SPONDYLOSIS

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Learning objectives

At the end of the lecture, the students will be able to____

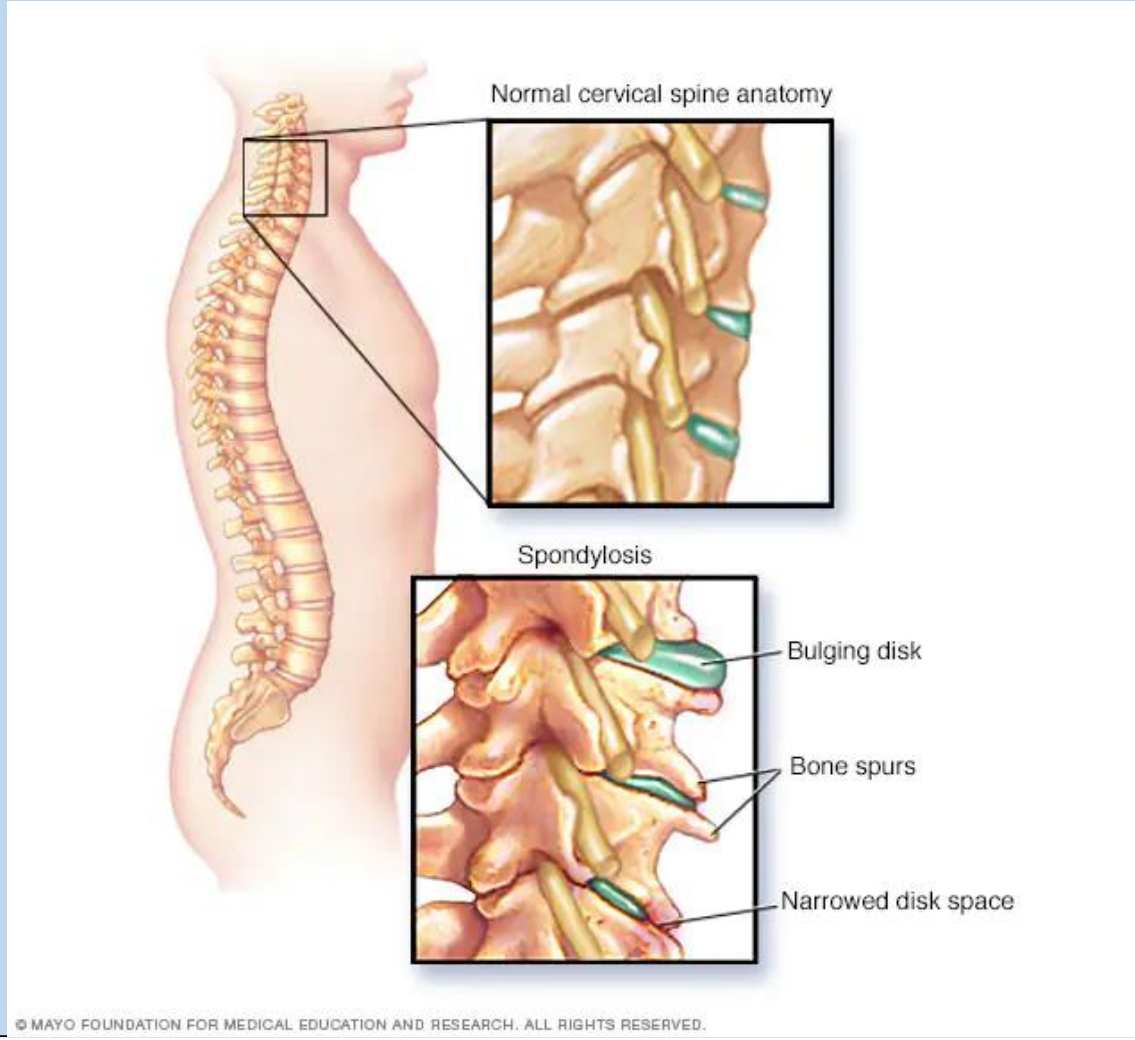
- Define cervical spondylosis
- State the etiology of cervical spondylosis
- State the clinical manifestations of cervical spondylosis
- Explain the medical as well as physiotherapy treatment protocols of cervical spondylosis
- Give appropriate exercises and advice to a patient with cervical spondylosis

Contents

- What is spondylosis
- Aetiology
- Pathology
- Clinical features
- Physiotherapy treatment
- Advices to the patient

