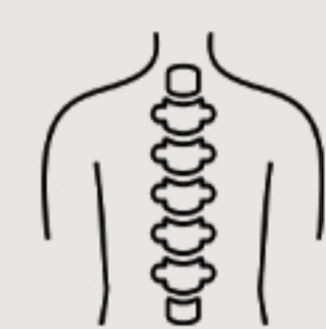


UNDERSTANDING YOUR LOW BACK



Spinal Nerves

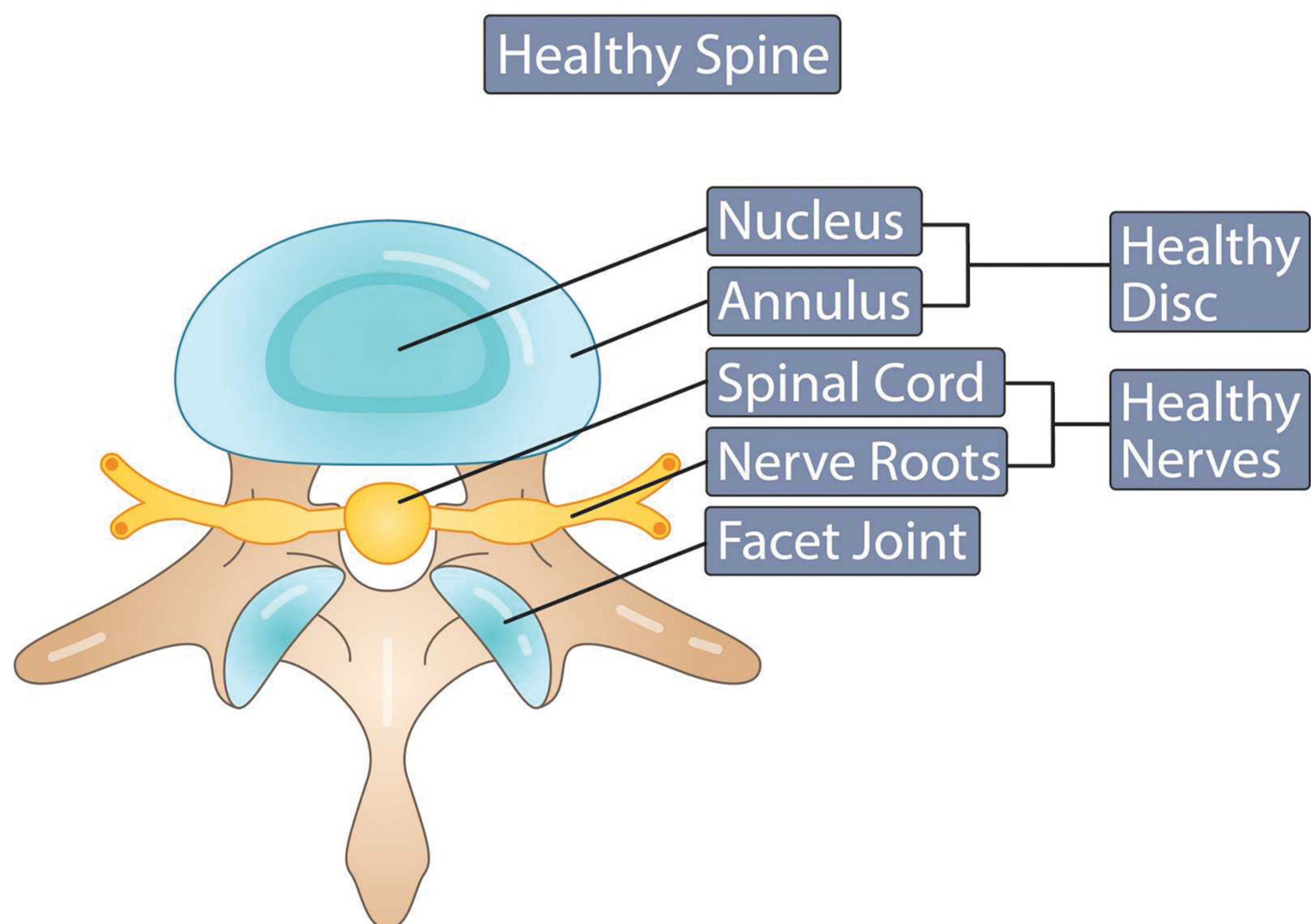
These branch off the spinal cord and exit through small holes between the vertebrae. The part of the nerve that emerges out of the spine is called the nerve root. These nerves carry information like pain, touch and heat and transmit information from the brain to activate your muscles. The lower 4 (L4 and L5) nerves contribute to the formation of one of the body's biggest nerves, the Sciatic nerve.



