Is there life after an acute disc injury?

Written by Helen David – member of the OMPTG

How is the spine designed?

Our spine is a complex structure which protects our spinal cord, allows us to have multidirectional movement, bears our body weight and maintains our upright posture. There are 24 individual vertebrae, plus the sacrum and coccyx which are formed from several fused vertebrae. Each mobile vertebra has a solid part in front, the vertebral body, and a hole at the back, framed by an arch of bone. When the holes and arches are lined up, they form the spinal canal which serves as a protective passageway for the spinal cord.

The vertebrae are separated by discs, each of which consists of a soft semi-fluid central part, the nucleus, surrounded by a layer of strong concentric fibres, the annulus. The discs act as shock absorbers. They are also able to alter their shape, thus allowing movement of one vertebra on another and of the spine as a whole. Two small joints exist, one on each side, between vertebrae. These influence movement between each vertebral segment and of the spine as a whole.

Between each two vertebrae there is a small opening on either side through which a nerve leaves the spinal canal. These spinal nerves supply our muscles, enabling them to contract and thus allowing us to move. They also supply and our skin and other tissues, allowing us to feel temperature, pressure and pain. Nerves are our alarm system: pain is often the warning that some structure is about to be injured or has already sustained some injury.

How are the discs injured / strained?

Damage to the joints and discs of our spine is commonly a result of gradual wear and tear from overuse, misuse and abuse. This can start from an early age with our school and sport activities and continue in later life with the repetitive stresses of work and home activities. Progressive disc degeneration can also be the result of poor posture, osteoporosis of the spine and diseases such as bone cancer or tuberculosis.

Damage may also be sudden as a result of a traumatic event such as sporting injuries, motor vehicle accidents, occupational accidents and falls.

A damaged disc may bulge, tear partially or tear more severely releasing a fragment of the disc into the spinal canal. (A disc injury is often described as a “slipped disc” in layman’s terms but this is incorrect.) These events may or may not cause pain. A number of studies have revealed that people may continue to lead a pain-free life despite showing disc damage on an X-rays or MRI scans. Where damage does produce pain, it can either be due to nerve fibres within the annulus of the disc registering pain, or due to spinal nerves which pass close to the disc being irritated and resulting in pain being felt in areas supplied by that nerve. In the case of an injury in the lower back, nerves can refer pain to the abdomen, buttock, leg and foot. Irritated spinal nerves in the neck can refer pain to the chest, shoulder, arm, and hand.
In more serious cases a nerve may be completely compressed, not allowing nerve impulses to pass messages on to the parts of the body that it supplies, resulting in muscle weakness or numbness of the skin.

Can an OMPTG physiotherapist help?

Physiotherapists belonging to the OMPTG (Orthopaedic Manipulative Physiotherapy Group) have a special interest in spinal conditions and are trained to assess the patient and determine the appropriate course of management of the disc problem. In severe cases, a person may need to be referred to other medical specialists such as an orthopaedic surgeon or a neurosurgeon. The specialist will decide whether further medical investigations or treatments (medicines, hospitalisation or surgery) are required in combination with physiotherapeutic management. Surgery is only an absolute necessity in a very small percentage of cases. Many severe cases will recover, given time and the appropriate management. The recovery time of an acute disc injury varies greatly, from a few weeks to a number of months.

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What does an OMPTG physiotherapist do?

The physiotherapist plays a vital role in educating the person who has suffered a disc injury. The person will be able to facilitate their recovery if they understand the pathology of their injury and the aims of treatment. With disc pathology one must strive to be in pain-free positions and postures as much as possible. It is important to maintain a balance between rest and gentle mobilisation (movement), which is essential for the health of the tissues.

Individuals may develop emotional side-effects such as depression, anger, anxiety and irritability with lengthy recovery periods. The physiotherapist can suggest ways of dealing with these emotions. Often individuals are able to cope better if they are given positive advice on how to manage their injury. In some instances an individual might require counseling and appropriate medication.

In the acute stage of a disc injury a person may have severe muscle spasm. Muscle spasm is our body's protective response to pain and is a warning to decrease our activity level. However, muscle spasm can become counter-productive and may lead to further disc or nerve compression, causing a vicious cycle of pain and muscle spasm to develop. Physiotherapists are skilled in using various techniques to reduce pain and muscle spasm, thus allowing healing to occur more rapidly.

As soon as the acute phase of the disc injury has passed, the physiotherapist and the individual must work together to rehabilitate optimal spinal function. Exercise is crucial in the rehabilitation phase. It is important to realise that exercises need to be specifically planned for each individual, as there are different body types, different ages, and different pathologies. Some exercises are designed to mobilise the tissue systems of the body such as the muscles, joints, neural tissue and connective tissue. Other exercises are designed to improve the strength and endurance of the postural (core stability) muscles of the spine, shoulder girdle and pelvic girdle. Mobility and good muscle function are vital to prevent or minimize injuries and further degeneration of the spine.

The physiotherapist will guide the individual as to when it is safe to return to work, sport and recreational activities. It is important to pace this return so that the healing tissues are not placed under excessive strain. In some cases an individual might not be able to return to their original level of activities without risking a recurrence of the disc problem or possible injury to adjacent discs. These individuals need to consider some lifestyle changes such as enjoying day walks rather than hiking with a heavy backpack or running short distances rather than marathons.

Can disc problems recur?

The recurrence rate of neck and back pain is as high as sixty percent after an acute episode.
Research indicates that this percentage could be markedly reduced by a combination of early effective physiotherapy treatment and an appropriate exercise programme. Recurrences can also be reduced by analyzing one's lifestyle, with the assistance of the physiotherapist, and making small changes such as losing excess weight, improving work postures and modifying sport and recreational activities.

To find an OMPTG physiotherapist in your area, go to our website www.omptg.co.za or email us on omtgsa@icon.co.za