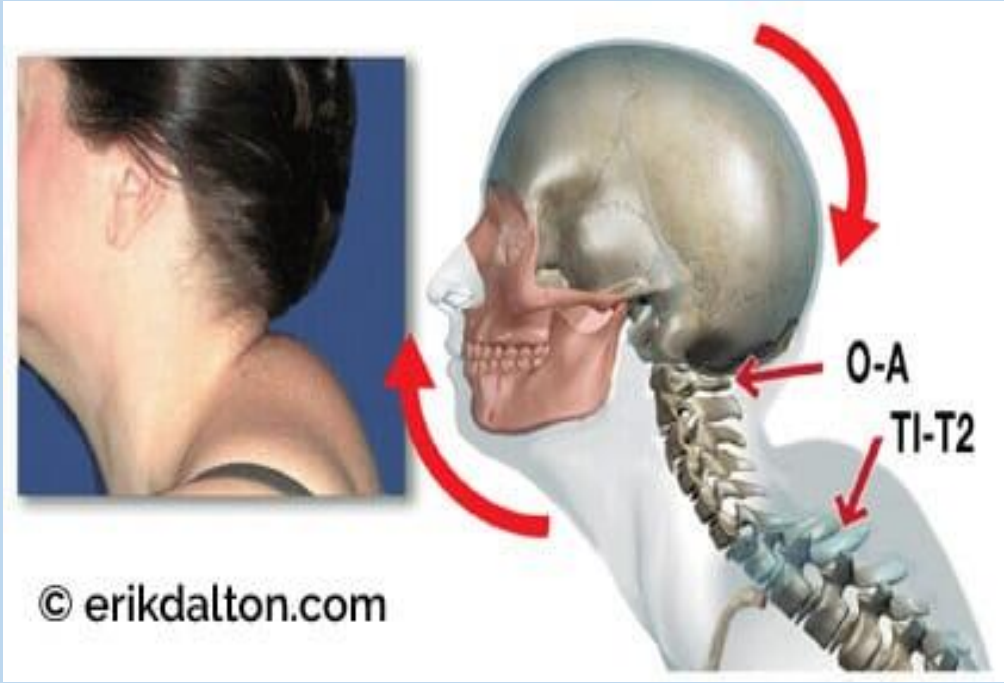
What is Spondylosis?

- Spondylosis is a condition in which there are degenerative changes in the intervertebral joints between the bodies and the discs.



Aetiology

- The age range is most common around 45.
- Women are more affected than men .



- Predisposing factors are-
  - ✓ Poor posture associated with anxiety, habit
  - ✓ Occupational stress e.g. typists at poorly positioned desks
  - ✓ Body type- necks that are thickset with a ‘dowager’s hump’ (Kyphosis) and long backs

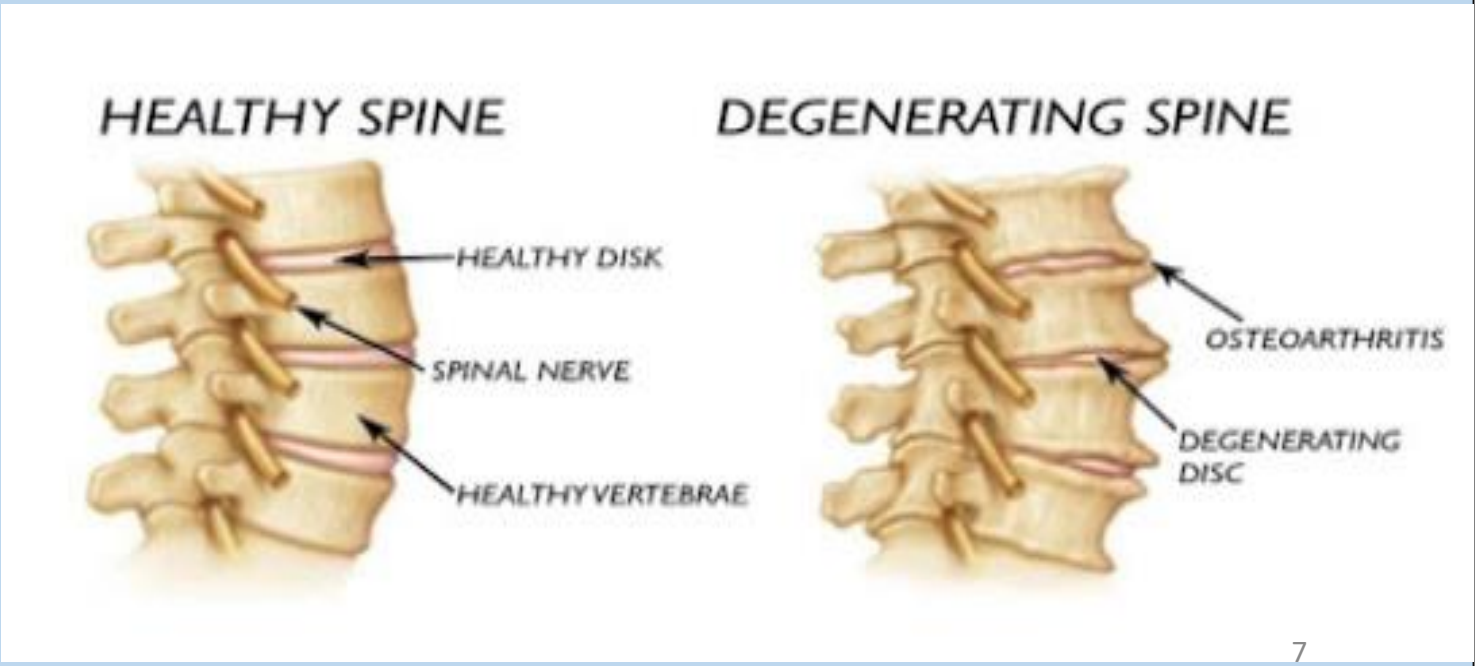
Commonly Affected Sites

- **Cervical _** C4 to T1
- **Lumbar _** L2 to L4
- **Thoracic _** T4,5,6

Pathology

- **Intervertebral discs**

  - ❑ Annulus fibrosis becomes coarser and cracks
  - ❑ Nucleus pulposus loses fluid and becomes more fibrous
  - ❑ The disc loses height



