Rheumatology vs orthopaedics

Rheumatology etymology

- Derives from Greek language
- Rheuma - to flow from Greek
- Ology – science
- Deals with diseases affecting joints, muscles and the connective tissue
- More 200 diseases

Orthopaedics etymology

- Derives from Greek language
- Ortho-straight
- Paidos- child
- Dealing with the prevention or correction of injuries or disorders of the skeletal system and associated muscles, joints and ligaments.

Rheumatology vs orthopaedics

- Rheumatology diseases:

Inflammatory:

  - Arthritis
  - Bursitis
  - Myositis

Degenerative:

  - Arthrosis
  - Perthes syndrome
  - Schlatter syndrome

Others:

  - Myalgia
  - Neuralgia
  - Arthralgia

- Orthopaedics diseases

Infant and congenital:

  - pes equinovarus
  - scoliosis
  - pes planus

Adult diseases:

  - arthritis, arthrosis
  - scoliosis
  - femur head necrosis
  - coxarthrosis
  - gonarthrosis
  - Meniscus problems

Examination:

- Anamnesis
- Inspection
- Imaging test (CT, MRI, X-ray)
- Laboratory



Client history

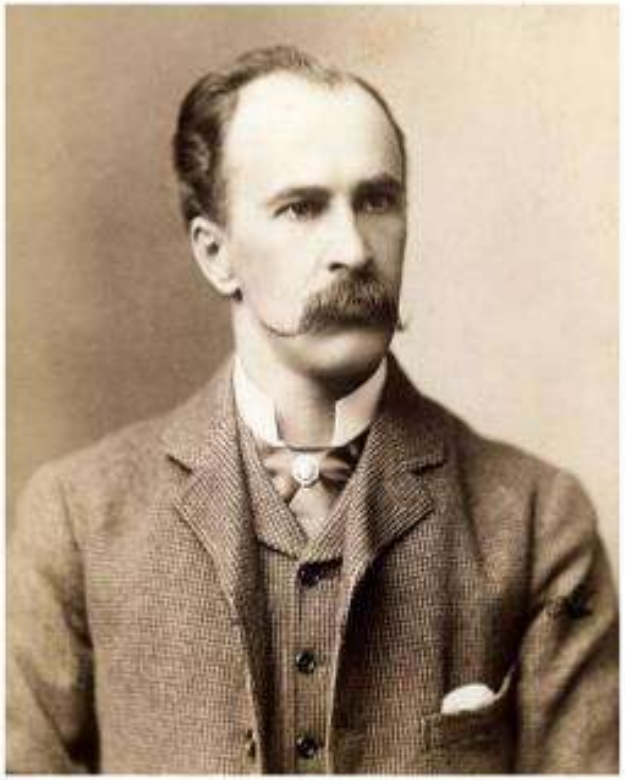
- Personal details
- Present signs & symptoms
  - Pain
  - How strong the pain is
  - What the pain is like
  - How long the pain is there
- Medical history
- Occupation
- Daily function
- Medication



- Inspection:
  - Swelling
  - Atrophy
  - Deformities
  - Scars, skin changes
- Palpation:
  - Tenderness
  - Temperature
  - Crepitus
  - Atony
- ROM
  - Active and passive
- Power assessment
  - Isometric test



Father of Modern Medicine



- **Sir William Osler, MD**
  1849-1919

"Listen to the patient, he is telling you the diagnosis."