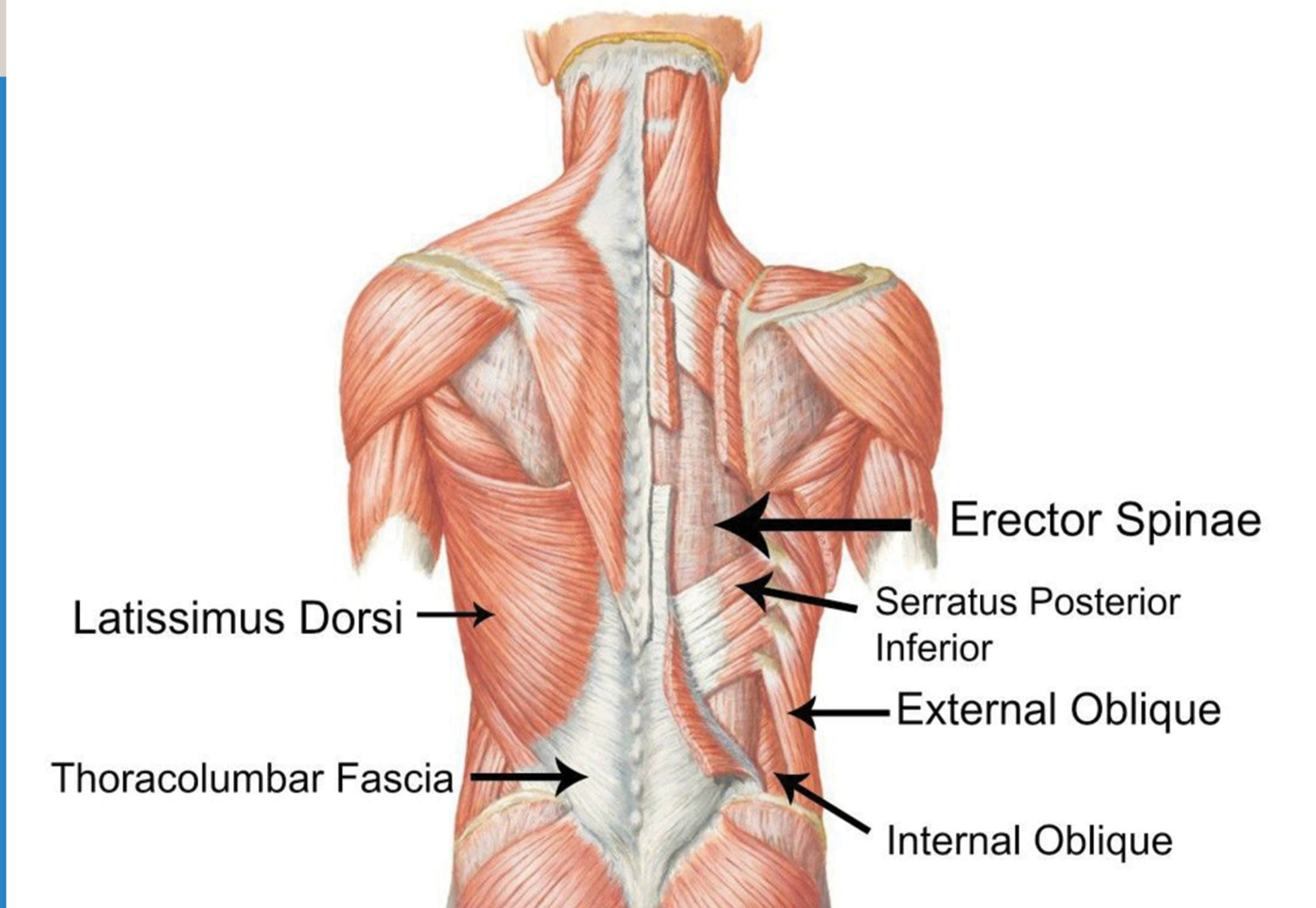
Muscles and Ligaments

There are a great number of muscles and ligaments that help support and move the low back. From small spinal muscles like the Multifidus to long strap muscles like Erector Spinae group. These all help protect and move the spine.

It is important to realise that all these structures are susceptible to damage and can be the source of your pain.



Low Back Muscles



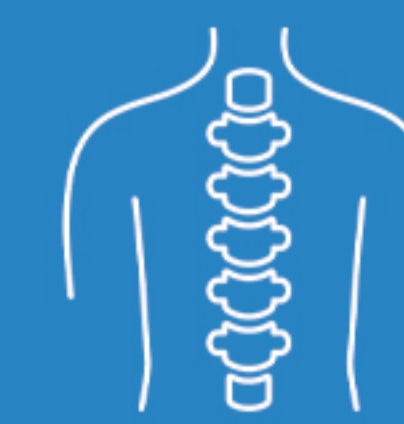
WHAT ARE SOME OF THE MOST COMMON LOW BACK COMPLAINTS?

- The large nerve or smaller nerve roots that go to the legs may become irritated or pinched.
- Facet Joint injury may occur due to sprain due to overuse, or excessive stress / pressure.
- The bones, ligaments or joints between them may be injured due to trauma or overuse.
- Damage / Injury to Intervertebral discs may occur. Known as a disc Bulge or herniation.
- Degeneration to the facet joints and bones. Arthritic change or spur formation.

WHAT CURRENTLY HAPPENS WHEN PEOPLE EXPERIENCE BACK PAIN?

Unfortunately the first point of call for most suffering an acute episode of back pain is to seek advice from either Google or their GP. This often leads to either outdated, and often ineffective forms of treatment. Complete rest, painkillers and unnecessary scans are often the outcomes of these sessions. More often than not there is also minimal or no information about how to self manage your back pain. The follow on effect of this is pain that lingers for far longer than need be. This results in those suffering back pain feeling defeated, and often left believing they are destined to live with back pain for life. Too often we see patients that are encouraged not return to work / sport or activity until they are completely pain free. This simply delays the healing process and further sets the patient up for failure.

We need to change the narrative around back pain. There is SO MUCH that can be done to help back pain. And it starts with a correct diagnosis and a therapist who understands back pain. The Osteopath's at Equilibrium Sports and Spinal are passionate about those suffering with back pain. And are more passionate about seeing you return to living a life PAIN FREE.



WHY DOES BACK PAIN OCCUR?

