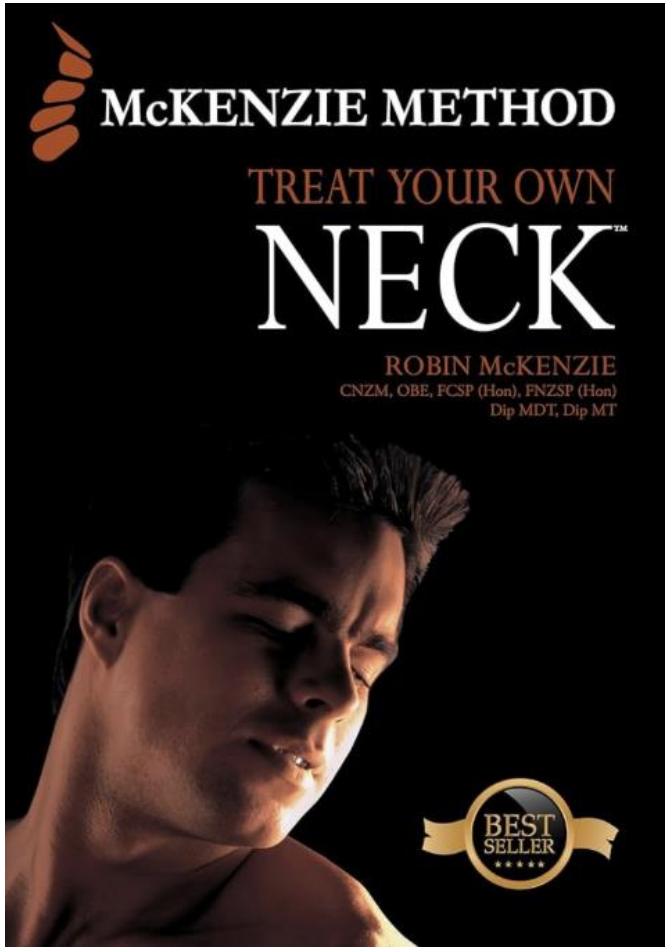
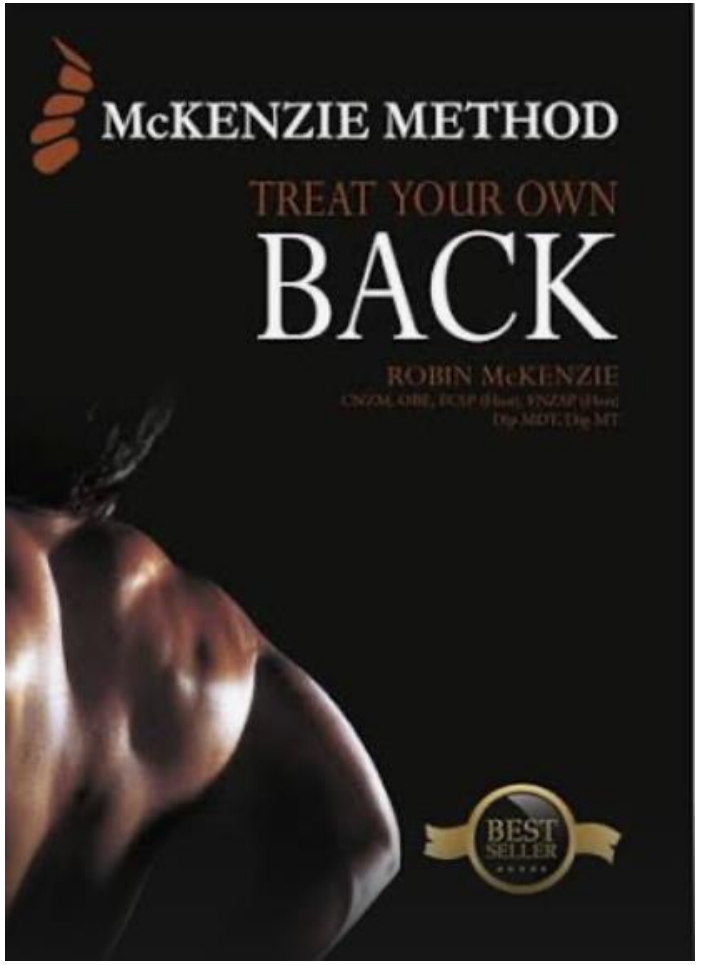
Workplace Injuries

