

Physiotherapy and the Management of Low Back Pain

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Advanced Physiotherapy

Musculoskeletal Injury

- Results in:
 - Pain
 - Inflammation
 - Autonomic changes
 - Psychological effects
 - Loss of movement, function,
 - Loss of Fitness
 - Strength, endurance, power, cardiovascular fitness
 - Loss of proprioception

Contemporary Physiotherapy Model

- Diagnosis
- Goal setting
- Pain Management and education
- Psychosocial Management
- Restoration of Movement, motor control and strength
- Prevention of Re-injury
- Ergonomics and biomechanics
- Fitness and functional testing

Necessary Physiotherapy Skills

- History taking including understanding of disability scales
- Physical Assessment
- Anatomy, Functional anatomy and biomechanics
- Manipulation, massage and other modalities such as needling
- Psychology
- Goal Setting and communication
- Strength and conditioning
- Functional testing
- Literature critical analysis

Effective Physiotherapy Requires

- Sufficient time spent with patients
- One to one management
- Use of appropriate equipment

Low Back Pain

- High prevalence
- One study in UK indicated a 1 month prevalence of 37%
- Approximately 30 % of our work (80 new cases per month)

Possible Musculoskeletal Causes of Lumbopelvic Pain

Intervertebral Disc	25 - 39%
Sacroiliac Joint	15 - 40%
Nerve Root	6 – 13%
Facet Joint	2 – 10%
Muscle/Ligaments	Unknown

Low Back Pain

- Acute vs Chronic

Acute Low Back Pain

- Rarely have a definite diagnosis
- Optimal model not established
- ? Limited literature that actually examines what happens in the real world
- A sub-group of patients who we really struggle to manage adequately

Acute Low Back Pain

- Common
- The majority improve significantly over 3 months
- Ongoing low level symptoms are common
- 44 – 90 % recurrence
- 6% significant long term issues

Stages of Treatment

- Acute
 - Functional Recovery
 - Prevention
-
- Ankle Sprain Example

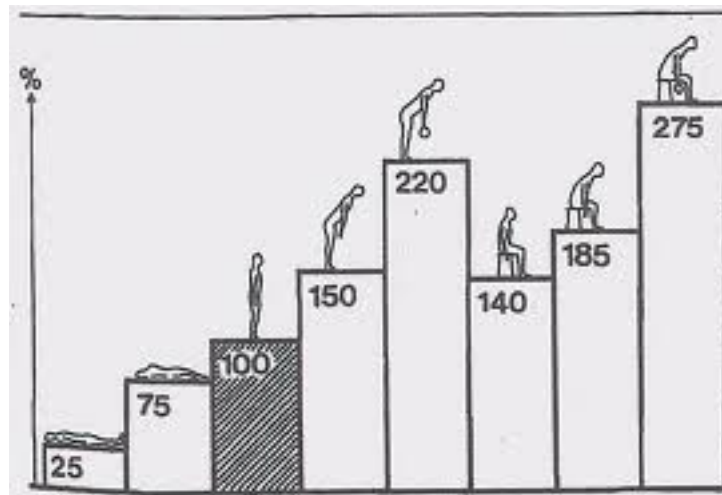
Acute Low Back Pain – Physio Management

- **Acute Phase – Pain relief, protection, education**
 - Bracing, Taping, to protect injured structures and for pain relief
 - Demonstration
 - Advice/Goal Setting/Education (back book)
 - Encouraged to see GP for analgesia
 - Reassurance
 - Need to stay active – how active needs to be specified
 - Corrective exercises
 - Demonstration of flexion extension in 4 pt kneeling
 - (Modalities for pain relief –massage, needling, TENS, Ultrasound)
 - Ergonomics
 - Demonstration of Correct Sitting vs Incorrect Sitting

Ergonomics



Changes in Disc Pressure (Nachemson)



Acute Low Back Pain – Physio Management Continued

- **Functional Recovery Phase**
 - Exercises and Mobilisation to restore range of motion
 - Demonstration
 - Exercises to restore muscle function
 - Graded exposure to pre-injury activity
 - Advice and Education
 - Ergonomics/Manual handling retraining
 - DEMONSTRATION
 - What is optimal back position for lifting

Acute Low Back Pain – Physio Management

- **Prevention**
 - Progression of exercises
 - Manual handling training
 - Overall body strengthening



Acute Low Back Pain - Evidence

- Basically 2 viewpoints
 - Assess/advised to stay active/Physio
 - Assess/advised to stay active/wait and see

Acute Low Back Pain Evidence

- Wand (2004)
 - Compared 2 models
 - Assess/advise/treat vs. Assess/Advise/Wait
 - Intervention – Biopsychosocial education, manual therapy and exercise
 - Study outcomes – Pain, functional disability, mood, general health, quality of life
 - assess/advise/treat group did better on all measures at 6 weeks and most measures at 12 months

Acute Low Back Pain Evidence

- Hides (1996, 2001)
 - Found that muscular recover (Multifidus) was not automatic after resolution of NSLBP
 - Hypothesised that the back is vulnerable to re-injury due to loss of muscle function
 - Retraining of the muscle - 12 Month recurrence rates c.f. controls 30% vs. 84%



Summary

- Physios need to use the modern model to be effective
- Manipulation/mobilisation/needling have some soft evidence to support them and in the clinic help some patients
- They have very limited value past 6 weeks where the approach needs to be focused on exercise, biomechanics and ergonomics
- Future research needs to look further at this multi-modal approach
- Further progress may be possible with sub-categorisation of low back pain into sub-categories
- Further research needed into the non-responders

Timing of Referrals

- Early Referral
 - Earlier pain relief
 - Reduced secondary changes such as loss of muscle function
 - Removal of Drivers such as poor posture, fear avoidance

Chronic Low Back Pain

- Some evidence for
 - Manual treatment
 - Exercise
 - Education
- But Good evidence for a combination of these

Chronic Low Back Pain

- Manual Therapy
- Targeted Education
- Specific Muscle Strengthening

- Effective in Improving pain and disability

[Moseley L (2002): Combined physiotherapy and education is efficacious for chronic low back pain. *Australian Journal of Physiotherapy* 48: 297-302]

Eraring Study

- 8 Participants with Chronic Low Back Pain
- 16 week intervention of supervised exercise and home exercises
- VAS 24% lower
- Disability Scores 19% lower