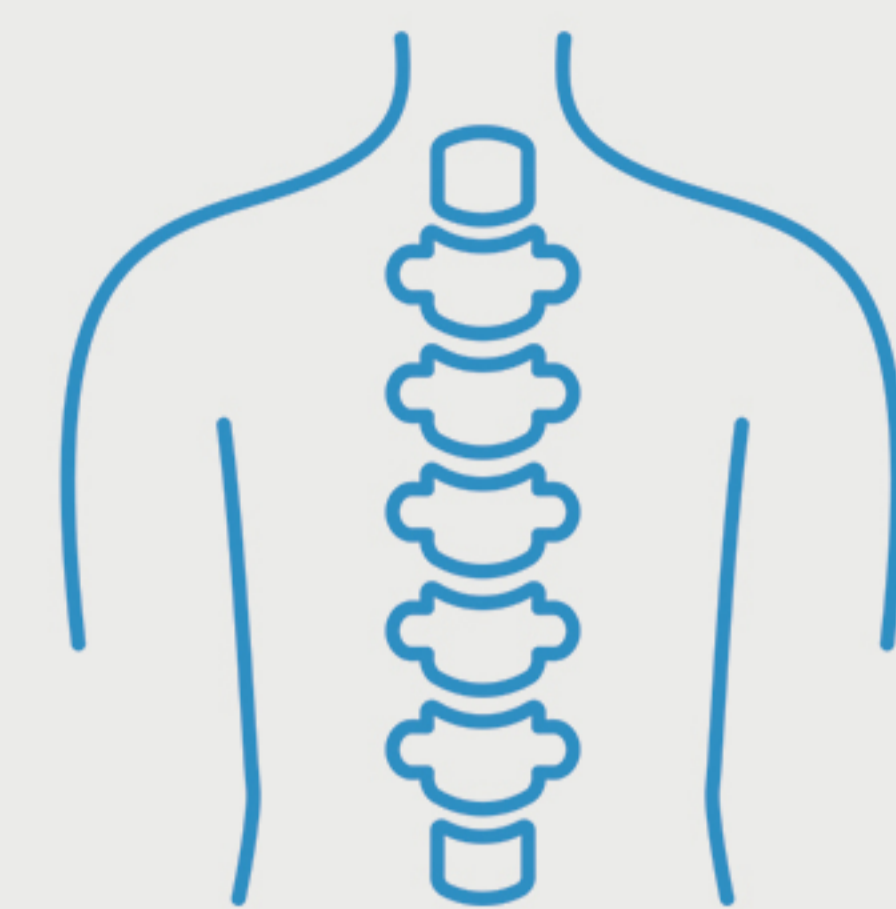
Unfortunately, there is no single one reason why back pain occurs. We are all unique. We all have our own postures, muscle sizes, and developmental quirks. Some people have 6 lumbar vertebrae rather than 5. That being said, real time ultrasound studies have shown that even one episode of low back pain produces dramatic deep muscle weakness and incorrect 'firing' patterns. The key spinal muscles involved are the deep core muscles. When an injury occurs this group of muscles is often inhibited or 'switched off' when pain persists.

The result of these muscles firing incorrectly is the loss of spinal stabilisation and excessive shearing forces through the spine and discs. The body will always try to compensate for this 'loss of stability' with over-activation of other muscle groups like the side muscles (the obliques and erector spinae group). This creates a stiffness or rigid spinal stability that restricts movement.

This presentation of 'stiffness' with recurrent back pain is common as you try to protect your spine with over-activity. This becomes your 'preferred method' of spinal stabilisation that is inefficient and ineffective at protecting your spine and discs when you move. This can present as tightness around the ribs and upper back, or tightness around the hips and pelvis. Both of these will stiffen your core and spine but not allow normal movement.

This is why people reinjure their spine and get a recurrence of pain, because they are not stabilising efficiently. A simple movement like bending and twisting will reinjure your spine and it's simply due to poor coordination and equilibrium of your muscles.

Over time this may accelerate degenerative changes (wear and tear around the discs and joints) and result in further episodes of back pain.



BACK
PAIN
MYTHS

BACK PAIN MYTHS

You would think with such a common condition, that the road to recovery is clear cut. Sadly this is far from true. The myths around back pain lead to confusion and fear. This can often result in poor management of your back pain, and may result in longer healing times. Here we break down the 4 most common myths:



01 'My back pain is due to something being out of place'

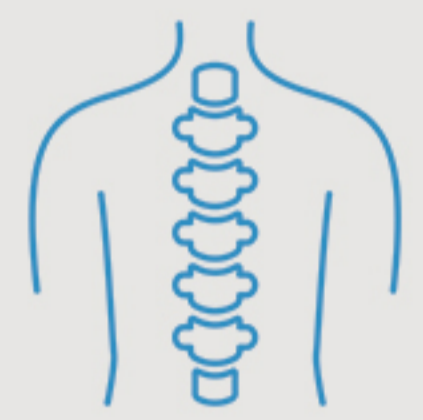
This is a very common phrase we hear in our clinic. Often patients believe that a “spinal joint” or Intervertebral joint has “slipped” out of place. This simply isn’t true. If our spines were this sensitive, our elite athletes competing in contact sports would be sitting on the side lines every week. The truth is our spine is a strong and robust structure. Our spinal disc’s, those internal shock absorbers, are firmly attached to the vertebrae they sit between. These are extremely strong, making it virtually impossible for them to ‘slip’. The same is true for our facet joints. Yes these facilitate our movement, but these joints also **“don’t go out of place”**. Spinal manipulation does **NOT** realign these joints and relocate them. Spinal manipulation is a great tool to release pressure and facilitate movement, but putting things back in place, Sorry this is a myth.



02 'Bending forward is bad for my back'

When you experience an episode of back pain, very often a particular movement position is going to hurt. For some, this may be bending forwards. Others, it may be backwards. Finding a position of ease is going to be the most beneficial thing you can do. Certainly avoiding aggravating positions **IN THE SHORT TERM** is advisable But having a blanket rule that performing a forward bend is bad for your back, is simply promoting fear and a myth. Your back is a resilient structure. By its very nature, it is designed to be flexible to allow us to move. Bending forward is a normal function of the spine and doesn’t need to be feared or completely avoided.

BACK PAIN MYTHS



03: 'I've got back pain, I need a scan to see what's wrong'

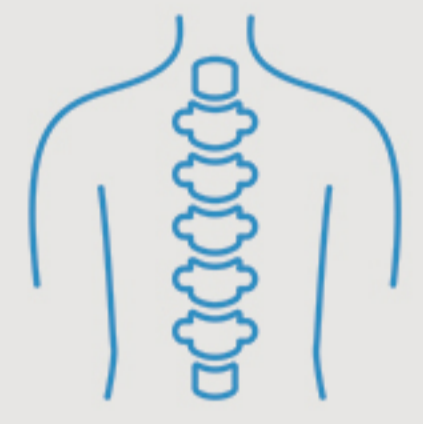
This is often the temptation to race out and get a scan when one experiences an episode of back pain. Unfortunately getting a scan may only serve to muddy the waters of what is actually going on in your back. A good therapist should be able to arrive at a diagnosis with a good case history and a physical exam.

