



Lumbar Instability

While most episodes of lower back pain subside within 2 -3 months, 80% recurrence rates are reported in the low back pain population. This is often despite the individual presenting to their G.P or medical provider and having some form of treatment including medication, massage, manipulation, acupuncture and stretches. These forms of treatment may often help resolve the pain, but it is often reported that this only provides short term relief.

Lumbar Instability is one such subgroup of the low back pain population who may not have had long term success with these therapies. Lumbar Instability is best described by thinking of a tent pole and its stays. The tent pole represents the spine (vertebrae, discs and ligaments). We refer to these as the passive system. The tents stays represent the muscles and in part the nervous system, referred to as the active system. The tent pole may be made of a strong material; however an upright tent pole standing alone without support can't withstand much load and is not very stable. A tent pole supported by stays not only can cope with more load (i.e the weight of the tent), but is now increasingly more stable.

Spinal segments work in a very similar way. If there are increased loads on the vertebrae and discs, without the muscles to support it, this can lead to a gradual increase in stress on these tissues, and eventually pain. Further problems arise when, after repeated episodes of low back pain, the muscles get progressively weaker and the nervous system changes how we move to avoid the pain. So now think of the tent pole where the stays are pulled tighter and shorter on one side, and are loose and longer on the other. This would put more stress on the tent pole and will cause further damage to it. This is a good example of **Lumbar Instability** where we have made adaptations to 'get around the pain' and do not have good motor programming to support the lumbar spine.

It is very important to 'reboot the hard drive' if the cause of the low back pain is indeed due to instability. The motor programming may be there, however retraining the correct sequences, i.e. correcting the length and strength of the stays is vital for long term management of the low back symptoms. Core stability exercises are a key part of this 'rebooting' process. However the design and prescription of therapeutic exercises is not just about performing 'stabilisation' exercises. It is about finding good technique and precision in form. It is therefore important that a lumbar stability programme is individualised and caters to the needs of the person.

The aim of physiotherapy for the patient presenting with lumbar instability is to:

- Identify where in the lumbar spine the symptoms are arising from
- Identify what activities aggravate the individual
- Determine what adaptations have been made to 'get around the pain'
- Organise a treatment plan, including which therapeutic exercises are most appropriate

A Case Study

Lucy, a 35 year old female nurse injured her right lower back lifting her 5 month old baby out of the cot. She described the pain as a constant dull ache that occasionally radiated down into her right thigh. She had a similar episode 2 years prior, after she lifted her eldest child from the bath. This episode had settled approximately 70% with pain medication; however Lucy had noted intermittent episodes of similar low back pain over the next 2 years, especially with prolonged sitting, assisting patients at work (prolonged bending) and changing her baby's nappies. Lucy recalls having suffered with this prior to the birth of her first child, over the course of her 10 year nursing career, however it was not significant. Although the pain was not 'excruciating', Lucy was concerned by the recurrent nature of her pain and the increasing frequency of her symptoms.

Lucy was diagnosed with lumbar instability which was starting to aggravate a lumbar disc. This was highlighted by her recurrent episodes of low back pain brought on by bending loads. Lucy had 8 physiotherapy sessions over 6 weeks. Lucy's treatment consisted of some massage and **mobilisation** techniques initially to settle the acute episode of low back pain and assist with pain management. Lucy was given some **postural strategies** for work and home to alleviate the pressure, which she could implement straight away. Lucy started some **specific deep abdominal activation exercises** at her third session, and was shown correct patterns of activation using **Real Time Ultrasound Imaging** for feedback.

Lucy was given a progressive core stability program over the next 6 weeks. She then proceeded into supervised, weekly, one on one **Pilates** sessions with a physiotherapist to continue her functional rehabilitation.

Lucy is now 6 months post injury. She reports no pain with lifting tasks or with prolonged sitting or bending. Lucy also reports a reduction in pain medication use. Lucy is continuing with a home-based stability program, which she performs three times per week.

Manipulation—Is it all its “cracked” up to be?

Do you know of friends or family members who depend on regular manipulation? Does treatment seem to be on-going with only short term relief and return visits necessary? Here at Forrest Hill Physiotherapy, our philosophy mirrors the NZ Manipulative Physiotherapy Association's and the findings of the Cochrane Report.

Manipulation may be appropriate once the acute phase of the injury has settled, but not in the presence of leg pain or spinal disc symptoms. Manipulative therapy is taken seriously here at Forrest Hill Physiotherapy and often the Physiotherapist's clinical reasoning on a patient by patient basis dictates that manipulation may not be the best option. Rather, an approach that incorporates gentle mobilization, muscle strengthening, postural re-education and exercise rehabilitation is often a more effective and long term solution.

We aim to teach patient responsibility and self-management as key to improved function over the longer term and reduce therapist dependency. Manipulation in the wrong circumstances can have dire consequences so only those therapists with appropriate post-graduate skills should attempt this after clear discussion and explanation with the patient.

Real Time Ultrasound for chronic low back pain patients

Often the key to resolving the common condition of Chronic Low Back Pain, can be the instruction on correct use of key postural muscles, primarily the stabiliser muscles of Transversus Abdominus and Multifidus. This takes skill and often patients find it difficult to isolate and effectively retrain these muscle groups. To this end and as an optional extra service to our normal Physiotherapy treatment, we are now able to offer Real Time Ultrasound Imaging. **This is a teaching tool only and is not for diagnostic purposes.**

This is a wonderful tool for patients who are continually frustrated by ongoing back pain and less than effective stabilisation interventions to date.

Suggested viewing: <https://www.youtube.com/watch?v=BOjTegn9RuY>