Pathology

- **Vertebral bodies**
  - ❑ Lipping of the vertebral bodies occurs
- **Ligaments**
  - ❑ The intervertebral ligaments may become thickened
- **Apophyseal joints**
  - ❑ Osteophytes forms at the margins of the articular surfaces and these together with the capsular thickening can cause pressure on the nerve root and reduce the lumen of the intervertebral foramen

Cervical Spondylosis



Clinical Features

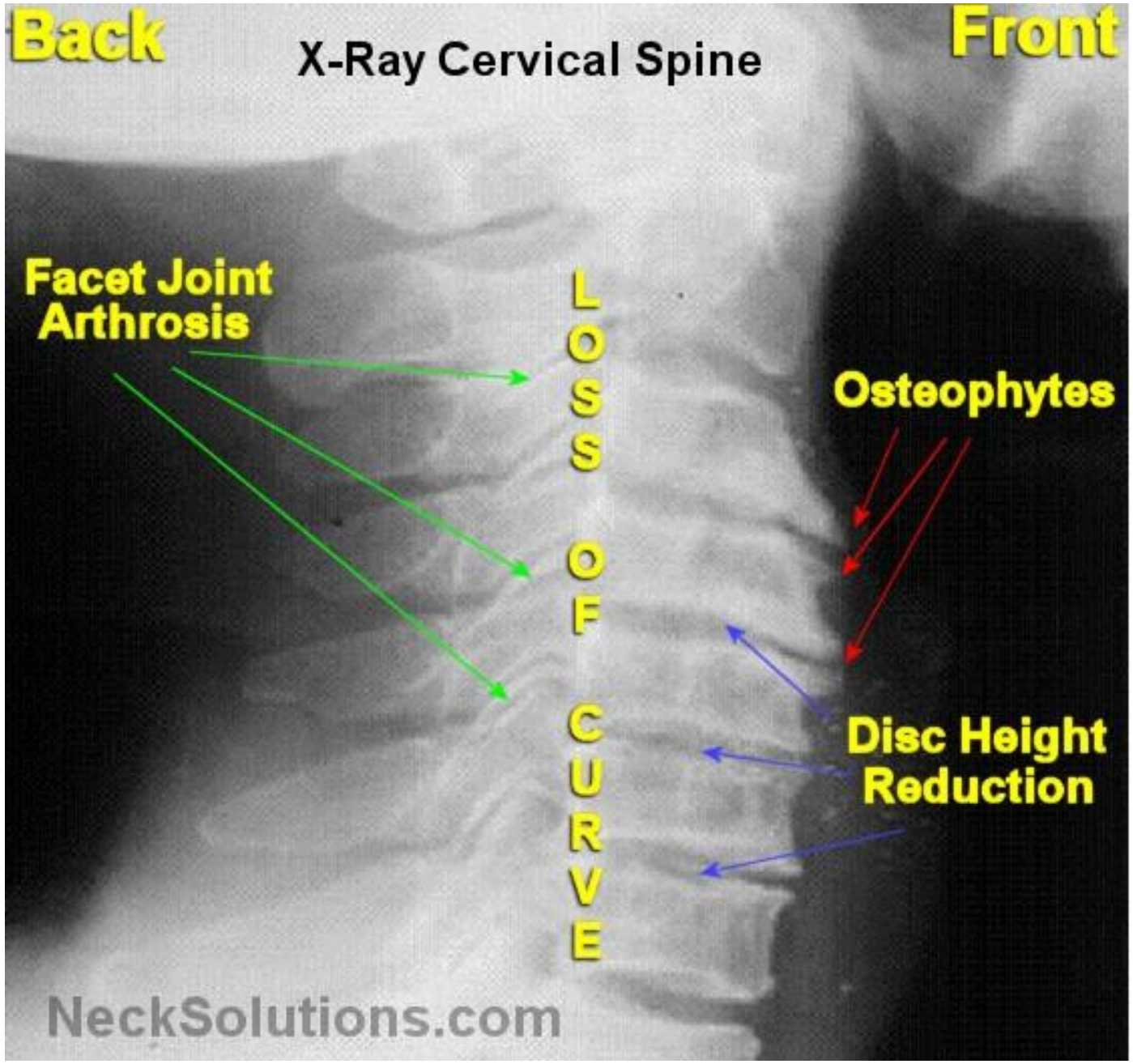
- **Pain**
  - ❑ Headaches due to upper cervical pathology
  - ❑ Neck- ache due to mid- cervical pathology
  - ❑ Shoulder girdle, shoulder and arm pain due to pathology from C4 to T2

