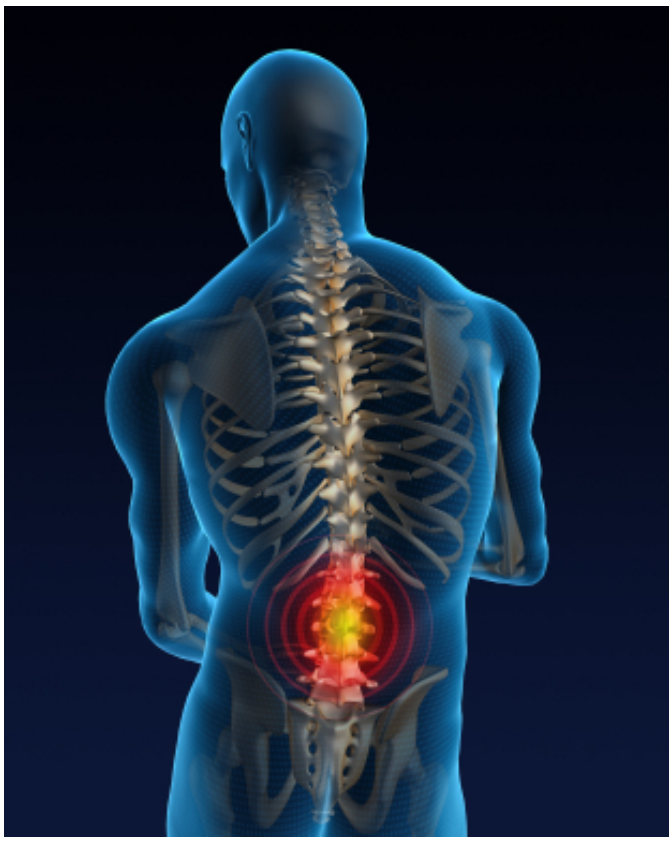
LOWER BACK PAIN



Low back pain (LBP) is an extremely common, with up to 80% of people suffering from various levels of discomfort and limitation in their daily lives.

It is often due to low key events such as bending forward to put your shoes on or picking up a pen awkwardly from the floor but can be caused by trauma and injury.

Common causes of low back pain:

1**. Non-specific Low Back Pain (NSLBP)**

Low back pain can be caused by structures being too tight (hypo-mobility) or too loose (hyper-mobility). The pain producing structures in the lumbar spine include the vertebra, the facet joints (links two vertebra together in your spinal column), intervertebral disc, ligaments, nerves and their protective coverings, muscles and their attachments.

With our activities of daily living (whether this is by being inactive or participating in sport) these structures may become overloaded and fatigued over time. This 'wear and tear' cause's micro-trauma within the facet joint or intervertebral disc, causing it to 'lock', preventing the joint from moving smoothly throughout its normal range. This can result in pain, movement dysfunction and degeneration.

2**. Intervertebral Disc Degeneration / Sciatica**

The intervertebral discs are composed of a soft tissue, (inner nucleus pulposus surrounded by a tough fibrous outer ring, the annulus fibrosus). With trauma and / or ageing, the disc can weaken and thin (disc degeneration or herniation), particularly with the repetitive combination of bending forwards while rotating the trunk i.e. lifting. This may result in the disc bulging outwards and exerting pressure on spinal nerves. This disc degeneration process is often incorrectly termed as the 'disc slipping out and in', and it's important to realise that this does not occur. In some serious cases, the disc may leak some fluid into the spine from the internal nucleus pulposus, known as a disc prolapse.

Compression of a spinal nerve by a disc fragment causes radiculopathy, which may include weakness of muscles controlled by that spinal nerve, pain in the distribution of the nerve root, or sensory changes such as numbness, tingling, or hypersensitivity in the same area. Back pain is often experienced in conjunction with these symptoms. Sciatica is a term used to describe pain which occurs in the distribution of the sciatic nerve, a major nerve in the leg made up of several spinal nerves from the lower spinal cord.

3**. Lumbar Stress Fractures**

LBP may also be caused by spondylolysis, or a stress fracture. This is often seen in sports involving repeated back extension and rotation, such as gymnastics, cricket fast bowling or tennis. While it was thought to be congenital, it is probably an acquired overuse injury. The fracture usually occurs on the opposite side to the one performing the task i.e. a left sided fracture occurs in a right handed tennis player.

Spondylolisthesis, which is defined as a slippage of one vertebral body forwards in relation to the one below, can also cause LBP. This usually occurs where the lumbar and sacral spines meet at the bottom of the back. This slippage may be caused by stress fractures of the pars regions (as above), degenerative changes in the spine, congenital defects of the spine, or trauma. The result is pain caused by spinal nerve compression, with symptoms similar to those seen in spinal canal stenosis, or irritation of nerve endings at the joints, which results in back pain.

4. **Spinal Canal Stenosis**

Another commonly encountered cause of LBP is spinal canal stenosis. The condition is caused by arthritic degeneration of the spine, resulting in the vertebra, facet joints, and ligaments which surround the spinal nerves of the spinal cord to become enlarged. In this manner, these structures may compress one or several spinal nerves, causing LBP, leg pain, and leg numbness while walking. These symptoms maybe relieved by rest.

Investigations may include:

•X-ray: to exclude fractures and to 'screen' those patients whose LBP is not responding to treatment.

•CT scan: is commonly performed in patients suspected of nerve root compression, spinal cord stenosis or facet joint pathology.

•MRI: is used to investigate the structural status of the intervertebral disc i.e. degeneration ('bulging') or a tear in the outer annular wall.

Symptoms:

• Pain in the back sometimes referred to legs

• Difficulty in moving i.e. can't straighten up or uncomfortable sitting

• Muscle spasms in the back

• Referred pain and / or altered sensation into the groin, thigh, leg or foot

• Sleep can be disturbed with pain on rolling over

• Slumped positions such as that in a car seat or on the couch at home, cause pain

• Pain sometimes on coughing and sneezing

Treatment

Physiotherapy management varies depending on the specific back diagnosis of the individual athlete, but will possibly include:

•Massage of the muscles to relieve pain, muscle spasm and promote healing.

•Gentle joint mobilization techniques to relieve the spinal segment and 'free it' to move without pain, throughout its full range.

•Strapping techniques in the acute stages to protect the vulnerable joints.

•Commence a progressive muscle strengthening program to improve both your core stability and general back strength, so as to protect your intervertebral disc, their associated ligaments and joints, from 'general wear and tear'.

•Maximise your muscle flexibility, in particular your hamstrings, buttock and hip muscles.

•Improve your physical fitness and advise you on ongoing activity as maintenance.

•Provide postural education on reducing the load on the joints and muscles, so as to minimize the recurrence of back pain. This includes modifying your daily work tasks, sporting and personal activities.