Multiple studies have shown that scans such as MRI's pick up old problems that may be unrelated to your injury. These may be old injuries, or age appropriate wear and tear and should be considered much like "wrinkles on the inside". Things like disc bulges are found in a vast number of pain free individuals.

The true problem with scans, is not so much the scan itself, but rather **what happens next**. This is where poor management and problems arise when therapists treat the "scan" and not the individual. Invasive injections, further testing and medication are often prescribed, Which take away from the helpful activities like movement and exercise.

Only in about 10% of cases do we need to order a scan if we suspect there may be a more sinister reason for your back pain. Research has found that back pain symptoms and findings on scans like disc bulges and arthritis are poorly correlated.

BACK PAIN MYTHS



04: Bed rest is best for my back when it is sore'

Certainly in the first few days after an injury, movement modification is essential. Avoiding aggravating activities will help to relieve pain.

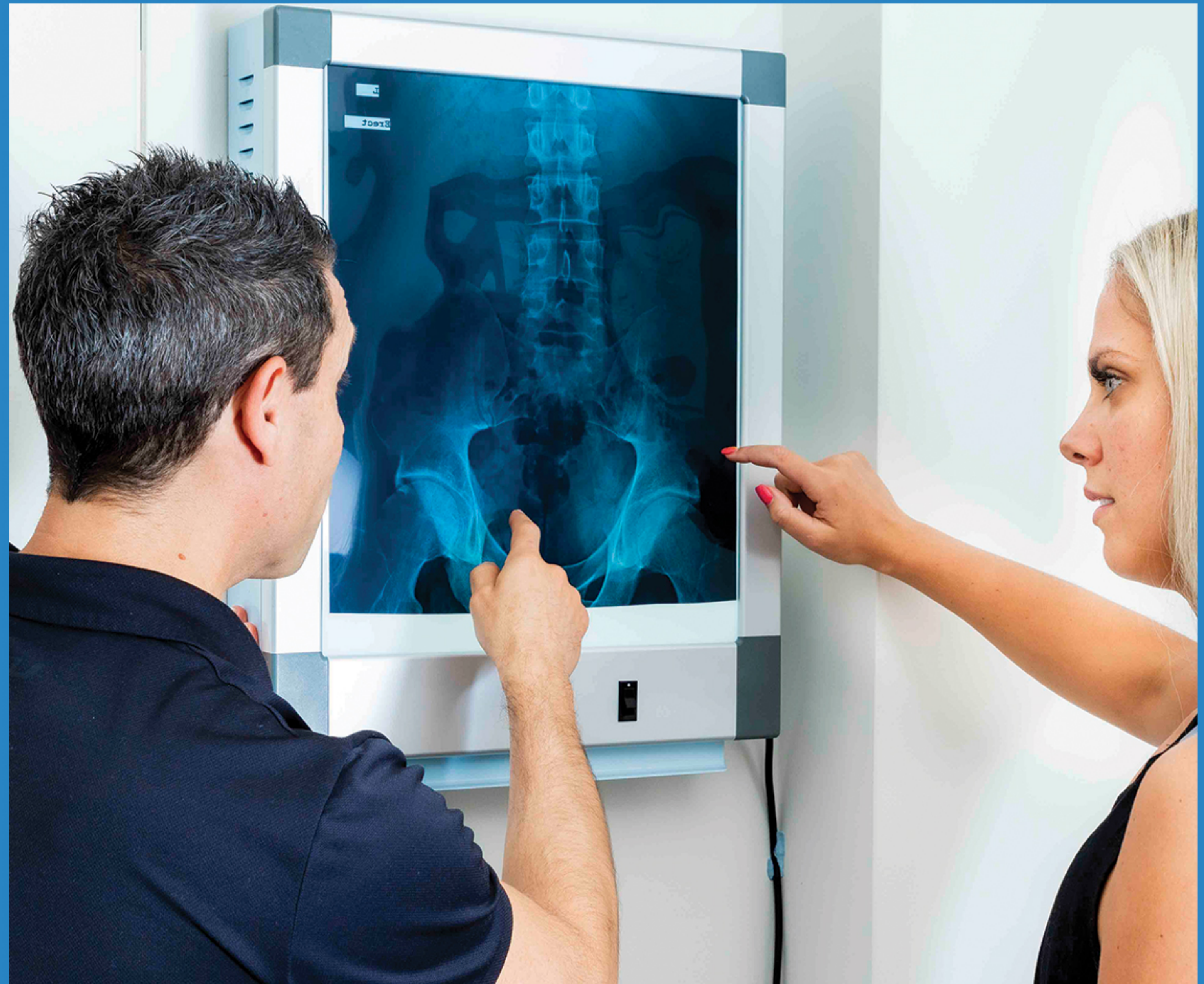
As will performing movement patterns that feel good. However, there is strong evidence to suggest that complete rest will actually delay your recovery. It is important NOT to wait until the pain is gone before movement begins. Reducing your intensity of movement will help.

Altering the range of motion that you take your body through will help. But complete rest, although you may feel good at the time, you will feel worse when you do get up and move. A gradual return to your normal movement patterns will occur as your injury progresses. Aspects like a reduction in guarding muscle spasm, a reduction in inflammation and a “refiring” of core stability muscles will all help your road to recovery.

These improvements may be small and gradual, with your therapist able to guide you through the process.

WHAT ELSE COULD BE CAUSING MY BACK PAIN?