Clinical Features (Cont;)

- **Muscle weakness**
  - Neck postural muscles are weak i.e. the upper cervical spine flexors, lower cervical spine extensors and the side flexors
  - If there is pressure on a nerve root, there may be weakness in the muscles (myotome) supplied by that root

Clinical Features (Cont;)

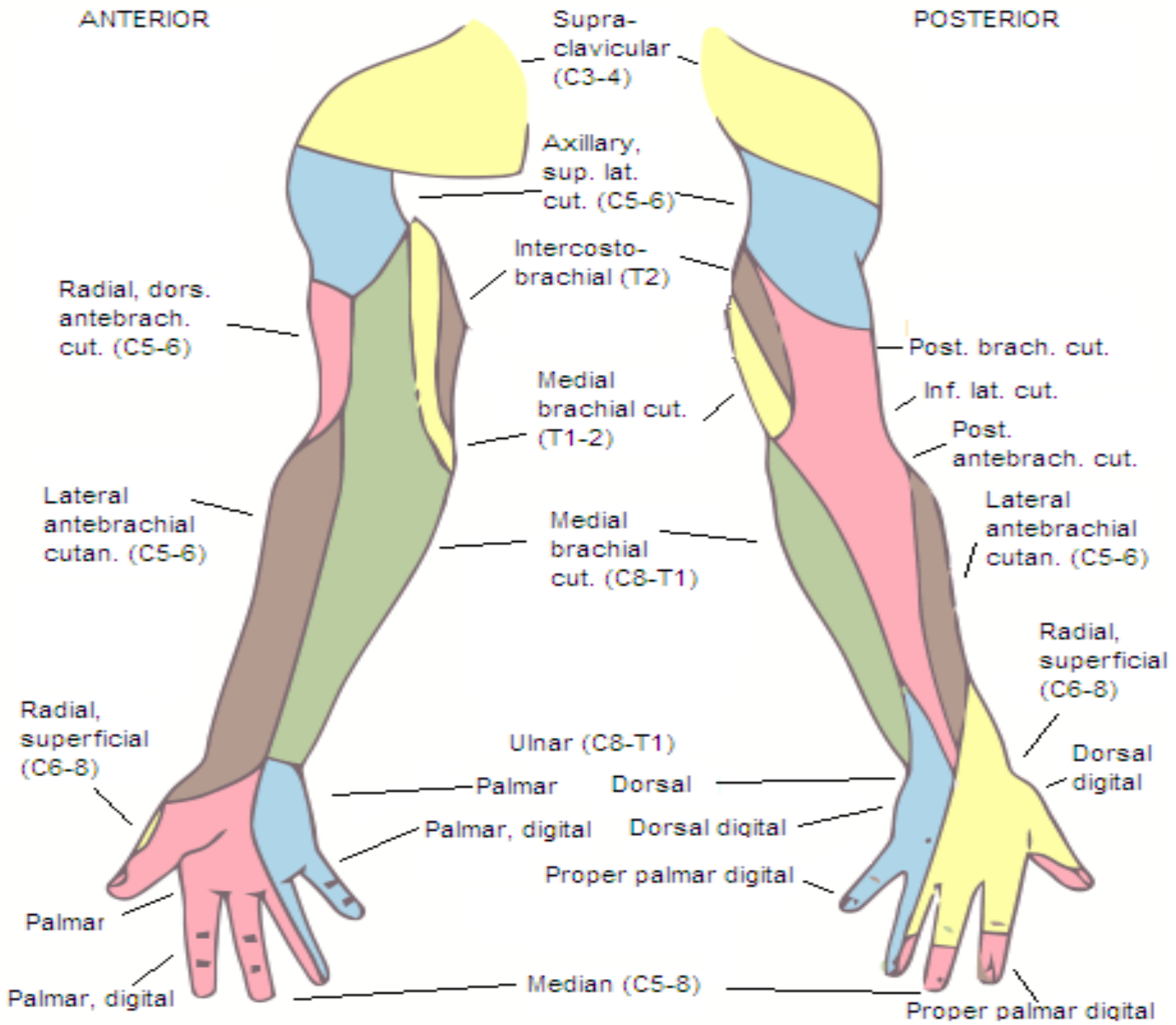
- **Radiograph**
  - ❑ Lipping of the vertebral bodies, osteophytes at the margins the apophyseal joints.
  - ❑ Diminished space between the vertebral bodies can be seen


Back
X-Ray Cervical Spine
Front
Facet Joint Arthrosis
LOSS OF CURVE
Osteophytes
Disc Height Reduction
NeckSolutions.com

Clinical Features (Cont;)

