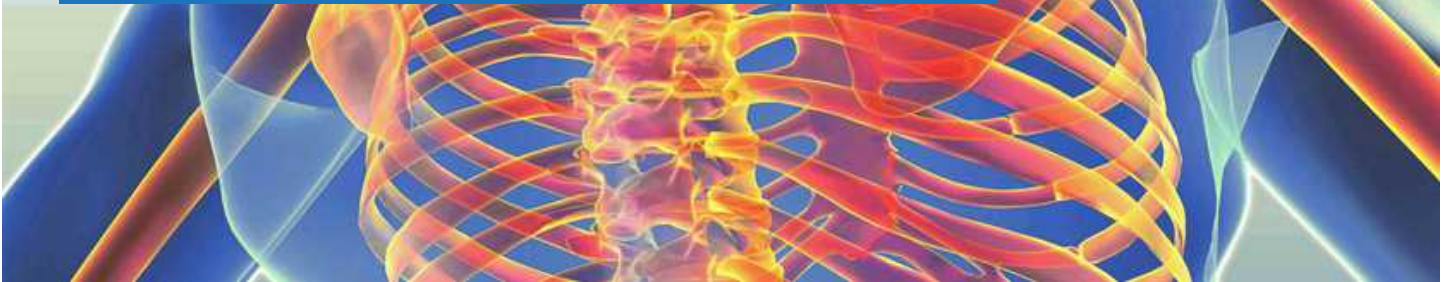


SMALL MUSCLES BIG PROBLEM

By : Mark Roughley

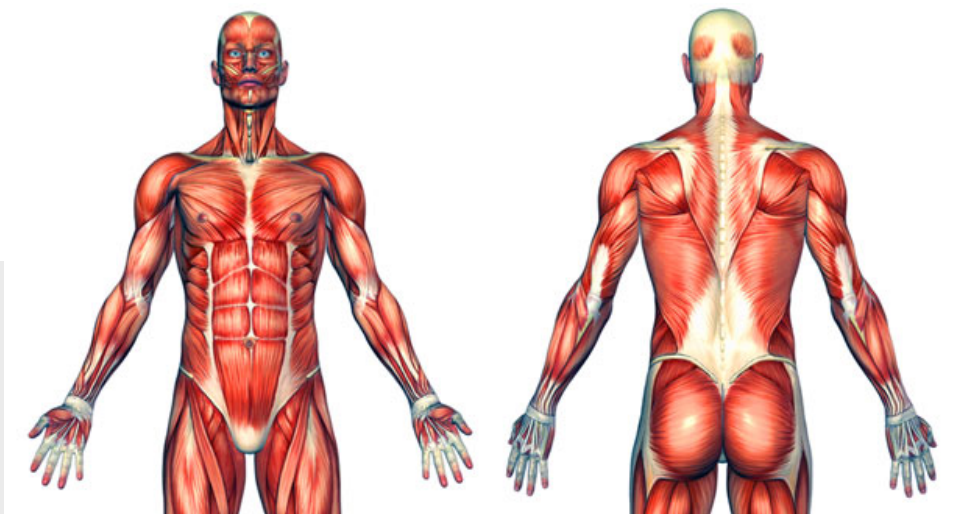


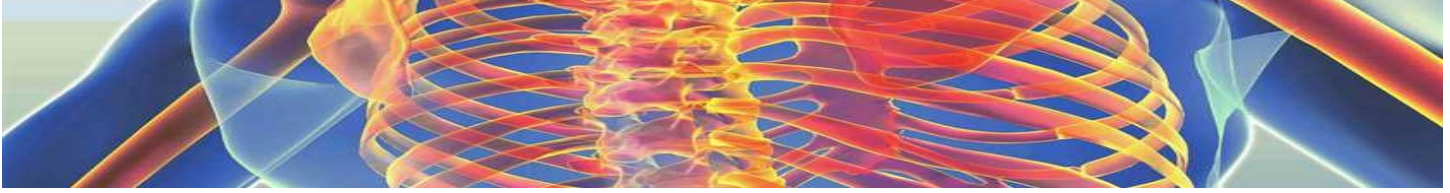
BACK PAIN AND EPISODES OF DISCOMFORT

How the small stabilizer muscles of the spine can cause long term lower back pain or lead to regular episodes of debilitating discomfort. Lower back pain is something that affects the vast majority of us at one stage or another in our lives. If we are lucky, it may be a single acute bout that is remedied relatively quickly, however for the less fortunate it can either be a regularly reoccurring flare-up or develop into a long-term chronic affliction. Our bodies have a fantastic capacity to heal themselves of any number of illnesses and injuries but lower back pain seems to only ever be partially resolved. A significant contributory factor to this is the modern sedentary lifestyle that we lead. Even if we are relatively active

as weekend warriors, the unavoidable 8-9 hours a day sat behind a desk with poor seated posture, an un-ergonomic workstation and the associated stress that comes part and parcel of work, all place unnatural stresses and strains on the body. We are designed to keep moving with periods of rest in between rather than at rest with periods of activity. Due to this lifestyle, we are more prone to injuring our backs from seemingly innocuous movements such as bending over and picking up a bag of shopping. Back pain can be caused by various structures and tissues within and around the spine. It can be divided into two broad categories

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either compressive or mechanical back pain.

