# Degenerative Disc Disease

Assessment

Postural assessment

Degenerative Disc Disease – lateral view

- a head forward posture
- hyperlordosis (anterior tilt) or flatback (posterior tilt)
- in a seated position the client may slouch placing the lumbar spine in flexion
- muscle atrophy may be present

Herniation- posterior view

- neck may be rotated and side bent
- a leg length discrepancy or an acute scoliosis may be observed
- lateral view- a decrease in the normal lordosis may be noted

Palpation

- degenerative disc disease- may reveal point tenderness, trigger points, fascial restriction as well as fibrosed and hypertonic muscles crossing the affected level
- There may be muscle atrophy
- Acute disc herniation- tenderness, heat, spasm and active trigger points are likely present in muscles that cross affected areas.

Testing

Degenerative Disc Disease

- AF ROM and PR ROM of with the cervical or lumbar spine is reduced
- AR isometric testing may reveal weakness in affected muscles depending on the stage

Acute Herniation

- AF ROM and PR ROM in either cervical or lumbar spine reveal ranges limited by pain
- Active free flexion in the lumbar spine may have a deviation to one side
  If movement is away from the painful side vertebral joint derangement may be present
  If movement is towards the painful side an entrapped or adhered nerve root may be present.
- With posterior or posteriolateral herniations that are contained by the annular fibers movements can reduce the symptoms. Flexion is limited and symptoms peripheralize with movement… extension is alos limited and symptoms centralize with movement.
- With a complete annular rupture and sequestered nucleus movement cannot relieve the symptoms

Special Tests

- Nerve root impingement- not considered true signs of lumbar compression
- Upper limb tension test- cervical disk herniation
- Spurlings – cervical disk herniation
- Valsalvas – cervical disc herniation
- Deep tendon reflex test – cervical disc herniation
- Specific active resisted and sensory tests are performed to isolate the lesion
  - C5 lesions- shoulder abduction weak – sensory changes lateral forearm
  - C6 lesions- elbow flexion or wrist extension weak – thumb or index finger
  - C7 lesions- elbow extension or wrist flexion is weak – middle, index or ring finger
  - C8 lesions – thumb abduction is weak – little and ring fingers
  - T1 lesions – finger adduction is weak – medial forearm

Lumbar disc herniation may give positive results with

- slump
- Valsalvas
- Kemps
- Kernigs
- Straight leg raise
- Deep tendon reflex test
  - L4 lesion – ankle dorsiflexion or heel walking is weak – medial aspect of ankle
  - L5 lesion – big toe extension is weak – dorsum of the foot
  - S1 lesion – plantarflexion or toe walking is weak – lateral aspect of the ankle

Differentiating sources of neck and arm pain-

- facet joint irritation - Kemps
- thoracic outlet syndrome – Adson's, Travell's, costoclavicular, Eden's and Wright's hyperabduction tests
- scalene trigger points – positive scalene cramp and scalene relief tests
- carpal tunnel – Phalene's test
- tendinitis – of rotator cuff – positive active resisted test

Differentiating sources of low back and leg pain-

- facet joint irritation – kemp's test
- sacroiliac joint mobility – motion palpation
- sacroiliac joint dysfunction – sacroiliac joint gapping, sacroiliac joint squish, Gaenslen's and Faber
- hip pathologies referring pain – hip quadrant and Faber tests

Spondylolisthesis –

- place one hand on the sacrum and the other on the abdomen and gently compress. Pain can be relieved

Viceral- bone cancer may cause bilateral back pain that is unrelieved by positional Changes and is worse at night.

General treatment

Degenerative Disc Disease

- pre-treatment heat to affected areas and areas of fascial restriction
- May be prone, sidelying or supine

Degenerative Disc Disease treatment of the Cervical Spine

- if the client has a postural dysfunction such as head forward posture treatment begins on the anterior thorax.
- Prone position
- Fascial techniques on pectorals, intercostals and scalenes
- Efflerage and kneading on pectorals, intercostals, scalenes and sternocleidomastiod.
- Trigger points that refer to the painful areas are trteated
- PIR to stretch short tight scalenes
- Joint play for hypomobile vertebrae
- GTO, fascial techniques and pettrisage are used on suboccipitals and posterior cervicals
- Gentle long axis traction
- Passive stretching
- Turn prone
- Petrissage on shoulder girdle and thoracic erector spinae
- Brisk stimulating work on scapular retractors

Degenerative Disk Disease treatment of lumbar spine

- if the client has postural dysfunction such as hyperlordosis
- Supine
- Skin rolling and crossed hand fascial spreading are used over the rectus femoris and ITB
- Swedish techniques are indicated over the short hip flexors
- Trigger points in iliopsoas and Tensor Fascia lata
- Joint play for hypomobile sacroiliac joint
- Prone
- Fascial techniques over lumbar erector spinae
- General Swedish work over erectors, QL and gluteals
- Treat trigger points in erectors, GL and gluteals
- Joint play on hypomobile vertebrae
- Long axis traction to the lumbar vertebrae
- Stretch shortened hip flexors using passive strength or PIR

- If the client has flatback or posterior pelvic tilt
- Focus on lengthening the shortened hamstrings
- Fascial then Swedish techniques on hamstrings
- PIR on hamstrings
- Stimulating Swedish techniques are used on lengthened hip flexors and lumbar extensors
- passive hip extension and submaximal isometric contraction of the quadriceps is used. The supine client lies close to the edge of the table.

The affected leg moves off the table into extension. The other leg flexes at the hip and knee. Stabilize the unaffected asis place the other hand on the affected thigh. Client submaximally isometrically performs a straight leg raise pushing into the therapists hand. Hold 10 seconds, this helps put the pelvis into an anterior tilt.

- The prone lies on the table without a pillow under the abdomen. Therapist puts their leg on the table with hip and knee flexed tibia flat on the table. The client places his leg on the therapists leg which acts as a wedge to put the clients leg into extension. The clients asis is carefully grasped to act as a lever The client pushes into the therapists thigh for 10 seconds. This puts the pelvis into an anterior tilt

General Treatment for Acute Disc Herniation

- treatment is a half hour
- use deep diaphragmatic breathing
- pretreatment hydrotherapy is ice to reduce spasm and pain
- may be prone sidelying or supine

- with a lumbar posterior or posteriolateral protrusion the supine position is most comfortable.
- cervical posteriolateral protrusion a small towel roll under the neck while the client is supine
- prone position has no pillow under the abdomen
- sidelying position pillows are placed under the head so the cervical spine is in alignment. A towel roll is placed at the curve of the waist to stabolize the pelvis and a pillow is placed between the knees.
- If the client need to change position they will be most comfortable if the spine does not twist
- anterior protrusion in the supine position the lumbar spine is flexed with a pillow under the knees and the cervical spine is flexed with a pillow under the head.
- In prone the lumbar spine uses an abdominal pillow for flexion and pillowing under the thorax mailtains cervical flexion
- gentle long axis traction should recuce symptoms
- massage is performed to reduce edema, spasm and pain in muscles that cross the affected area
- Effleurage, lymphatic drainage, kneading and stroking are performed
- Isometric agonistic contraction may also reduce spasm
- Gentle fascial techniques may be used on shortened fascia
- Trigger Points that refer into the affected areas are treated
- As the condition becomes subacute and chronic the treatment can become more vigorous.
- treat hypomoile joint
- fascial restrictions and hypertonicity are treated with fascial and Swedish techniques.