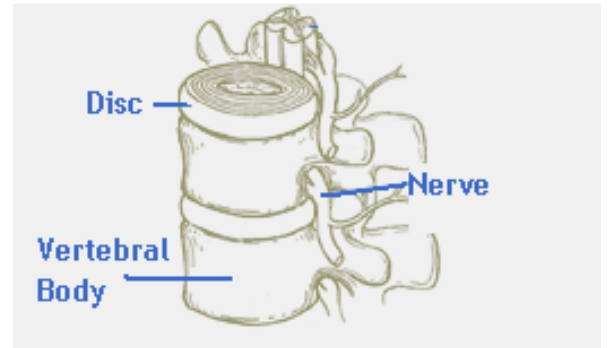


TOP TIPS: LUMBAR DISC INJURIES

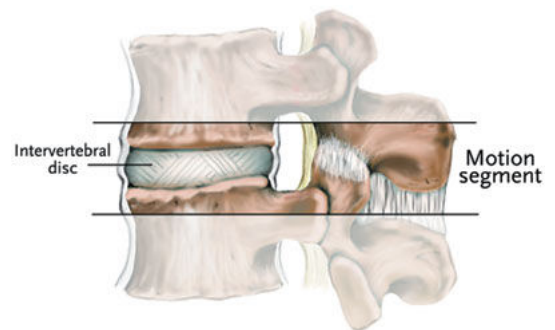
Active Anatomy Revision:

- Between the vertebral bodies are inter-vertebral discs.
- They are made up of fibro-cartilage tissue.
- The centre has a jelly-like substance called the **nucleus pulposus**, which is surrounded by a tougher outer fibrous layer called the **annulus fibrosus**.



The function of a disc:

- Provide shock absorption to the body.
- Allow fluid movement while maintaining a connection from one vertebrae to the other.
- The gelatinous centre adapts to the shape of the spine as one moves (eg: left side bending, the disc will become compressed on the left side but not on the right side).



Description :

Lumbar Disc Injuries:

Disc Injuries are more often found in the lumbar spine and cervical spine. An injury to the disc can be described as an irritation, a bulge, a protrusion, a herniation or a dessication. A disc, however, can not be slipped due to the amount of connective tissue attachment via the end plates to the vertebrae bodies above and below.

When you bend forwards, you are putting pressure on the anterior (front) part of the disc pushing and stretching the disc posteriorly and vica versa. Discs are usually injured in this loaded flexed position or a loaded flexion and rotation position. Eg: picking up a heavy awkward shaped box when moving house or whilst playing golf. Another position which increases the risk of damage via increasing the pressure onto the discs is prolonged sitting (ie : overseas plane trips).

Now think of how many hours each day you are in this flexed spinal position - sleeping, car, vacuuming, washing, picking up kids, studying, at the office, in the car etc... compare these hours with how often you are

bending backwards putting the spine into extension. (often never). These very imbalanced postures lead to very imbalanced pressures and stretching of the intervertebral discs resulting in injury.

Active Anatomy's Top Tips for Training:

Lumbar spine discs rely on control of vertebrae movement to help reduce the amount of pressure and stretch going through the injured disc. Remember that the injured disc will never be the same shape following injury and therefore always prone to being re-injured at a later date. Keep this in mind when training these clients.

Remember that CORE stability (control of the individual lumbar spine vertebrae) and PELVIC stability (stability of the pelvic ring joints) are 2 separate issues. So - retraining these 2 vital components individually is so important. These 2 systems rely totally upon the simultaneous functioning of each other to ensure optimal movement quality.

Active Anatomy recommends when retraining stability for the lumbar spine and pelvis the Core stability must be functioning **before** the global movement muscles responsible for pelvic stability can be strengthened.

Due to this imbalance in postures, (such as posteriorly rotated pelvis - or flat back postures), discs usually bulge, protrude or are herniated **posteriorly** and may impinge upon the spinal cord or spinal nerves directly behind the discs. This may cause extreme pain, pins and needles, numbness and weakness into the area of the body which that nerve supplies.

Eg: in the lumbar spine the L4/5 disc and L5/S1 disc are most commonly ruptured - they supply the Sciatic nerve which runs through the gluteal region down the back of the leg to the calf. An irritation of this nerve is known as Sciatica. Disc injuries and sciatica symptoms simultaneously, are very common injury presentation.

Exercises to AVOID:

Spinal flexion / Impact / Prolonged Sitting / End range Spinal rotations

- Seated cycling
- Treadmill running (particularly on incline)
- Dead lifts
- Good Mornings
- Leg Press
- Free Squats
- Standing hamstring stretches
- Reverse abdominal Curls

- Seated shoulder press
- Seated chest press / pec dec
- Rollups / roll downs
- Teasers!

Suggested Exercises to include:

All Neutral Spine Core / Back extension (mild) / Non-impact cardio

1. Supine core exercises
2. Sidelying core stability exercises
3. Prone core exercises eg: 4pt, hover, plank or arm/leg transfers
4. Prone / standing glut max exercises
5. Sidelying or standing gluteus medius exercises
6. Back endurance exercises (swimming / superman)
7. Latissimus strengthening
8. Bent knee hamstring stretch in supine position in neutral spine
9. Piriformis , Hip flexor, rectus femoris, calf /Achilles stretches
10. Prone cobra extensions (gentle)

For more examples of Core and Pelvic Stability exercises along with their descriptions and pictures in order of progression, attend our workshop or purchase our Core and Pelvis Exercise CD.

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Merrin is currently the director of a health professional education business called ACTIVE ANATOMY. Combining her experience as a Physiotherapist, Pilates Instructor and Exercise Scientist has enabled her to become a specialist in corrective exercise programs.

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