- **Referred pain**
  - ❑ There may be no pain perceived in the neck but there is pain in the arm
  - ❑ Pain down to the elbow- C5.
  - ❑ Pain to thumb and index finger – C6
  - ❑ Pain on middle three fingers and forearm- C7
  - ❑ Pain on inside of forearm, little finger and chest- C8/T1

Referred Pain due to cervical spondylosis



Clinical Features (Cont;)

- **Nature of the pain**
  - ❑ The pain is dull aching pain superimposed by sharp stabbing pain
  - ❑ From time to time the pain is like cramp- type throbbing

Clinical Features (Cont;)

- **Paraesthesia**
  - ❑ Pins and needles or altered sensation may be present in the area supplied by and impinged nerve root (dermatone)

Clinical Features (Cont;)

- **Muscle spasm**
  - There is always increased tone in the upper fibers of the trapezius and also in the scalene muscles.

Clinical Features (Cont;)

- **Limitation of movement**
  - ❑ Neck movements are all limited often bilaterally but an acute episode of pain one side is more affected than the other.
  - ❑ Upper cervical spine flexion is very limited together with lower cervical spine extension.
  - ❑ Muscle spasm and muscle tightness

Physiotherapy Treatment

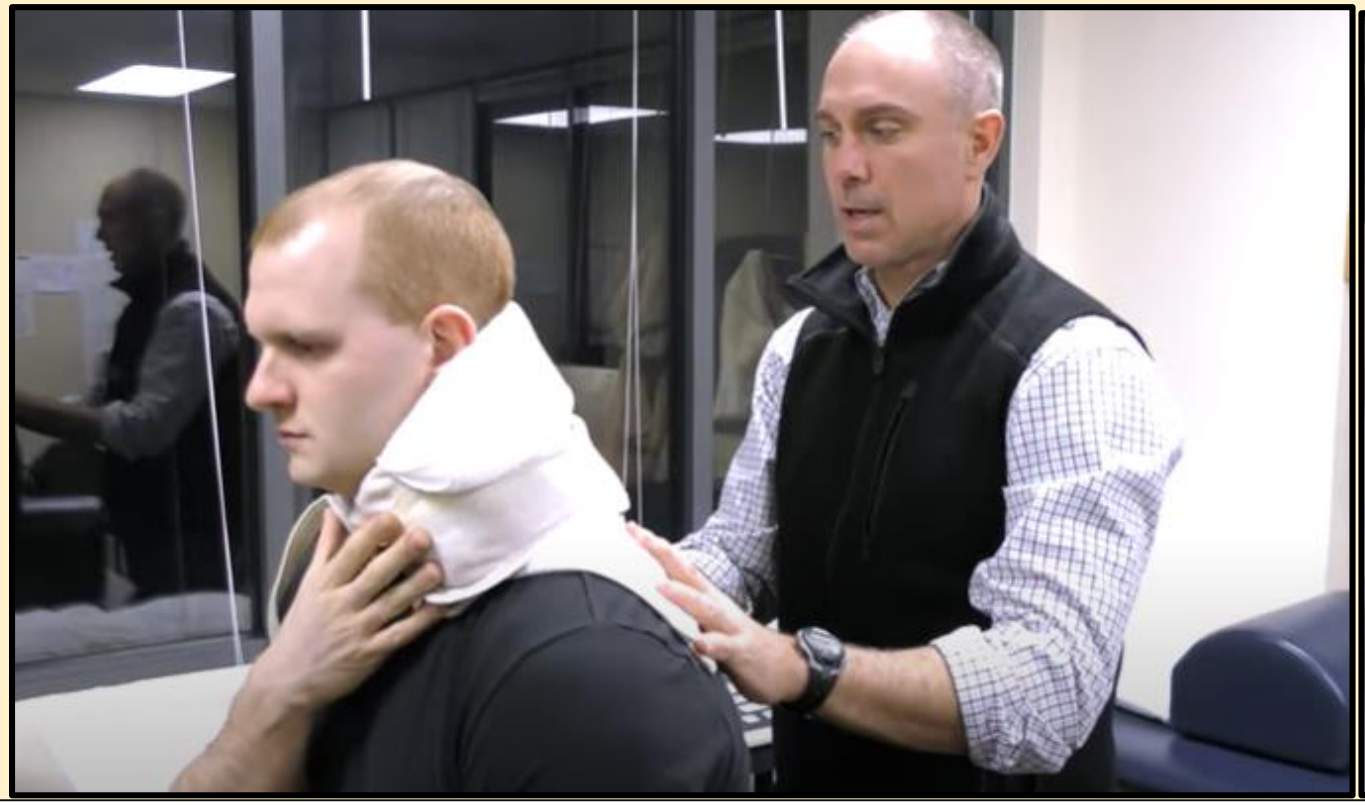
- **Aim**

1. Relief of pain
2. Restoration of movement
3. Strengthening of muscles
4. Education of posture
5. Analysis of precipitating factors to reduce recurrence of the patient's problems

Physiotherapy Treatment (Cont;)

- **Heat**

  - ✓ A heat pad or hot water bottle for 10 – 20 minutes once or twice a day applied with the patient in lying or half-lying so that the neck is supported can reduce muscle spasm





Physiotherapy Treatment (Cont;)

- **Relaxation**

  - ✓ Relaxation is an essential component of the total treatment because tension in the neck and shoulder girdle muscles is nearly always present in a CS patient

The Mitchell Method of Physiological Relaxation

- The 'Mitchell Method' of physiological relaxation - often known as the 'Reciprocal Method of Relaxation'- is the name given to a technique of relaxing the whole, or parts of your body. Once learned and practised it can be used easily and anywhere to relax and reduce the muscle tension produced by stress.

