Simple mechanical back pain

Unit: Understanding medical conditions for exercise referral

Mechanical, or non-specific back pain

- The most common form of back pain
- Not attributed to any specific pathology
- Considered to be a mechanical problem
  - caused by a disturbance of function
  - has a physical cause
  - not any serious structural damage
- In rare circumstances, can signal the presence of a serious underlying disease
- Psychological issues
  - affect how well people cope with back pain
  - not the cause of the pain

Classification

- Categorised according to its duration
  - acute (less than 6 weeks)
  - sub-acute (6-12 weeks)
  - chronic (greater than 12 weeks)

NB: This system may be too rigid, as many find that their symptoms vary

Sub-classification of back pain

Sub-classification system	Comments
Patho-anatomical model (tissue or structure)	Pain patterns and pain provocation tests used by physiotherapists to label structures contributing to mechanical pain.
Motor functions	Addresses a diverse range of motor function deficits. Based on the premise that habitual movements place stress on tissues and lead to microtrauma and eventually irritation and symptoms.
Psychosocial factors	e.g. taking sick leave, the development of psychological signs, health care seeking, and poor outcome with certain types of injuries.
Pain mechanisms	Mechanisms influencing the client's pain state.
CNS coordination	Deficits in proprioception, sensory motor function, and learning skills.

Prevalence

In the UK:

- 4 out of 5 adults will experience back pain at some point in their lifetime
  - around 20% will report it as their first occurrence of back pain
- Almost all cases of acute back pain are classified as being non-specific
  - approximately 75% have reduced pain, or pain free within 4 weeks

Cost to the nation

- Health care costs estimated at £1,632 million (1998)
- £565 million was the cost of non-NHS health care costs
  - the use of private therapists
- Indirect costs are larger
  - losses in productivity estimated between £3000 million and £9000 million

Pathology

- Not attributable to any underlying disease
- Has a physical cause
  - the majority of pain stems from benign musculoskeletal problems such as ligament sprains or muscle strains
- Other mechanical causes include:
  - degenerative discs
  - lumbar spinal stenosis
  - sciatica
  - scoliosis
  - leg length differences
  - restricted hip motion
  - misaligned pelvis
  - abnormal foot pronation
  - acquired postural misalignments

Presentation

- Pain that is sudden-onset
- Pain that is stabbing, burning, aching (dull), or constant
- Pain on waking, and towards the end of the day
- Pain during prolonged sitting or standing
- Pain on running
- Pain on forward and side bending
- Pain on repetitive bending
- Pain on getting out of a chair
- Pain on coughing or sneezing
- Pain with straight leg raising and trunk flexion exercises

Risk factors

- Age
- Physical inactivity
- Pre-existing musculoskeletal conditions
- Posture
- Overweight and obesity
- Pregnancy
- Other diseases
- Occupation

Part two

ACCEPTED TREATMENTS

Common medications

- Analgesics
- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Muscle relaxants
- Tricyclic antidepressant (TCAs)for chronic pain

Side effects may include

Analgesics

- Nausea, vomiting, constipation and drowsiness

NSAIDs

- Gastrointestinal discomfort, nausea and diarrhoea

Muscle relaxants

- Drowsiness, dizziness, loss of co-ordination, lethargy

Tricyclic antidepressant

- Drowsiness, dry mouth, blurred vision, constipation

Lifestyle intervention

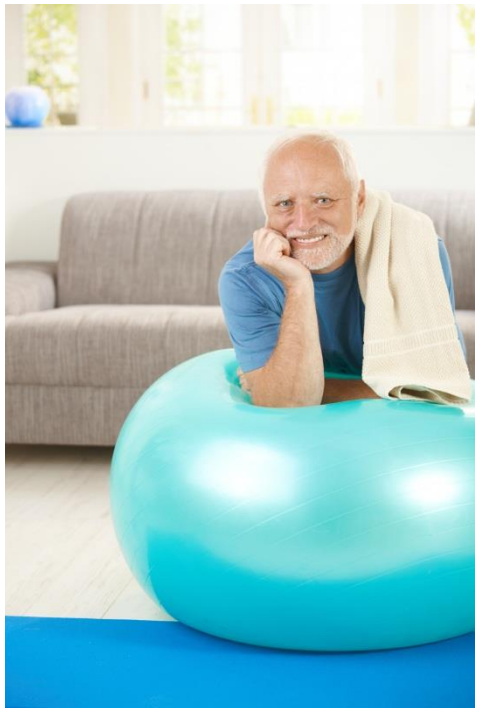
- May include
  - client education
  - dietary modification
  - behavioural therapy
  - exercise
  - occupational and functional activity modification
  - physiotherapy

Part three

EXERCISE GUIDELINES AND CONSIDERATIONS

Rationale for exercise

- Regular exercise can
  - increase a client's body awareness
  - assist understanding & self-management
  - improve recovery rate
  - reduce potential of chronic disability
  - maintain independence
  - decrease time taken off work



Exercise considerations

- Exercise goals:
  - to improve health and well-being
  - to increase exercise tolerance
  - to prevent debilitation caused by inactivity
- Programming:
  - begin with modalities that minimise stress to the lower back for the first 2 weeks.
  - light to moderate aerobic training
  - delay any high intensity/impact hip and back exercises
  - because muscular endurance may be a better predictor of long-term low back health, exercise progression should be gradual, and time rather than pain contingent

Exercise recommendations

Mode of exercise	FIT principles
Aerobic	• 30%-70% maximum heart rate, depending on pain and mobility • 15-60 mins per session • 3-5 days per week • Emphasize progression of duration
Resistance	• Emphasis on low intensity exercise for the lumbo-pelvic-hip complex • Emphasise progression of reps (endurance) • 1-3 sets of 12-20 reps at a slow tempo (4-2-1, eccentric-isometric-concentric) • 10-30 mins per session on 2-3 x/week
Functional training	• 3-5 days/week. Focus on quality of movement, • Increase repetitions as quality improves
Flexibility	• 2-4 days/week. 2mins/muscle group • Begin with static stretches; hold for 10-30 secs as tolerated • Active/dynamic stretching may be used once a pain-free ROM is achieved and there are no limitations in mobility (>2weeks)
Neuromuscular	• 2-3x/week, or incorporated within a general exercise programme

Other considerations

- Correct posture and spine alignment
- Spine sparing strategies, e.g. lifting, moving from floor to standing etc.
- A longer warm up for greater mobilisation
- Gentle mobility and stretching, including some modified Pilates and yoga exercises
- Free up movement restrictions through mobility and flexibility initially and then attend to core strengthening
- Walking should be encouraged (pace, stride length and distance may need to be modified when LBP is exacerbated)
- Light abdominal exercises more appropriate than heavy training
- Avoid staying in any single position for too long
- Abdominal breathing and relaxation exercise and positive thinking can assist with pain management

Comorbidities

- Consider
  - Any change in risk stratification?
  - Effects of medications
  - Exercise recommendations for other conditions
  - Further adaptations and modifications?