PHYSIO TIPS
IN OCTOBER

SPINAL DISCS EXPLAINED

THERAPY IN ACTION

THE INTERVERTEBRAL DISC has gained quite a reputation in society today and has a bad rap for being the cause of significant pain and disability in so many people's lives. Most tend to view discs as quite fragile, easily injured, and as very mobile structures in your spine. They attract very strong adjectives like "ruptured, crumbling, degenerated, slipped and blown out'.

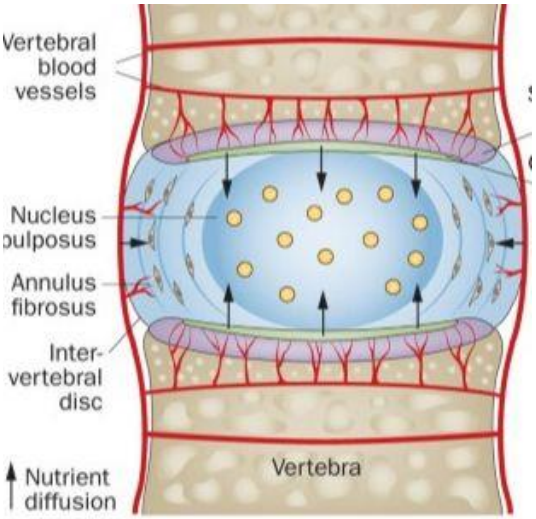
In this month's issue of Physio Tips we would like to BUST the UNTRUTHS of the *"free floating mystical creature that lives in your back and makes pain travel down your leg"* and create a new narrative of this remarkable living, adaptable force structure that intermarry our vertebrae.

Discs are strong, robust structures that do not 'slip'

They are firmly anchored to the vertebrae by exquisitely strong connective tissue which limits their ability to come rocketing out of place. They are very robust joints that can withstand tremendous amounts of force without fail. In a study that examined the compressive and tensile strength of discs, they found that it takes about 335kg of force to compress the disc height 1mm.

Discs function as shock absorbers and allow movement

The intervertebral discs are strong vibrous structures connecting all the vertebral bodies. The different layers are arranged in a pattern that facilitate joint mobility (bending, rotation, and combinations of both) and stability in the otherwise rigid vertebral column. They also transfer loads and dissipate energy - the high content of water and gel like inner center gives the discs it's shock-absorbing effect but at the same time makes it deformable. The discs spread mechanical load evenly across vertebral bodies, regardless of the position of the spine.



Discs are alive

Although robust and strong, discs are also delicately designed tissue requiring blood circulation and nutrition to keep them healthy. Discs are composed of an outer layer of several rings of fibrocartilage which surround an inner gel-like center made up of protein and 85% water. Each disc is bordered by endplates which separate the vertebral bone from the disc itself. The endplates contain a network of microscopic blood vessels that are responsible for nutritional intake. The intervertebral disc is innervated by nerves and danger sensors which are mostly found in the the outer layer of the disc.

Discs need movement to nourish themselves

Movement and load alternating with relief, is essential for disc health - A greater loss of height and more degeneration can be observed in inactive people compared to active individuals:

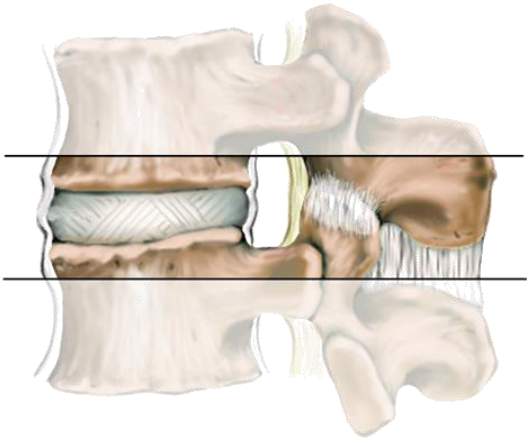
- Moderate running and intensive cycling, strengthens the disc. Studies show that the discs of runners/cyclists are better at binding water and have less degeneration than inactive adults.
- Basic studies confirmed that regenerative processes of discs are enhanced through progressive dynamic loading e.g. weight training and strength training

