Motor control training for low back and pelvic pain: Assessment, training and integration with pain neuroscience (2-day)

Speaker

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Synopsis

This clinical workshop with present an integrated approach to motor control training in low back and pelvic pain. The comprehensive and individualized approach draws on latest developments in research and practice in the field of spine control and pain neuroscience.

Abstract of the course

Low back and pelvic pain is associated with motor control dysfunction. However, current models of training are often overly simplistic and emphasis is placed on optimizing static stability, without consideration of the need for dynamic control. There is also increasing awareness of pain neuroscience and the necessity to consider psychosocial aspects of pain. Newer models of rehabilitation that integrate the function of the muscle system and the integration into modern pain neuroscience are required. Integral to this function is rehabilitation of the function of the deep muscles, including transversus abdominis, multifidus, pelvic floor and the diaphragm, which provide an opportunity to control intervertebral motion, without restricting mobility of the spine and pelvis. However, this must be integrated with training of the entire muscle system in an integrated functional manner including control coordination of these muscles for breathing and continence in addition to their contribution to stability and protection of the spine and pelvis. This workshop aims to bring together training for optimal control of posture, movement and muscle activation, and to integrate this with modern pain management.

Key objectives of the course

This course will:

- Consider the presentations of motor control dysfunction in low back and pelvic pain.
- Present an integrated model of dynamic control that considers the delicate balance between movement and stability
- Integrate contemporary models of neurophysiology of pain with motor control training.
- Consider how to identify underlying pain mechanisms and use this to guide management.
- Consider the challenge to coordinate the multiple functions of the trunk muscles, including breathing and continence.
- Present the clinical relevance of the most current research evidence
- Review the basic components of assessment and treatment and introduce advanced clinical skills.
- Discuss the barriers to clinical improvement and strategies to overcome them
- Develop clinical strategies to evaluate and train the balance between movement and stability from initial assessment to discharge
- Integrate ultrasound imaging into rehabilitation with careful consideration of pros and cons of this approach

The program involves specific motor learning strategies for restoring the function of the deep muscle system and integration of the deep and superficial muscle systems. Assessment strategies will be introduced that provide clinical methods to identify normal and abnormal strategies of muscle activation. Participants will be taken through the rehabilitation process from the initial assessment to high-level rehabilitation.

Brief CV of Paul Hodges

Paul Hodges is a Professor and NHMRC Senior Principal Research Fellow in the Division of Physiotherapy at the University of Queensland and Director of the NHMRC Centre of Clinical Research Excellence in Spinal Pain, Injury and Health. Paul has doctorates in both physiotherapy and neuroscience and his work blends neurophysiological and biomechanical methods to understand the control of movement and stability and how this changes when people have pain. In 2006, 2011, 2018, 2019 and 2021 Paul was awarded the ISSLS Prize from the International Society for the Study of the Lumbar Spine. This is the premier international prize for back pain research. In 2010 he received the Achiever Award from the National Health and Medical Research Council as the highest ranked Research Fellow. His primary research interests include investigation the relationship between pain and motor control; the coordination of the multiple functions of the trunk muscles; the effect of exercise in interventions on musculoskeletal pain; and the biomechanical mechanisms for control of the spine. In addition to his research in Brisbane, Paul has ongoing collaborations with laboratories in Sydney, Melbourne, Sweden, USA, the Netherlands, Denmark and South Africa. He has published more that 520 peer reviewed papers and book chapters that have been cited more than 55,000 times. He has received more than $AU52 million in research grants from the NHMRC, ARC and International research funds.

Course Program

Day 1	
9.00-9.30	**Introduction** – the issues
9.30-10.30	**Dynamic control** of the spine and pelvis (Lecture)
10.30-10.45	Coffee
10.45-13.00	Assessment & training: **Muscle activation -** Anterior trunk muscles (Discussion/demonstration/practical)
13.00-14.00	Lunch
14.00-14:45	**Pain and motor control** of the spine and pelvis (Lecture)
14:45-15.15	The **clinical approach** to Motor Control Training (Lecture)
15.15-15.30	Coffee
15.30-18.00	Assessment & training: **Muscle activation -** Posterior trunk muscles (Discussion/demonstration/practical)
Day 2	
9.00-10.30	Assessment & training: **Posture** (Discussion/demonstration/practical)
10.30-10.45	Coffee
10.45-12.00	Assessment & training: **Movement** (Discussion/demonstration/practical)
12.00-13.00	**Coordination of multiple functions of trunk muscles**
13.00-14.00	Lunch
14.00-15.00	**Breathing and the pelvic floor muscles** (Discussion/demonstration/practical)
15.00-16:00	**Progression of exercise** (Discussion/demonstration/practical)
16.00-16.15	Coffee
16.15-18.00	**Effects of training** and evidence of efficacy (Lecture/discussion)