Looking after Yourself





Treat Your Own Neck and Treat Your Own Back are two excellent evidenced based books written by an Australian Physiotherapist named Robin McKenzie that just about every Physiotherapist will use as a basis for treatment for both their patients and themselves!

These methods are so highly thought of in the Physio world that there are post graduate courses run by the McKenzie Institute for Physiotherapists to gain McKenzie credentialled qualifications in the treatment of spinal issues.

McKenzie, R. 5th Edition (2011) McKenzie Method Treat Your Own Neck. Mckenzie Global Ltd

McKenzi,e R. 5th Edition (2011) McKenzie Method Treat Your Own Back. Mckenzie Global Ltd

Pain of mechanical origin

- Pain of mechanical origin occurs when the joint between two bones has been placed in a position that overstretches the surrounding ligaments and other soft tissues or impinges the joint capsular membrane. This is true for mechanical pain in any joint of the body, including the spine.

MECHANICAL CAUSES

- The McKenzie method describes three syndromes:
- POSTURAL (end-range stress of normal structures)
- DYSFUNCTIONAL (end-range stress of shortened structures possibly due to scarring, fibrosis, nerve root adhesion, capsular inflammation and thickening due to facet joint impingement)
- DERANGEMENT (anatomical disruption or displacement within the spinal segment) leading to:
    - Spinal disc issues

To help you understand how easily some mechanical pains can be produced, you may like to try a simple experiment.

Experiment to demonstrate Postural Pain

- First, bend one finger backward until you feel a strain.
- If you keep your finger in this position, you might only feel minor discomfort, but as time passes, pain eventually develops. In some cases, pain caused by prolonged stretching may take as much as an hour to appear.
- Try the experiment once more, but now keep bending the finger past the point of strain until you feel the immediate sensation of pain. You have overstretched and your pain warning system is telling you that to maintain movement in that particular direction will cause damage.
- The pain warning tells you to stop overstretching to avoid damage and when you do so the pain ceases immediately. No damage has occurred, and the pain has gone. No lasting problems arise from this short-lived strain providing you take note of the pain warning system.
- If you fail to heed the warning and keep the finger in the overstretched position, the ligaments and surrounding soft tissues that hold the joint together will eventually sustain damage. This damage will result in an ache that continues even when you stop overstretching. The pain reduces in intensity but continues even when the finger is at rest. The pain increases with movement performed in the wrong direction and will not cease until healing has occurred. Healing may take several days and would be prolonged if every day you were to continue to apply the same strains.

Images and text taken from McKenzie R (2011). Treat Yor Own Back

The body has a built-in early warning system

So, take notice!