Although less common, there are a number of more severe reasons why you may be in pain. Your Osteopath has been trained to identify these and will be able to manage accordingly. This may include a referral to another specialist for further investigation. Some of these more serious cases of back pain are:



- Intervertebral disc prolapse
- Spondylolisthesis
- Stress fracture (Spondylolysis)
- Spinal canal stenosis
- Vertebral crush fracture

- Hip joint pathology
- Rheumatological causes
- Gastrointestinal causes
- Malignancy
- Severe osteoporosis

AN OSTEOPATHIC APPROACH TO BACK PAIN



Your osteopath will thoroughly assess your presenting problem before deciding on what treatment is required to break you out of the 'pain cycle'. This stage may involve treatment you have had before and will consist of stretching and mobility exercises. Often people with back pain become 'stiff' as they are moving less and use abnormal stabilising patterns to support their spine. This 'stiffness' can often happen over many years and can 'drive the recurrent pain. You tend to lose segmental movement and move as a 'block' - your spine becomes rigid.

Your osteopath will mobilise your spine and use massage, trigger point therapy or even dry needling techniques to make you move more effectively and reduce your stiffness. This will be reinforced with some home stretches and postural change, to change how your muscles work.

Once the stiffness and biomechanical problems have been addressed, you often feel better. Your pain has improved and you can move better. You may even feel like you have been 'fixed'.

However, we don't believe you are truly recovered from your back pain and have a lasting solution until you deal with the problem of poor core stability, posture and muscle control. SO the next stage of your recovery will involve teaching you how to achieve and maintain a neutral spine. It will also involve teaching you how to activate your deep core muscles to protect your spine. We will then teach your stabilising muscles to help maintain your posture in sitting and standing. Remember, your core muscles are postural muscles. We will then teach you how to activate your core muscles to maintain spinal control with simple movement.

Once this is achieved, you are ready to move onto more difficult patterns of control, which involve body and limb movement with core stability. This is what people without back pain take for granted!

This is when we introduce an 'exercise physiology' component into your program. This will be the 'icing on the cake' to prevent falling back into your lower back 'pain cycle'. It will reinforce the muscle control you have learnt and put it under more load with strength and conditioning.



TOP 5 EXERCISES FOR BACK PAIN

The exercises below are some of our most commonly prescribed exercises for Low back pain. These can help improve movement and start the strengthening process. Please check with your Osteopath or local health care provider to see if these suggestions are suitable for your condition.



EARLY STAGE INTERVENTAGE
CAT - CAMEL STRETCH

INTERMEDIATE STAGE INTERVENTION
DEAD -BUG EXERCISE

INTERMEDIATE STAGE INTERVENTION
BIRD - DOG EXERCISE

INTERMEDIATE STAGE INTERVENTION
PALLOF - PRESS

END STAGE INTERVENTION
DEADLIFT EXERCISE

THE EXERCISES: CAT - CAMEL STRETCH (EARLY STAGE INTERVENTION)

This is a great spinal mobility exercise which co-ordinates movement between the spine and hips. It is a great early stage intervention, which can be modified to accommodate pain. This sequence helps to facilitate movement in a non weight bearing position.

HOW TO PERFORM:

- Start on all fours. With your hips shoulder width apart and hands directly under your shoulder.
- **Cat:** Sink your low back down towards the floor, followed by your chest and finally allowing your head to look up towards the ceiling.

- **Camel:** Tuck your chin to your chest and arching through your spine, pushing your shoulder blades towards the roof, and finally tucking your bottom under your tailbone to finish.

Sets:

1 - 3 sets

Reps:

20 repetitions alternating between cat and camel



THE EXERCISES: DEAD-BUG EXERCISE (INTERMEDIATE STAGE INTERVENTION)

The dead bug exercise is a safe way to start to strengthen the muscles that stabilise the spine. It involves gentle contraction of the core and abdominal muscles. This is often used to reduce back pain symptoms.

HOW TO PERFORM:

- Lie flat on your back with your arms extended towards the ceiling. Lift your legs and bend your knees at 90° so your lower legs are parallel with the floor.
- Flatten your back into the floor
- Slowly lower your right arm behind your head and extend your left leg forwards at the same time -till they are just above the floor. Ensuring your back does not arch off the floor.
- Slowly Return to the start position. Ensuring your core stays engaged throughout the movements.
- Swap arms and legs for the next repetition.

Sets:

2 sets

Reps:

10 repetitions



THE EXERCISES: BIRD-DOG EXERCISE (INTERMEDIATE STAGE INTERVENTION)

Another simple yet effective exercise to start to strengthen the core muscles, promotes stability in spine and helps relieve back pain.

HOW TO PERFORM:

- Start on all fours, with your knee's shoulder width apart and your hands under your shoulders.
- Tighten your core / abdominal muscles whilst simultaneously raising your right arm and left leg. Working hard not to let your hips drop or your mid back arch. Ensure your gaze is straight down.

- Hold this position for a few seconds. Return to the start position.
- Swap arms and legs for the next repetition.

Sets:

2 sets

Reps:

10 repetitions



THE EXERCISES: PALLOF - PRESS EXERCISE (INTERMEDIATE STAGE INTERVENTION)

The Pallof press is known as an anti-rotational exercise. Although the primary focus is core stability, control and strength. We see a multiple of other muscles (Gluteals and Leg muscles) also becoming involved. This exercise is a great warm up routine to prime the body, before strength training.

HOW TO PERFORM:

- Start by holding a resistance band or cable at Chest height. Standing perpendicular to the anchor point.
- Take 2 steps away from the anchor point generating tension in the band.

