



# NEW WEST SPORTS MEDICINE

Randy Celebrini, Jim Govett ©2003

## CORE STABILITY & REHABILITATION

Physiotherapy treatment of injuries to the lower back and pelvic region has changed significantly in recent years. This is due to improved understanding of the functional anatomy of the region, as well as the causes of pain and dysfunction. Previous emphasis on symptomatic relief and strengthening of the large muscle groups has been replaced with a much more comprehensive approach of treating the “core” as a functional unit.

Core training and rehabilitation has proven to be a great asset in the treatment of several difficult and chronic injuries, which did not respond well to conventional treatment methods. See table 1 for a list of injuries that can be effectively treated with core rehabilitation techniques.

Table 1 – Diagnoses treated with Core Rehabilitation

<ul style="list-style-type: none"><li>• Chronic abdominal &amp; lumbar muscle strains</li><li>• Degenerative Disc Disease</li><li>• Lumbar facet sprains</li></ul>	<ul style="list-style-type: none"><li>• Osteitis Pubis</li><li>• Spondylolysis &amp; Spondylolisthesis</li><li>• Sport groin/hernia (abdominal wall strain)</li></ul>
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The term “core” is frequently used among health professionals, personal trainers and the public at large. Core is a mechanical term used to denote the muscular centre of the body. Anatomically it represents the coordinated synchronous firing of the muscles of the anterior and posterior abdominal wall, the pelvic floor and the diaphragm. These muscles, along with the inert tissue and bony elements of the region, provide for the combined roles of both mobility and stability.

Core rehabilitation provides a method of retraining postural control and dynamic stability following an injury. In achieving these goals, patients are able to regain normal patterns of muscle recruitment, and to break dysfunctional compensatory patterns. The programme is progressed from lower difficulty exercises to highly challenging and demanding drills, moving continuously closer to the specific skills of an athlete’s sport. When an athlete can see a direct relationship between their rehabilitation and their sport participation, they are more willing to give it their all, and less likely to become non-compliant. This is very important when sport participation has been limited by the injury for what has already been too long as far as the athlete is concerned.



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## The Core of the Programme:

- I. Patients are educated on how to recruit the muscles of the pelvic floor and transverse abdominal muscles while breathing diaphragmatically. Initially these exercises are taught in supine to decrease compression on the spine.
- II. These basic recruitment strategies are applied to the production of limb movements maintaining core stability (Figure 1)
- III. The physio ball can be introduced and patients are educated first on dynamic sitting. Once proper movement strategies are maintained the exercises can become increasingly demanding by:
  - Decreasing the base of support (Figure 2)
  - Closing eyes
  - Adding resistance to upper / lower limb
- IV. Core training is usually combined with exercises promoting flexibility, postural awareness and biomechanical efficiency.
- V. As greater skill is demonstrated, core training can be progressed and applied to retraining sport specific movements. Eventually, exercises are progressed to include motions with high technical demand, and those approaching the mechanism of injury.