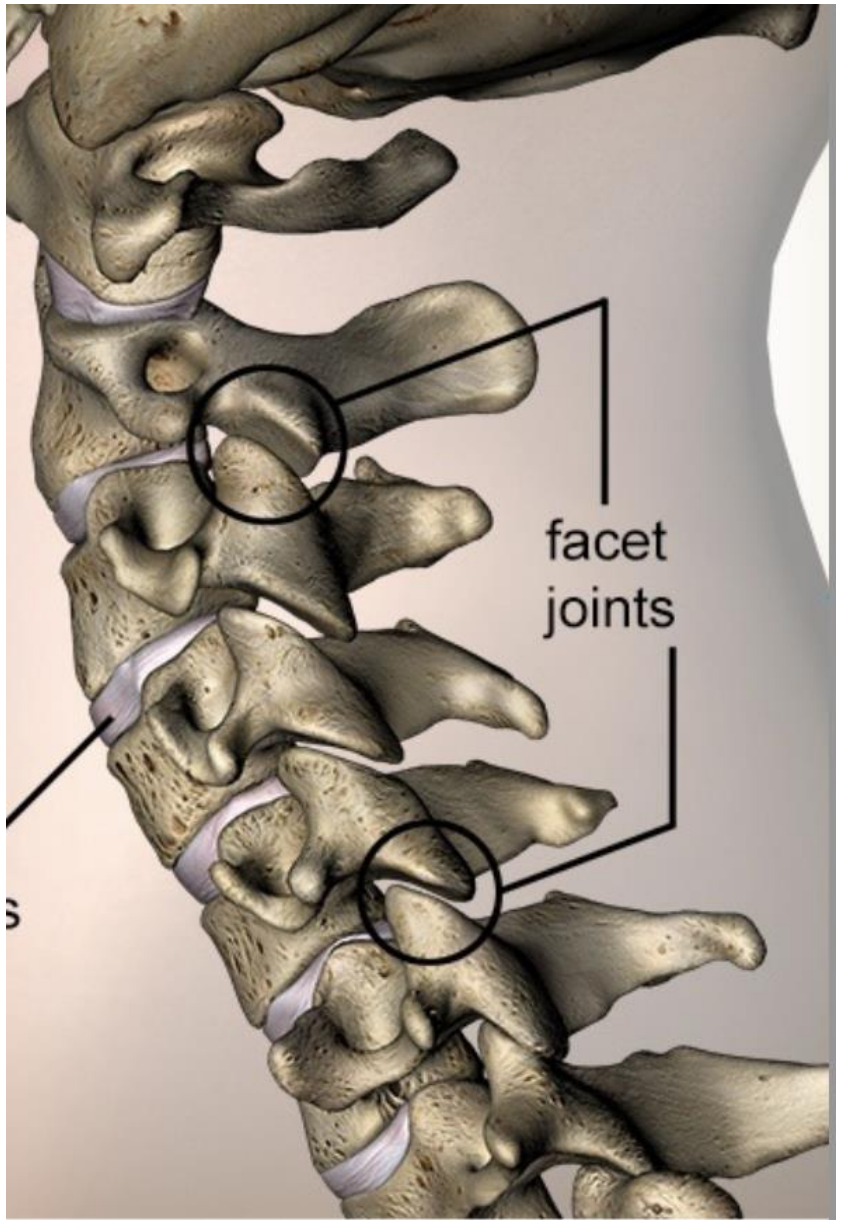
Ignoring early signs of mechanically related pain from ‘poor posture’ has a knock-on effect.