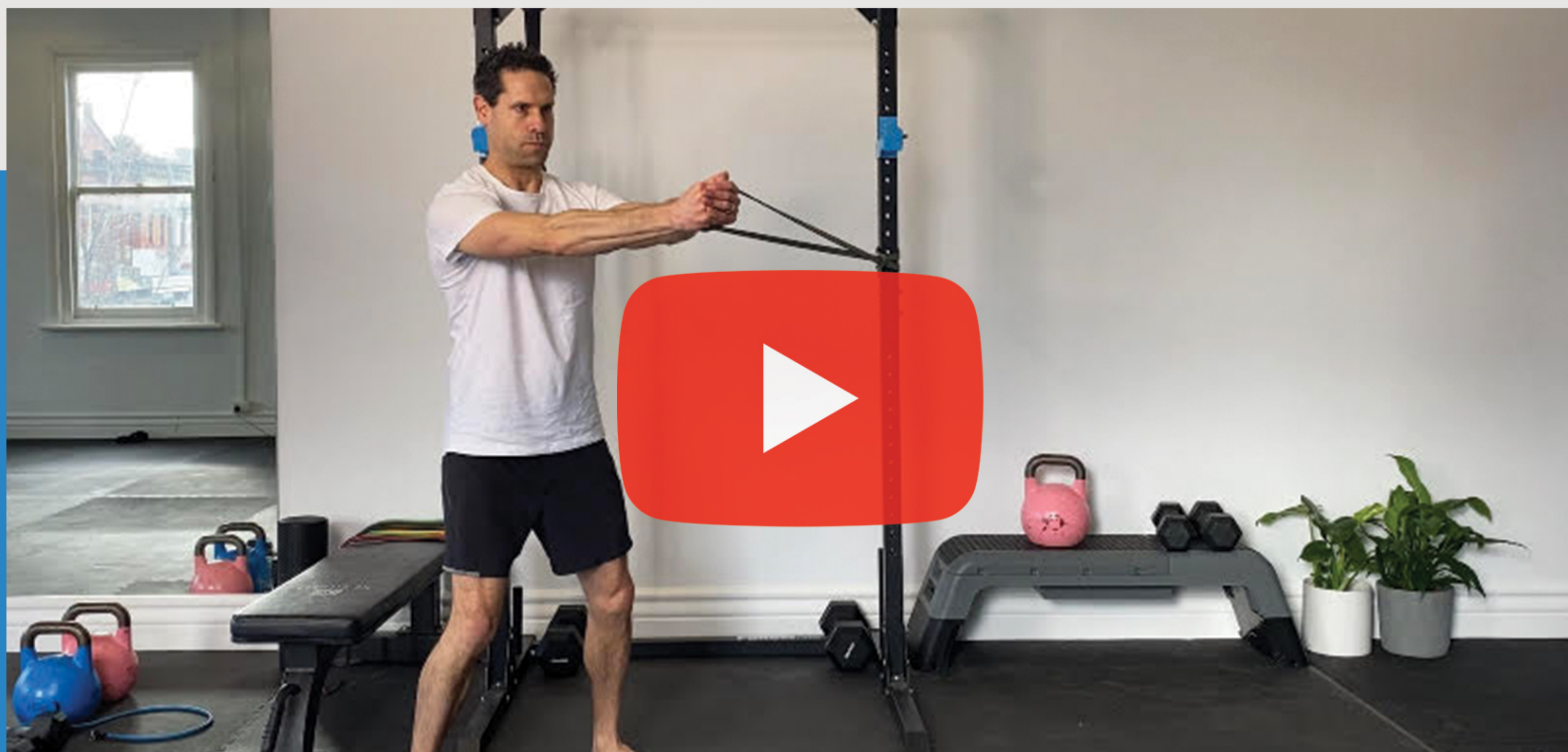
- Grasping the band, extend your hands forward. Ensure your body remains stable. Only your arms should move.
- You will feel the band pull you toward the anchor point. The goal is not to let your torso twist. Be sure to keep the shoulders squeezed and not allow the hips to rotate, effectively fighting the band's rotational forces.
- Slowly return the band to your chest starting position.

Sets:

2 sets:

Reps:

10 repetitions each side



THE EXERCISES: DEADLIFT EXERCISE (END STAGE INTERVENTION)

When performed properly, the deadlift is one of the most effective exercises for strengthening the muscles of your back, legs and core. In a nutshell it will grow muscle, develop strength and improve overall health.

HOW TO PERFORM:

