The Lumbopelvic & Hip Region

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   • IVD
   • Vertebral Endplates
   • Facet Joint

2. Pelvis & Hip Region
   • SIJ
   • Hip Joint
   • Muscles
Lumbopelvic & Hip Region

- Neutral spine increases the spine's ability to absorb up to 25-45% more compression & shear forces

- Neutral pelvis sets the platform for ideal lumbar posture & mechanics

- Neutral pelvis sets the platform for ideal hip posture & mechanics

Chapter 2

Muscle Firing Patterns/Endurance

- Abdominal wall & Lx extensors co-contraction

- Abdominal wall & thoracolumbar Fascia

- Lx extensors & Gluteal co-contraction
Muscle Firing Patterns/Endurance

- Glute Max & Hamstring co-contraction

- Glute Max & Med co-contraction (Bilateral)

- Glute Max & Med co-contraction (Unilateral)
Chapter 3

Altered Biomechanics

- Postural syndromes will lead to altered biomechanics
- Acute & chronic injuries will lead to altered biomechanics
- Stiff hips will lead to altered biomechanics
- Weak or inhibited glutes will lead to altered biomechanics
- Stiff ankle region will lead to altered biomechanics
- Functional or structural LLLI (lower limb length inequality) will lead to altered biomechanics
Musculoskeletal Conditions

- Lumbar compression syndrome
- Hyper lordotic lumbar spine
- Pelvic instability during gait

These musculoskeletal conditions can also be classified as postural syndromes.
Musculoskeletal Conditions

- IVD pathology leading to central LBP & radiating pain/ altered sensation

- Facet joint pathology leading to unilateral LBP & radiating pain & altered sensation at times

- Lumbar central stenosis

Musculoskeletal Conditions

- Lumbar unilateral stenosis

- Lumbar compression leading to vertebral endplate damage resulting in asymmetry of the endplate region

- Segmental instability in the neutral zone

Musculoskeletal Conditions

- Piriformis impingement of the sciatic nerve

- Adverse neural tension of the sciatic nerve

- Gluteal complex dysfunction
Musculoskeletal Conditions

- Glute medius tendinopathy
- Glute min tendinopathy
- Anterior hip impingement

Musculoskeletal Conditions

- Inter clicking hip syndrome
- Intra clicking hip syndrome
- External clicking hip syndrome

Chapter 5

Assessment & Treatment
**Assessment**

Lx Spine Compression Syndrome

- Posture assessment of the Lx spine (lateral)
- Posture assessment of the Lx spine (anterior)
- Lx range of motion testing

**Assessment**

- Quadrant
- SLR
- Slump

**Assessment**

- Further neurological testing (if required)
- Hip range of motion testing
- Modified Thomas Test
Assessment

- Glute max & hamstring co-contraction
- Supine bridging focusing on muscle firing patterns
- Single leg stance

Assessment

- DD’s
  - IVD
- SNR
- Facet
- Muscular
- Altered biomech or a combination

Treatment

Lx Spine Compression Syndrome
- MFR to psoas major
- PRT to psoas major
- Vacuum cupping to the RF, VL & ITB
**Treatment**

**Lx Spine Compression Syndrome**
- Vacuum cupping to the ES
- Dry needling ES, QL & multifidus
- Glute max & hamstring co-contraction exercise

**Treatment**

**Lx Spine Compression Syndrome**
- Mobilise Lx facet joints
- Mobilise Tx facet joints & CTJ
- Supine bridging focusing on Gmax & Gmed co-contraction

**Treatment**

**Lx Spine Compression Syndrome**
- Corrective stretching of specific muscle regions of the hip that are short & tight
- Lx rolling with knees flexed
Assessment

Hypo Mobile Hips

• Passive hip flexion focusing on R1 & P1

• Passive hip int/ext rotation focusing on R1/P1

• Passive hip extension focusing on R1/P1

Assessment

Hypo Mobile Hips

• Passive hip extension incorporating RF (passive knee flex) focusing on R1/P1

• Passive hip abduction

• Mod Thomas Test & Obers Test

Assessment

Hypo Mobile Hips

• Slump Test

• Glute max & hamstring co – contraction

• Supine bridging focusing on muscle firing patterns
Treatment

Hypo Mobile Hips

- MFR the specific regions of the hip region that displayed positive signs on passive testing & special testing

- Dry needle the piriformis, & associated external rotators, glute med & glute max

Treatment

Hypo Mobile Hips

- Vacuum cupping to the ES

- Vacuum cupping to the hamstring

- Mobilise Lx facet joints

Treatment

Hypo Mobile Hips

- Glute max & hamstring co – contraction exercise

- Supine bridging focusing on Gmax & Gmed co – contraction

- Corrective stretching of specific muscle regions of the hip that are short & tight
Summary

- The lumbar spine is sensitive to compression & shear forces
- Hypo mobile hips play a significant role in lower back conditions
- Ideal lumbopelvic stability is highly dependant on segmental stability, abdominal endurance, good hip range of movement, & co-contractions of the gluteal complex

References


Chapter 6

Quiz T & F
Quiz Questions – T/F

1. Altered biomechanics of the lumbar spine can lead to a number of musculoskeletal conditions T/F
2. Poor muscle firing patterns lead to altered biomechanics T/F
3. Lumbopelvic stability is maintained through the abdominal muscles & gluteal complex co-contracting T/F
4. Hypomobile hips play a significant role in lumbopelvic dysfunction T/F

Quiz Questions – T/F

5. A weak glute max leads to overactivity of the ES resulting in increased compression T/F
6. The hip region should always be assessed with any lower back complaint T/F
7. Corrective exercises play only a minor role in the management of lower back pain T/F
8. Glute max & hamstring co-contraction plays a significant role in the mgt of LBP T/F

Quiz Questions – T/F

9. The hip external rotators are also known as the super 6 muscles of the hip T/F
10. Neutral Lx spine increases the spine’s ability to absorb up to 25%-45% more compression & shearing forces T/F