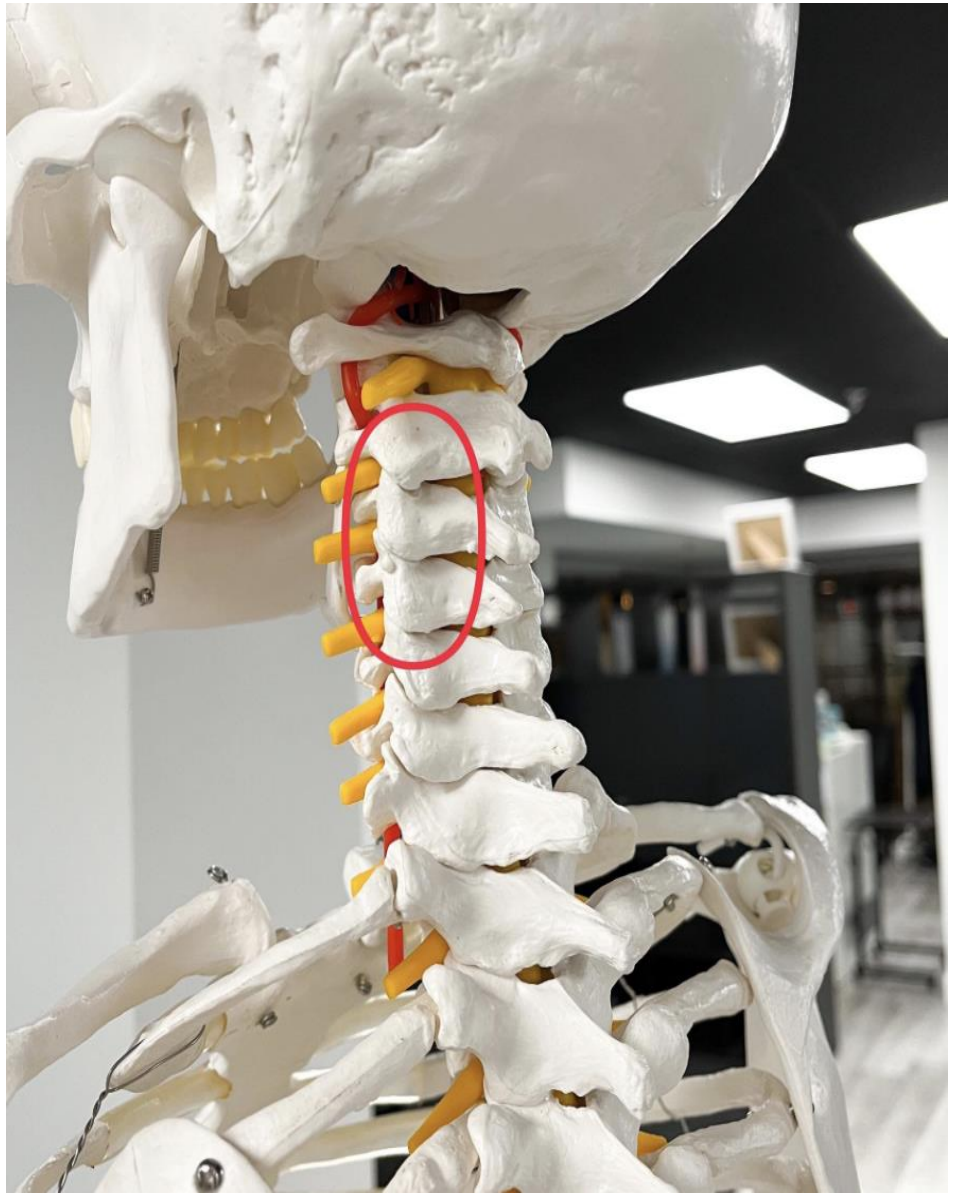
Poor spinal position can ultimately lead to limb related pains, for example nerve impingement in the neck or back can give rise to symptoms in the arms and hands, legs and feet. Or muscle spasms due to pain-spasm reflex where anatomical structures giving pain sensations ellicit muscle spasms in response.

Dysfunctional Pain

- The dysfunction syndrome is pain caused by the mechanical deformation of structurally impaired soft tissue; this may be due to traumatic, inflammatory, or degenerative processes, causing tissue contraction, scarring, adhesion, adaptive shortening or capsular impingement and subsequent thickening of the capsular membrane.

- A good example of issues relating to poor postural spinal positioning can be Facet Joint Impingement which if not addressed gives rise to facet joint capsular inflammation and pain which in turn causes reflex muscle spasms. These symptoms can easily be resolved by addressing your spinal posture and thereby any underlying poor facet joint position.





Images taken from Cervical Vertebrae: Anatomy and 3D Illustrations. www.innerbody.com

Facet Joint Impingement

- "All intervertebral joints, along the length of spine, possess capsule processes, i.e., meniscoids, which can be classified as synovial, fat and fibrous.

  Meniscoids are most developed in the lumbar and cervical spine. They serve to compensate for the incongruence of articular surfaces and to fill in empty spaces.