Physiotherapy Treatment (Cont;)

- **Relaxation**

Technique

- General Relaxation
  - Support
  - Comfort
  - Restful Atmosphere
  - Additional or Special methods of promoting Relaxation
- Local Relaxation

Physiotherapy Treatment (Cont;)

- **Relaxation**



Supine lying position

Physiotherapy Treatment (Cont;)

- **Relaxation**



Side lying position

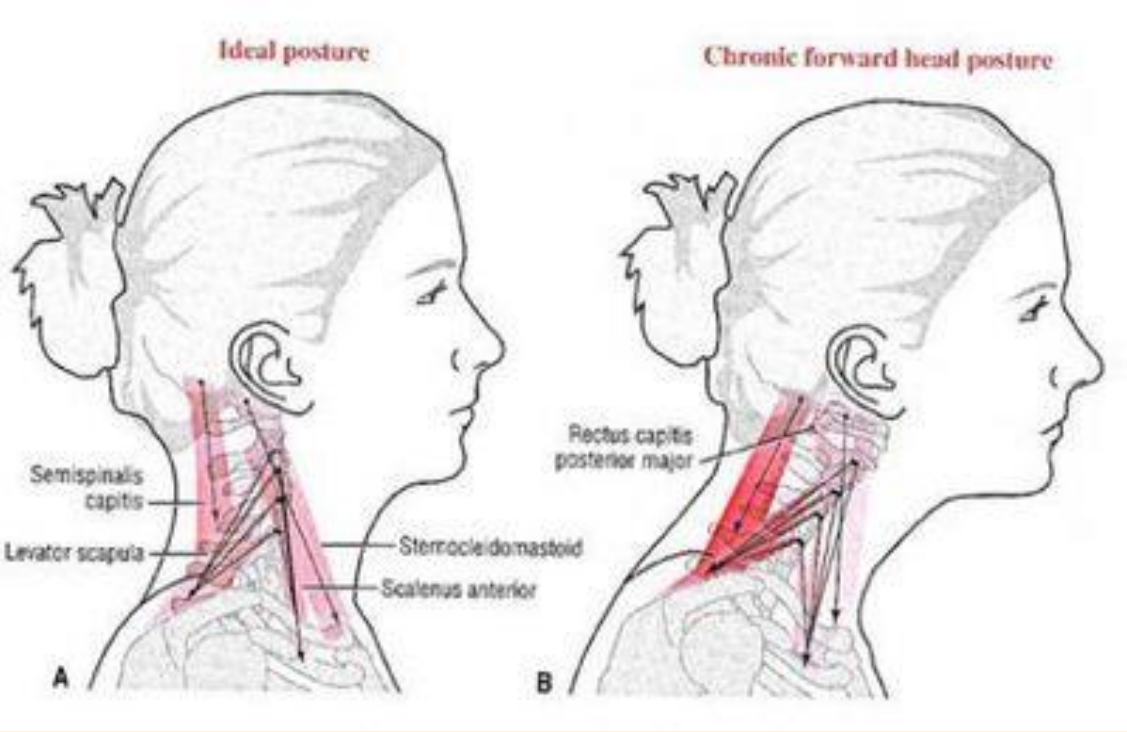


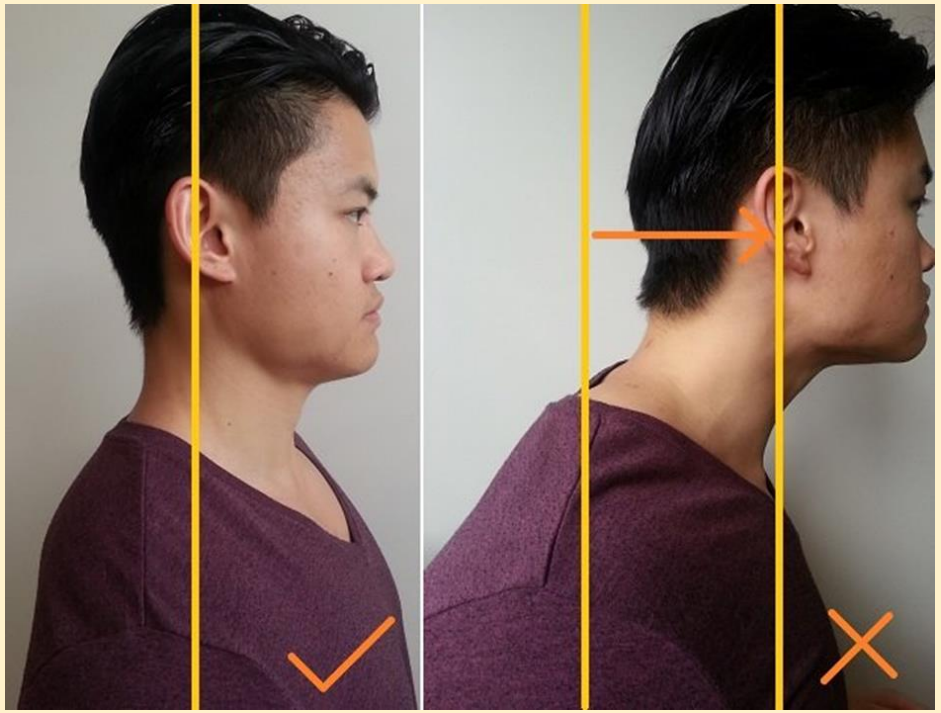
Sitting position

Physiotherapy Treatment (Cont;)

- **Posture Education**

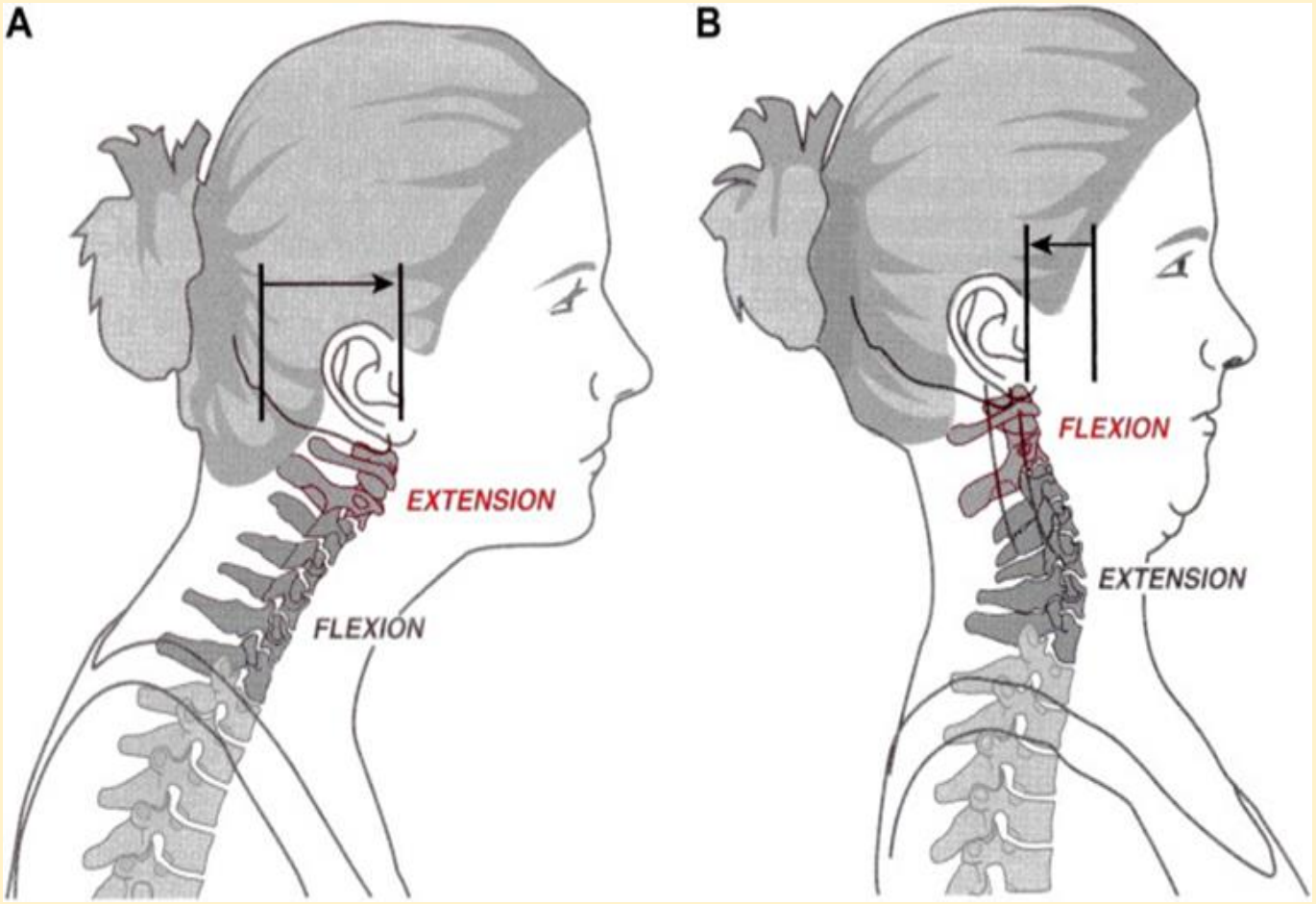
  - ✓ **Head thrust forwards (Stressing the C5/6/7 level and resulting in shortening of the upper cervical spine extensors)**