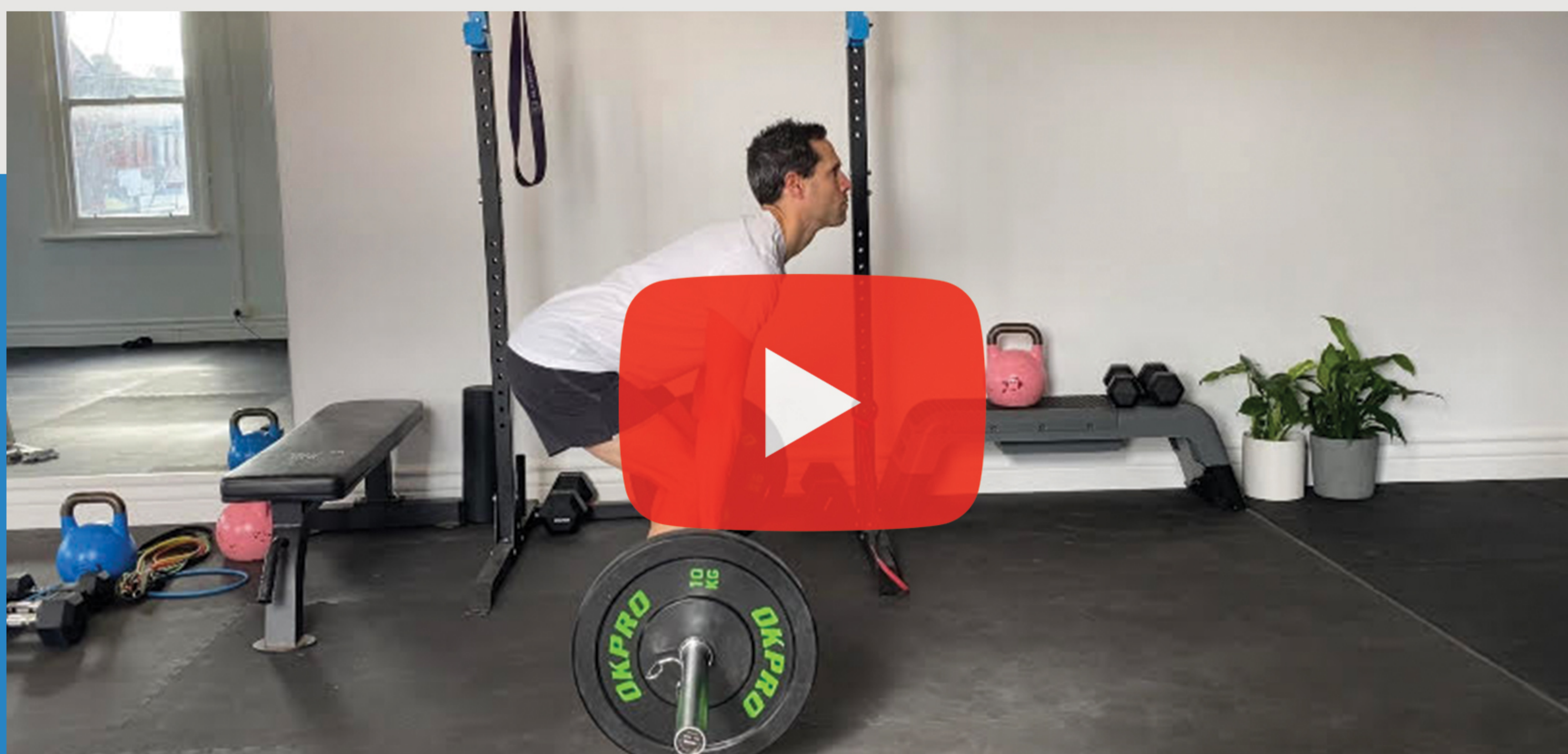
- Start with the bar sitting just above mid foot
- Feet should be shoulder width apart, and your hands should be just outside of your legs
- Start the movement by grabbing the bar, push through your feet, standing nice and tall, bringing the top of your head towards the ceiling
- Slowly lower yourself down by bending at your hips first, followed by bending of the knees once the bar has passed your knees
- From the ground spring back into the standing position by repeating the steps above.

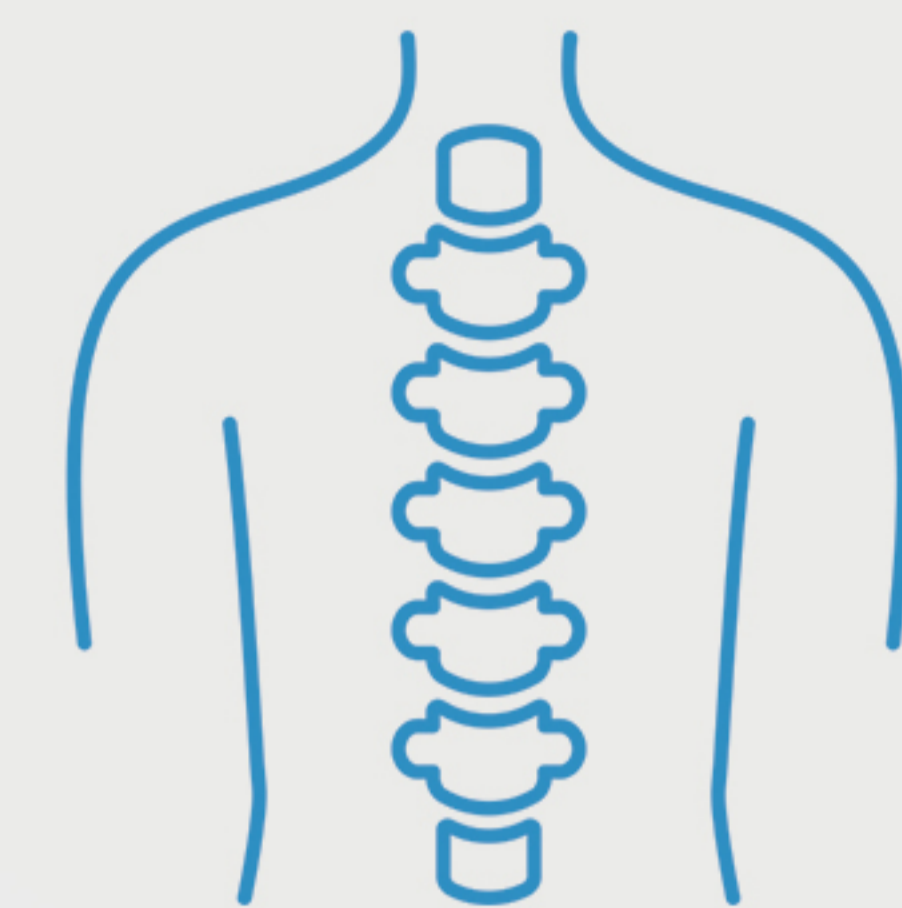
Sets:

3 sets

Reps:

8 repetitions





WHAT
ELSE
CAN I
DO
FOR
MY
BACK
PAIN?

WHAT ELSE CAN I DO FOR MY BACK PAIN?

01 Learn more

Education about what is beneficial for your back and what the current research tells us. Understanding the concept that back pain is not a life sentence is a great starting point. You are not destined to have a 'bad back' for the rest of your life. Making small adjustments to your daily life and routine is a great place to start. Remember there is generally not just one cause of back pain, which means there will not be one magic bullet approach that fixes all. Education is the first step to understanding your back pain.

02 Hydration

Being able to control simple aspects of our life is empowering. Something as simple as staying hydrated can make a big difference to your mood, and the way your body functions.

02 Sleep

This is when our bodies heal. Ensuring you get enough sleep goes a long way to coping with back pain. Apply the practice of good sleep hygiene. This involves going to bed at the same time each night, avoiding stimulants before bed and aiming for around 6-8 hours of sleep.