  Mobile, peduncular meniscoids can, at sudden or non-physiological movements, be caught between articular surfaces and cause spinal blockade and painful conditions. Manipulative treatment is, therefore, justified in indicated cases."

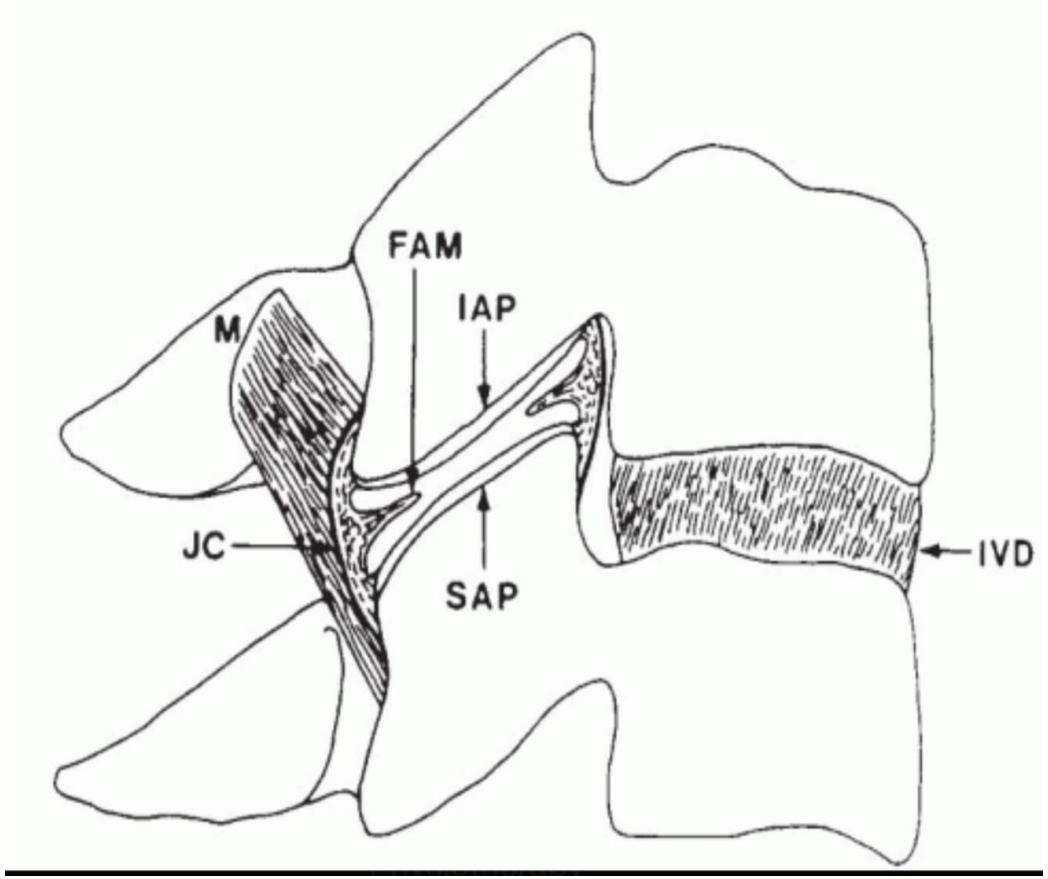
  Article: www.ncbi.nlm.nih.gov/pubmed/12125216

Kos J, Hert J, Sevcík P. Meniskoidy meziobratlových kloubů [Meniscoids of the intervertebral joints]. Acta Chir Orthop Traumatol Cech. 2002;69(3):149-57. Czech. PMID: 12125216.

FAM = Fibro Adipose Meniscoid

Other image abbreviations: Typical cervical motion segment and structures comprising the zygapophyseal joint. SAP, superior articular process; IAP, inferior articular process; JC, joint capsule; M, multifidus muscle; IVD, intervertebral disc.

