Discogenic Low Back Pain

Who gets discogenic low back pain?

It is likely most people will experience low back pain at some point in their lives. Research suggests that 4 out of 5 adults are likely to develop low back pain at some point \(^{[1]}\). Discogenic low back pain accounts for 26%-42% of persistent low back pain problems \(^{[4]}\).

What causes discogenic low back pain?

The causes for most back pain problems are unclear. Some studies report up to 85% having no detectable cause on x-ray or MRI \(^{[3]}\). Most back pain is mechanical in nature and maybe caused by bad posture, bending/twisting, pulling or lifting injury. Any of these activities can put a strain on the various tissues around the lower back causing pain. As most cases are considered simple mechanical back pain, the majority get better on their own.

However, discogenic low back pain occurs when there is internal disruption of the disc. The outer layer of the disc (annulus fibrosis) is stimulated by nerves and when this becomes disrupted, weakened or damaged may cause pain \(^{[2]}\).
It is thought that a healthy disc will retain roughly 70% water and contain special proteins that absorb water like a sponge. However, as we get older (>20 years) the special proteins within the disc start to diminish and the disc starts to become dehydrated. As the disc dehydrates and loses its ability to act like a sponge, small cracks or fissures start to appear in the outer layer of the disc. This causes the soft material within the disc (nucleus pulposus) to push through these cracks within the disc. As this reaches the outer layer of the disc it may cause pain. However, it has been demonstrated that not all patients who have these findings on imaging will experience pain. The reason for this is unknown [4].

**Normal disc**

1. Spinal cord
2. Disc wall
3. Gel-like nucleus
4. Disc
5. Spinal segment
6. Nerve

**Injured disc** with pressure on the posterior aspect of the disc, the disc has not 'ruptured' or 'herniated' or 'bulged' or 'slipped' but pressure on the outer edge has the ability to cause pain and irritation.

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Warning signs!

Seek medical advice immediately if you experience any of these symptoms:

- Difficulty controlling or passing urine
- Not feeling the need to urinate over >8hrs
- Lose control of your bowels
- Feel numbness around your back passage or your genitals
- Develop weakness in your legs
- Develop progressive unsteadiness on your feet
- Sexual dysfunction (Erectile dysfunction)

What can I do?

It is important to keep moving in order to avoid joint stiffness & muscle weakness which can prolong the recovery from back pain. Respect the pain but keep moving. It is therefore important to manage the pain levels to enable yourself to maintain good lower back movement.

During the acute stage of low back pain (within 1-2 weeks of onset) try:

- Regular pain medication as advised by your local pharmacist or GP
- Cold compress or ice pack – crushed ice wrapped in a damp towel can be applied locally to the painful area for 10 minutes, every two to three hours. Check your skin regularly, if the skin turns excessively red or white, remove immediately as this may indicate a burn
- Relative rest – keep moving but respect the pain. If you are able to return to normal activities including work then do so.
- Gentle exercises as found in the later part of the booklet

During the chronic stage (3 months & over) try:

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➢ Pain medication as advised by your local pharmacist or GP
➢ A warm compress wrapped in a towel
➢ Exercises
➢ Return to work

**Posture**

A low seating position (90 degree angle at the knee and hip joints) straightens the lumbar curvature and increases stress upon the spine and puts more pressure on the posterior aspect of the disc causing pain.

Sitting with lumbar support

Sitting with a lumbar support maintains the natural spinal curvature and protects the sensitive structure of the spine and relieves pressure of the posterior aspect of the disc.

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A higher seating position (over 90 degree angle at the knee and hip joints) maintains lumbar curvature protecting the spine and the posterior aspect of the disc.

Leaning forwards leads to stressful overload of the lumbar back and disc.

When doing activities that involved a sustained bent position try to kneel down to avoid bending over.

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Sleeping Posture

Sleeping on your stomach is not necessarily bad for you. There is no "best" position. Remember:
- Sleep on a mattress that is firm, yet soft enough to conform to the normal curves of the body.
- Waterbeds are acceptable, especially if they are waveless or tubular, and if they are filled adequately.
- A king or queen size bed allows freedom to change positions frequently. This reduces stress on the joints and muscles and can reduce morning stiffness.

What exercises should you do?

Staying active will help with recovery from an episode of back pain. Any form of exercise will be helpful and it is best to do the one you enjoy so that you can carry on doing regular exercise. This may be in the form of swimming, walking or cycling, for instance. During the early phase of back pain it is important to respect the pain.
The following exercises are gentle enough to be done and help alleviate acute pain:

Stand straight with feet apart.

Support your back with your hands while bending your back as far backwards as possible. Keep your knees straight during the exercise.

Repeat 5 times every few hours.

The exercise should NOT INCREASE ANY LEG SYMPTOMS, if this is the case perform the exercises more gently and don’t push to far into the movement. If the symptoms persist stop the exercise and consult your physiotherapist.

Lying face down, leaning on your elbows/forearms.

Arch the small of your back by pressing your pelvis and stomach to the floor. Now bend your upper back upwards, keeping forearms on the floor.

Hold approx. 5 secs. Repeat 5 times every few hours.

The exercise should NOT INCREASE ANY LEG SYMPTOMS, if this is the case perform the exercises more gently and don’t push to far into the movement.

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Lying face down with both your hands at shoulder height.

Straighten your elbows and lift your upper trunk as far up as you can. Keep your pelvis and legs relaxed.

Hold approx. 5 secs. Repeat 5 times every few hours.

The exercise should NOT INCREASE ANY LEG SYMPTOMS, if this is the case perform the exercises more gently and don’t push to far into the movement. If the symptoms persist stop the exercise and consult your physiotherapist.

References


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