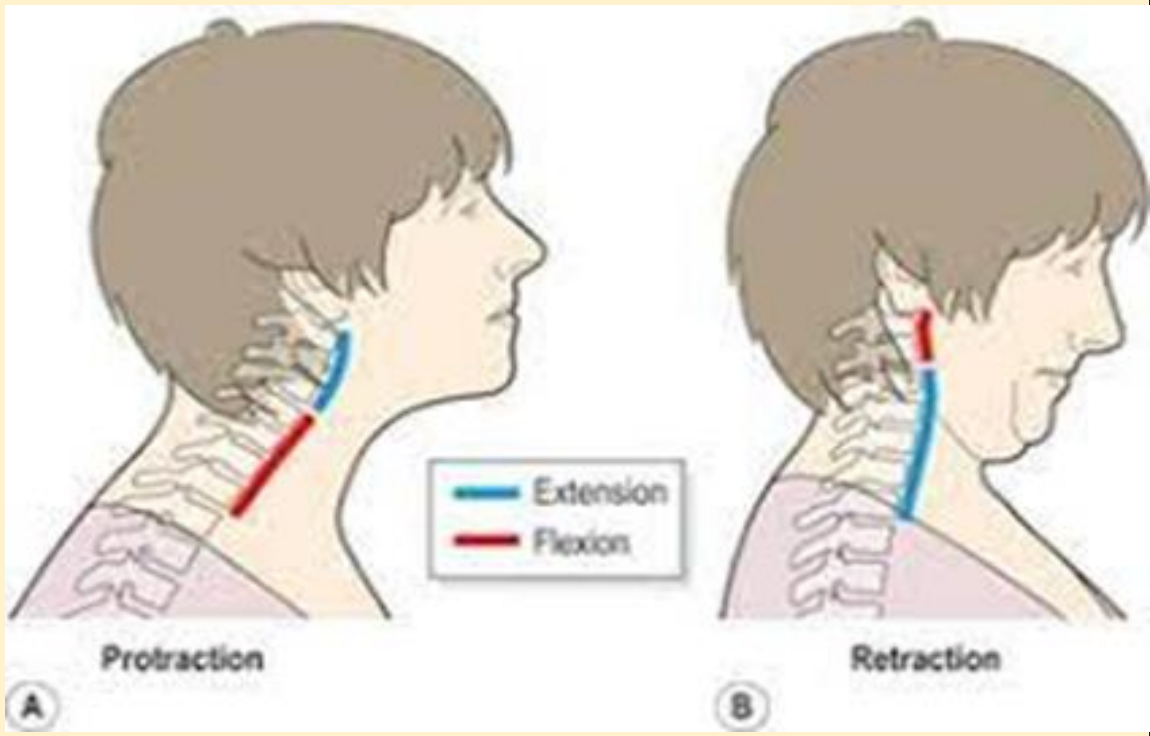




Physiotherapy Treatment (Cont;)

- **Posture Education**





Physiotherapy Treatment (Cont;)

- **Posture Education**

  - ✓ **Shoulders held up and forwards (causing excess tension in the upper fibres of the trapezius muscles)**
  - ✓ **Thoracic spine flexed and rounded (causing with the shoulder position, shortening of the pectorals and lengthening of the shoulder retractors)**
  - ✓ **Lumbar spine flexed, pelvis tilted backwards, hip flexed, knee flexed, and ankle dorsiflexed, feet pronated**

Physiotherapy Treatment (Cont;)

- **Collar**

During an acute pain, a firm collar will help to steady the neck and relieve pain especially travelling or work.

A soft collar is helpful at night to prevent awkward positions of the neck during sleep





Physiotherapy Treatment (Cont;)

- **Traction**

  - ✓ **Oscillatory traction is considered to be mobilizing, therefore is appropriate where the neck is generally stiff.**
  - ✓ **Continuous traction is used to relieve nerve root pressure but if the target segment is stiff then it must be mobilized first otherwise the traction force is distributed between the other mobile segments**
  - ✓ **The paravertebral muscles are relaxed and lengthened (e.g. by heat, hold- relax, passive stretching) prior to the application of traction**

Physiotherapy Treatment (Cont;)

- **Traction**



Physiotherapy Treatment (Cont;)

- **Advice**

- The patient who sleeps supine should use one or two pillows under the head

- During the day, every half hour or so, the neck should be stretched and moved through full range especially in sitting, reading, writing, car driving and similar activites

References

- Thomson, A., Skinner, A. and Piercy, J. (1991)Degenerative arthropathies. *In Tidy's Physiotherapy*, ed. Thomson, A., Skinner, A. and Piercy, J; p.113- 119. 12th ed. Reed Educational and Professional Publishing Ltd in Great Britain.


THANK YOU