Image source: musculoskeletalkey.com/disorders-of-the-cervical-spine/



What can be done about mechanical pain?

- The management of your pain is your responsibility
- You can call on healthcare professionals to help but ultimately YOU need to help YOURSELF
- Just as you expect patients to look after their feet, you need to take ownership and ensure you look after your own body. You only get one!

Address Poor Posture

Images taken from McKenzie R (2011). Treat Your Own Back

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ALSO, REMEMBER: Sometimes areas of the muscles forget to stop contracting!

Correcting poor posture will stop pain in stretched or impinged structures but sometimes the muscles surrounding the structures remain in spasm.

Anatomically there are areas within a muscle that continue with electrical activity even when the original pain stimulus is no longer there.

These are called trigger points. (Niel-Asher 2005)

Think of cramp in your calf. This is the calf muscle in spasm. It continues until you stretch the muscle out. Once stretched, the cramp disappears.

This scenario can also happen in the muscles of your spine.

So, yes, it is important to address any underlying poor spinal posture, but should your symptoms not resolve immediately it may be related to ongoing trigger point muscle spasm which can be alleviated by a variety of techniques such as:

Self Stretching which can be done immediately and can quickly allow you to self manage your pain and muscle spasm.

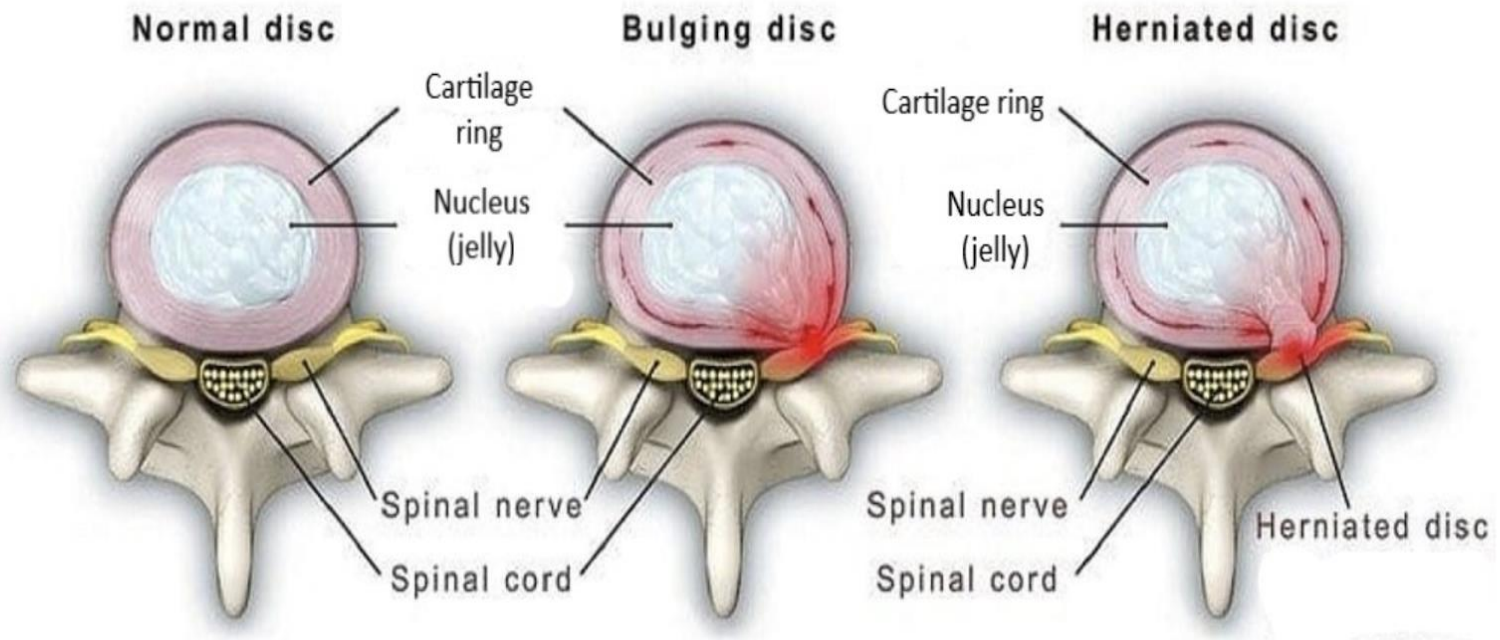
Alternatively, you can use Heat, Cold, Massage and Manipulation which are a variety of techniques which can also alleviate muscle spasms.