WHAT ELSE CAN I DO FOR MY BACK PAIN?

04 Movement

Our bodies are designed to move. Your back is a strong and robust structure. Getting the right advice on how to best move and at what intensity is vital. Seeking advice from a qualified health professional who understands back pain is key. As mentioned above, there is no one size fits all approach when it comes to back pain. Your osteopath will be able to guide you through how much, and which exercises are the best for you and your back injury.

05 Medication

In the early stages of an acute low back pain episode, medication may be helpful. Medication should only be used for a short period of time, if at all, and never as the sole treatment. Medication may help reduce the intensity of pain, allowing to start moving again, and begin your recovery. Always seek advice before taking medication.



PREVENTION OF LOW BACK PAIN

As with any injury, prevention is our number one goal and priority. Knowing how to move, which exercises to perform and having a good understanding of what factors contribute to low back pain are essential. If you are unsure where to start, having a chat with one of the Equilibrium Sports and Spinal Staff is a great first step.

Unfortunately there is no one magic bullet when it comes to back pain. Just as there is no one magic exercise that will cure your low back pain. All exercises is good, as long as it is specific to you and your body. And gradually undertaken.

Seeking the advice and guidance from a trained professional who understands low back pain and its complexity is your first step to regaining control of your life without back pain.

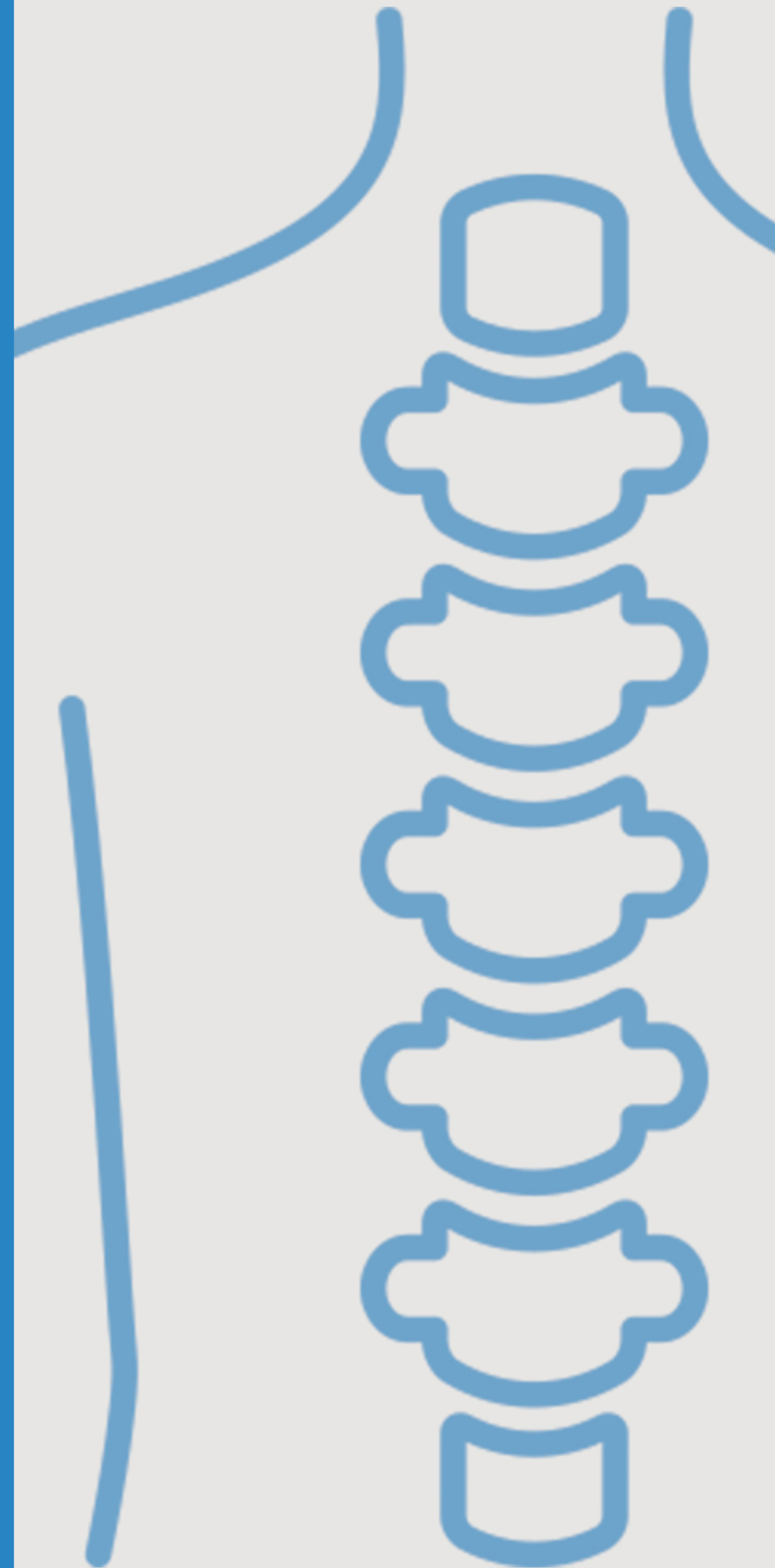
CONCLUSION

If your lower back pain has taken over your life, and you're afraid you'll never feel back to normal, then the information provided above as well as the stretches and exercises are a great start.

Keep in mind the information above is all of a general nature. The best results are achieved by taking the above information and distilling it down, so that it is specific to you and your low back.

Ensuring the root cause of your back pain is identified. And a unique treatment and management plan is designed for you.

Long term health and wellness is our **primary goal**.





We at Equilibrium Sports and Spinal treat the cause of back pain - never just the symptoms. We aim to:

make you better than you were yesterday!



THANKS!

Click here to make a booking
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**Equilibrium Sports and
Spinal Clinic**

If you have any questions, feel
free to email us at

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