



- **Physiotherapy**
- **Real Time Ultrasound Imaging**
- **Clinical Pilates**
- **Contenance Physiotherapy**
- **Massage therapy**

New Look Logo - same people!

After 14 years in our current location, we decided that our old logo needed a little refreshment—we hope you like it!

Lumbar Instability – What Is It?

While most low back pain (LBP) episodes subside within 2 to 3 months, 80% recurrence rates are reported, at great cost to both the patient and the health system with 85% of the LBP population classified as having ‘non-specific low back pain’. Lumbar segmental instability is one subgroup identified within the LBP population. Panjabi (1992) defined spinal instability as a region of laxity around the neutral position of the spinal segment, referred to as the ‘neutral zone’.

The neutral zone is upheld by the integration of passive (vertebrae, discs, ligaments), active (muscles, tendons) and neural (nerves, central nervous system) systems.

Instability can both cause, and be the result of injury. Tissue damage results in a loss of stiffness in the supporting tissues allowing unstable joint behaviour. Although there is often a singular pain-provoking ‘event’ that the patient can recall, this is usually preceded by a history of repetitive loading which gradually, but progressively, reduces the level of tolerance to tissue failure (McGill, 2003).

Neuromuscular retraining, or “rebooting the hard drive” in this LBP population is vital. In most instances, it is a matter of retraining an existing programme. Core stability exercises do not make the spine more stable, they make it more robust, therefore reducing risk of re-injury. This is best explained dia-

grammatically. Figures 1a & b demonstrate an unstable versus a stable segment. Even a small perturbation from the middle will cause the ball to roll away in 1a. However in 1b, the ball will come back to rest in neutral despite a perturbation. The shape of the surface also determines how robust the system is to perturbations (figure 2a,b). In figure 2a the ball is robust and stable enough to cope with both large and small perturbations, whereas in figure 2b the ball will only cope with small perturbations. Therefore 2b is stable but not robust. (Reeves et al., 2007).

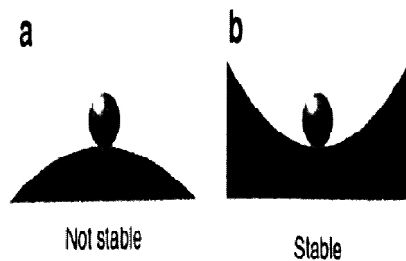


Fig 1 (a,b) Stability of a ball

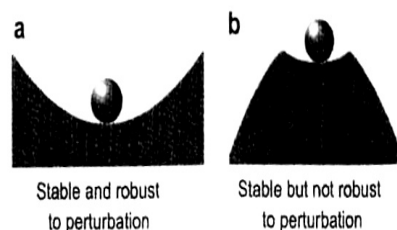


Fig 2 (a,b) Robustness to Perturbation

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

1. Identify the symptomatic, unstable segment and correlate this with radiological findings if present
2. Identify what activities aggravate the patient.
3. Determine the neuro-muscular strategies utilised by the patient i.e substitution patterns
4. Organise a treatment plan, consisting of multi-disciplinary care (i.e. pain relief, imaging), manual therapies and exercise prescription.

The management of lumbar segmental instability needs to be conducted in stages, and relies on the integration of appropriate progressive therapeutic exercise.

“Designing and prescribing therapeutic exercise is not just about getting a patient to perform ‘stabilisation’ exercises. It is about finding the subtle techniques and precision in form, motion and motor patterns that ensure that the exercise is building a patient’s back and not tearing it down” (McGill et al., 2003).

It is therefore important that the programme is individualised and catered to the patient’s daily requirements.

READ OVER THE PAGE FOR A DETAILED CASE STUDY OF LUMBAR INSTABILITY WHICH DESCRIBES OUR APPROACH AND MANAGEMENT



Congratulations to Staff members

Jennifer Sayer

Recently appointed to the Football Ferns - NZ Womens Soccer team, en route to the World Cup 2011 and London Olympics 2012.



Bede Christey

Physiotherapist supporting the East Coast Bays Premier rugby team after a successful pre-season tour to the Gold Coast.



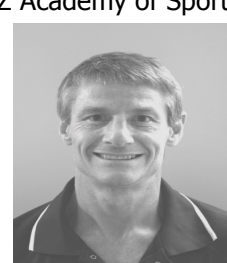
Kelly Rope

Physiotherapist appointed to NZ U17 Womens Soccer team. Assisting in their build-up to the World Cup in Trinidad and Tobago this September.



Chris McCullough

Recently awarded the Prime Minister's Scholarship for research projects and support of NZ Canoe Racing (Kayaking) and role as Physiotherapist for NZ Academy of Sport.



A CASE STUDY: Lumbar instability

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 LBP 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 LBP 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 an acute right L4/5 disc wall strain. Underlying this was a history of chronic lumbar instability, highlighted by her recurrent episodes of LBP brought on by flexion loads.

Lucy had 8 physiotherapy sessions over 6 weeks. Lucy's treatment consisted of some **manual therapy techniques** initially to settle the acute episode of LBP and assist with pain management.

Lucy was given some **postural strategies for work and home** to alleviate pressure on her L4/5 segment, which she could implement straight away. Lucy started 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 programme over the next 6 weeks. She then proceeded into supervised, weekly, one on one **Clinical 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 programme, which she performs three times per week.

Our Staff Members.....

Physiotherapy

Chris McCullough
Bede Christey
Kelly Rope
Jennifer Sayer
Stu Ross
Kate Ellis
Kirsty Neal

Contenance Physiotherapy

Melanie Barrett

Administration

Fran Short
Angela Win
Jan Williams
Samantha Osborne
Ali Gibson

Massage

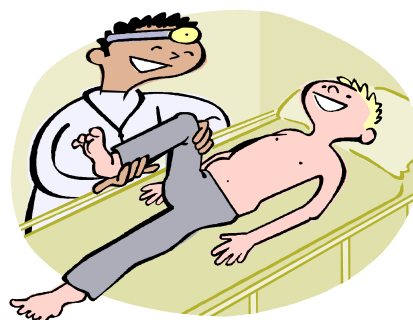
Natalie Dent
Tanya Gamman

Clinical Pilates

Nikki Darroch
Natalie Dent
Leanne Hopkins
Kate Ellis (Physio)
Kirsty Neal (Physio)

Practice Manager

Nicola Darroch



Remember: all our Physiotherapy staff have extensive private practice experience and have either completed or are undergoing Post-Graduate/Masters training. This is a minimum one year of full time study in addition to their four year degree in Physiotherapy.

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