You may need to add to simple posture correction an exercise that will stretch the muscle that may continue to be in spasm because stretching a muscle in spasm will automatically relax it.

Images taken from McKenzie R (2011). Treat Yor Own Neck

Derangement Pain

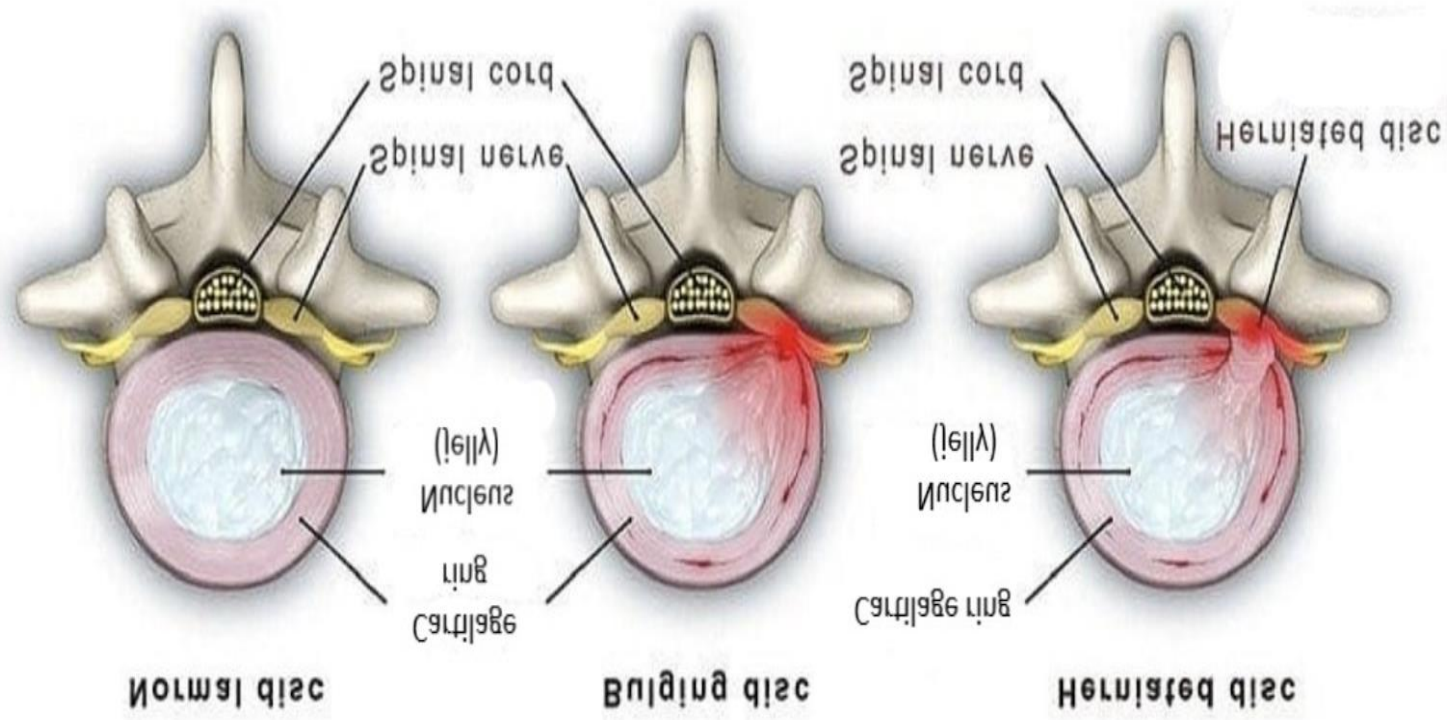
- Disc Bulges / Prolapses



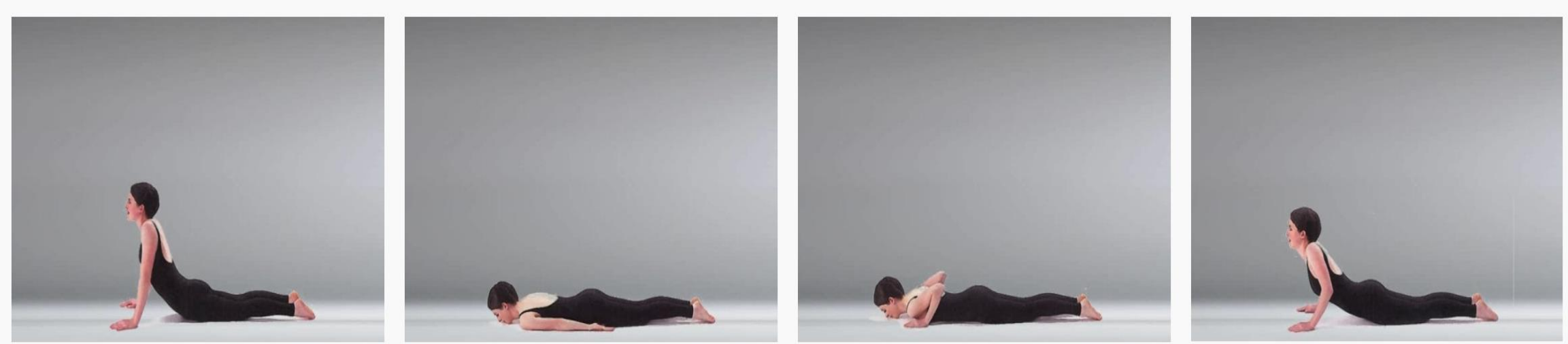
Images taken from PhysioVive.com

I have flipped the previous disc diagrams upside down to help illustrate how beneficial even just **lying prone** can be when someone is suffering with a lumbar disc issue. **Disc cannot bulge upwards against gravity!**

It has been shown that lying prone for 30 - 45 minutes helps the inner gelly part of the disc to migrate back to its central position, (Centralisation), Long et al (2004). In the case of a prolapsed disc (right diagram) you have to remember the outer annular fibres have ruptured to allow the gelly to bulge through. If you lie prone and the gelly assumes a central position the annular fibres do not heal in 45 minutes. These fibres will heal with scar tissue in the same way as tendons and ligaments over a 3- 6 week period. So, it is vitally important to continue with prone lying and extension exercises to maintain the gelly centrally until the outer fibres have adequately healed.



Images taken from Wibbi Exercise Program



Images taken from McKenzie R (2011). Treat Your Own Back

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References

Kos J, Hert J, Sevcík P. 2002;69(3):149-57. Czech. PMID: 12125216. Meniscoids of the intervertebral joints. Official Journal of the Czech Society for Orthopedics and Traumatology of the Locomotor System and the Slovak Orthopedic and Traumatological Society www.ncbi.nlm.nih.gov/pubmed/12125216

Long A, Donelson R, Fung T (2004) Does it matter which exercise? A randomised control trial of exercise for low back pain. Spine, 29, 2593-2602

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McKenzi,e R. 5th Edition (2011) McKenzie Method Treat Your Own Back. Mckenzie Global Ltd

Niel-Asher, S 1st Edition (2005) The Concise Book of Trigger Points, p44

Thank You