# Cervical Spine Assessment & Management: A practical approach

# **Prevalence of Cervical spine related conditions:**

- 26% of the population have neck pain in any year
- 48% of population have neck pain in their lifetime

Acute Neck pain can resolve initially, but a full resolution is less common (it tends to bother people more often than LBP)

#### Normal anatomy and movement

- 7 vertebrates
- Upper and Lower Cx spine move differently
- Rotation: Upper Cx spine (C1-C2) accounts for approx. 50%\*\*\*
- Flex/Ext: initiated in lower Cx spine & combination of 'translation & rotation'
- Mid-lower Cx spine: Rotation & LF is coupled\*\*\*\*
- Retraction/Protraction: Upper & Lower Cx spine move in 'opposite' direction\*\*\*
- During 'normal' Cx extension: 'very little extension' occurs at lower Cx spine

# Physiological Movement v/s Anatomical movements

Osteopathic PPIVMS

Bigger picture: Mobility at the expense of Strength/stability (most mobile part of the spine)

#### **Common dysfunctions/conditions:**

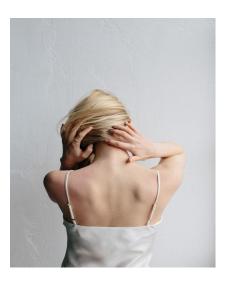
- Radiculopathy <10%</li>
- Serious pathology <2% (cancer, cord compression, #, infections, etc)</li>
- Non-specific neck pain >90%
  - o Facet issues
  - o Postural issues
  - Disc injuries
  - Wry neck/Soft tissue (muscles/nerves)

# Common related conditions:

- Headaches
- Radicular syndrome
- UL weakness >>> UL conditions (tennis elbow, golfer's elbow, CTS, etc.)
- Shoulder impingement/bursitis/tear
- Thoracic conditions: kyphosis, scoliosis
- TMJ dysfunctions

#### Management principles of Active or passive mobilisation

- → Lateral to medial
- → Upper/lower to central
- → Superficial to deeper
- → PA directed outwards are more tolerable
- → Opening techniques/exercises are usually more comfortable and more popular
- → Commence with Extension (self, pt o/p, PT o/p, PT mobi or manipulation)



- → Progress if Rotation then LF (self, pt o/p, PT o/p, PT mobi or manipulation)
- → Lateral flexion is usually added later (preferably 'self techniques'..!)
- → Flexion can be added at any stage gradually (usually later with preferably 'self techniques'..!)

Precautions: osteoporosis, VBI, Dizziness, serious pathology, etc...pattern recognition..!



### Active/Passive mobilisation techniques:

- ★ Retraction (Sitting, Supine, Prone)
- ★ Rotational (Sitting, Supine, Prone)
- ★ Osteo PPIVMS

# **Active Mobilisation through exercises:**

- Cx retraction
- Cx retraction + o/p

Shoulder RollPectoralis stretch

➤ Bow-arrow
 ➤ Cat-camel
 ➤ Rabbit (ES stretch)
 https://youtu.be/bn qn4KRfBQ
 https://youtu.be/\_M7vML6VWUk
 https://youtu.be/hkEVbMcfFmk

## Consideration for strengthening for Sustainable & Long term results..!

- → Incorporate shoulder, upper thoracic segments in/out of exercises
- → Full body movement
- → Functional movement/exercises

## Thank You...any Questions...?

#### References:

- Cervical and Thoracic Spine. Park B: The Mckenzie Institute: Centre for Postgraduate Study in Mechanical Diagnosis and Therapy (2021)
- Polestar Pilates 2014, Polestar Pilates: Professional Education, Comprehensive Levels 1-3, Comprehensive Levels 4-6, Teaching to heal through movement.
- Low Back Pain Prevalence and Related Workplace Psychosocial Risk Factors: A Study Using Data From the 2010 National Health Interview Survey