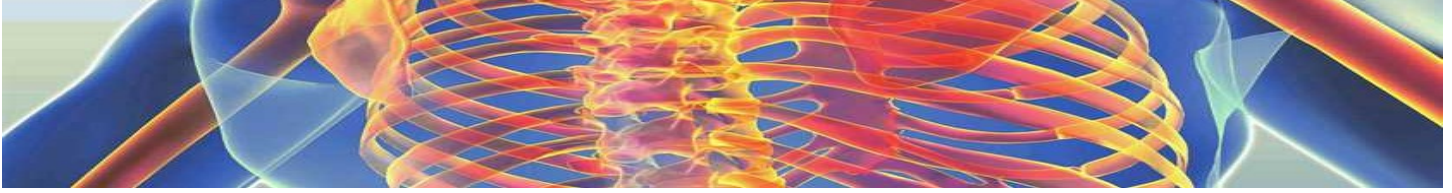
Mechanical back pain can be described as pain relating to the movement of the spine, the more we use our back the more it hurts. It occurs with injury to the spine's discs, ligaments, muscles and facet joints resulting in localized inflammation and pain. Many conditions can cause it including fractures of the vertebrae, muscle strains, ligament injuries of the spine and wear and tear of the spine's joints and discs. Compressive pain results from irritation or pressure on the spinal cord or nerve roots as they exit the spine. An example of this is a disc bulging outwards into the spinal cord that can cause problems with the nerves. This pressure or irritation is manifested by pain, numbness or muscle weakness, sometimes in locations a distance from the actual cause of the problem, such as the foot (sciatica).

It is important to identify the cause of the pain so that the appropriate treatment and management can be tailored to an individual's problem. Manual therapies such as osteopathy and physiotherapy provide good avenues to resolve most lower back pain issues although more serious disc and nerve damage may require surgical intervention. Until recently, it was thought that a patient would recover from a lower back injury regardless of which treatment was applied; however mounting evidence refutes this theory. As well as the large muscles of our backs which control large movements of our bodies there are also small intrinsic muscles of the spine, called the multifidus. These muscles link each individual vertebra to one another and as a group they extend the length of the spine. In the past, because of their size, they were considered insignificant, but now they are known to be the foundation of support for the spine. They also help to remove some of the pressure off the vertebral discs so that our body weight can be more evenly and appropriately distributed along the spine. They provide stability for the spine, help keep it straight, and protect it from abnormal or unexpected movements. The multifidus muscles are recruited when we perform most of our daily activities from bending backwards, leaning sideways and turning our bodies to the side. It has also been shown that the multifidus muscles get activated before we make a movement to help protect the spine from injury. For example when we are about to carry an item, just prior to moving the arm, the multifidus muscles start to contract in order to prepare the spine for the movement and prevent it from getting damaged.

In the event of a sudden or unanticipated movement such as stepping off a curb that we haven't seen or slipping on a wet surface it is something of a shock to us and to our backs. The multifidus muscles may not activate quickly enough in order to stabilize the spine and this may result in injury. Whilst the usual symptoms of pain, inflammation and a tightening of the muscles around the injured area ensue, the multifidus muscles are reflexively inhibited, in other words they are deactivated around the area of injury. The mechanism by which this occurs is not well understood but as a result of this reflex inhibition the muscles are known to waste extremely quickly. Unfortunately these muscles do not automatically or spontaneously recover when the symptoms of lower back pain have gone. We return to our normal activities assuming that everything is fine, but due to the weakness that has developed there is a greater risk of re-injury. Within the first year of the first episode of lower back pain 60-80% of people will have a reoccurrence of pain. Most people have, to some degree, some degeneration of the spine, bulged discs and some narrowing of the spinal canal. These will remain symptom free for the most part but combined with poor core muscular function they are likely to have recurring acute or chronic pain.

In the treatment of lower back pain manual therapists would first identify the source of the pain. Once identified the treatment is then directed towards reducing the pain experienced by the patient, reducing the inflammation and improving the overall function of the area so that the patient can get back to pain free activities. For long-term management it is equally important to activate and to rehabilitate the multifidus muscles so that proper spinal stabilization is present to protect from further injury. To complement manual therapy treatment, some very simple home exercises can be prescribed to help retrain the multifidus muscles to activate appropriately. Firstly to test these muscles, stand with one leg in front of the other as if walking but with the feet flat on the floor. Place your thumbs on your pelvis and your fingers on the muscles on each side of the spine. Now shift your weight slowly forwards, as you do so you should feel the muscles under your fingertips contract or tense up. Lean further forwards by raising the rear heel up (if you do not feel them contract this is a sign the muscles are not activating sufficiently).

To turn this test into an exercise once you feel these muscles contract, consciously keep them contracted



whilst you shift your weight slowly back to your rear foot. Hold this contraction for 10 seconds, relax for two seconds and repeat 6 to 10 times both sides. In this exercise you are using the conscious mind to retrain muscle activation. Initially it may feel like a lot of effort is required and this implies inefficient core stabilizers. However once these muscles are retrained you will no longer need to consciously activate them and you should be less susceptible to recurring or chronic lower back pain.

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