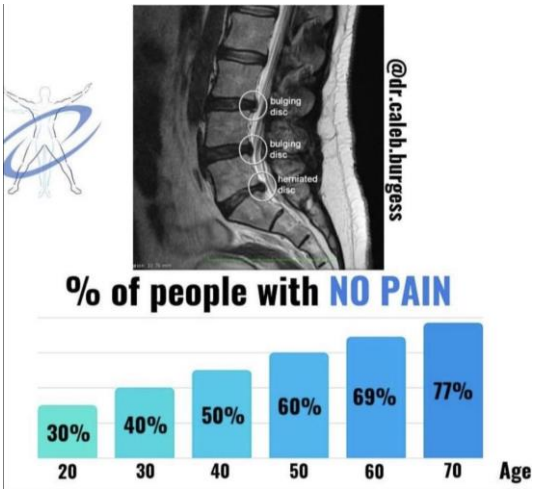
Discs do get injured

The disc material can bulge and sometimes herniate or squeeze onto a nerve or release chemicals that irritate a nerve. Disc injuries can range from mild to severe, and can very symptoms regardeless of the severity. Disc injuries may occur with a sudden onset of pain and symptoms, or develop over time. This all sounds alarming, but it does not necessarily alert the nervous system and it not always painful.

Discs do degenerate

Disc degeneration is part of normal aging - wrinkles on the inside. The loss of height and hydration changes can be explained mostly by genetic and lifestyle factors. Mechanical influence on the other hand is rather small. A recent study concluded that early disc changes did not predict future pain and disability and does not mean a life of despair.





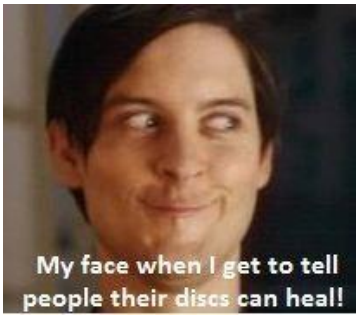
Injury to the disc does not always correlate to pain

In some instances disc injury may be completely pain free, and research has shown that many people who have visible disc injuries on MRI scans have no pain or symptoms. Yes, there are times when degenerative changes may contribute to a person's pain experience, but often this is not the case. The normal aging process is POORLY correlated with how much pain you may or may not experience. The following percentage of people with NO symptoms of low back pain had signs of disc degeneration on MRI (see image).

Imaging is important in several cases such as if someone presents with unremitting pain, foot drop, bowel or bladder compromise. We just need to make sure we are using imaging appropriately and at the right time. Findings of imaging must be interpreted in the context of the patients clinical signs

Injured discs heal and can regenerate

A disc bulge is not a 'death sentence', but it could create a high degree of fear and dramatically take control of a persons life. Back in 1980, studies already indicated that discs can heal, with a healing rate of between 40-100%. The time frame for healing to occur varies between 3-40 months. A recent study by Chui indicates that the larger the disc injury the more likely it is to heal (see results below).



I have a slipped disc so I need an injection or surgery

UNTRUE!!! In most cases physiotherapy should be the first port of call before MRI scans, injections or surgery. Empower yourself through education, knowledge, a new perspective and confidence to embrace returning to pain free levels of function. In some counrties surgery is not approved unless a 1 year period of rehab was first trialed.

THE NEW NARRATIVE: THE DISC IS A NORMAL STRONG HUMAN TISSUE THAT HAVE THE CAPACITY TO STRENGTHEN WITH PROGRESSIVE OVERLOAD, ADAPT, EVEN HEAL and REGENERATE.

DISCS ARE STRONG AND DESIGNED FOR MOVEMENT

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Tennis Elbow

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HAVE ANY QUESTIONS?

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