Rheumatology treatment

1. **Medication**

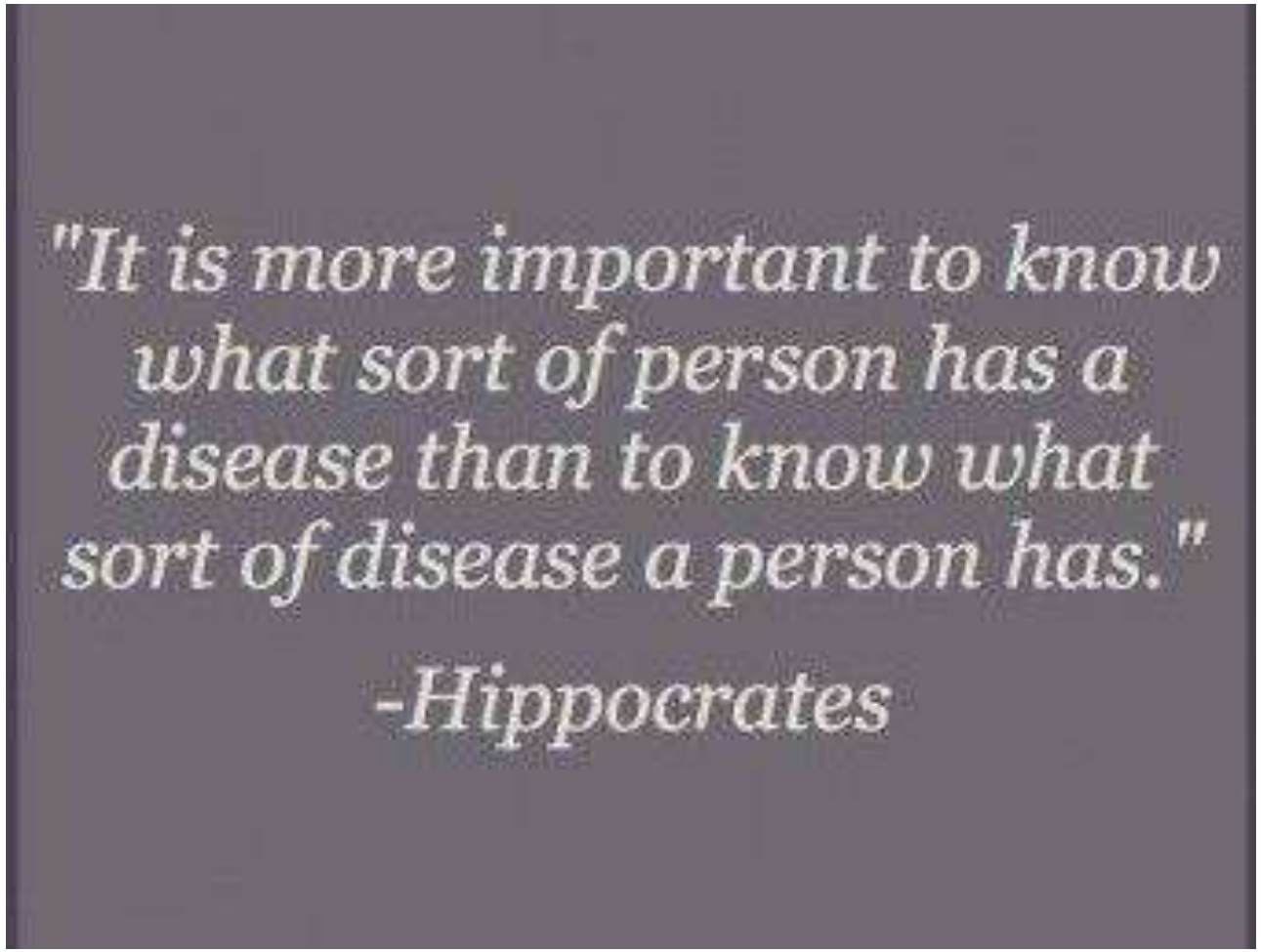
   - Painkiller
   - Anti-inflammatory
     - Steroid
     - NSAID

2. Therapy:

Physiotherapy

Physical therapy

- Electrotherapy (TENS machine)
- Thermotherapy, hydrotherapy
- Balneotherapy
- Climatotherapy
- Inhalation therapy
- Hands-on therapy


"It is more important to know what sort of person has a disease than to know what sort of disease a person has."
-Hippocrates

Spine disorders 1.

- Cervical degenerative disease
- Bechterew’s disease
- Scheuermann’s disease
- Spina bifida



Cervical degenerative disease

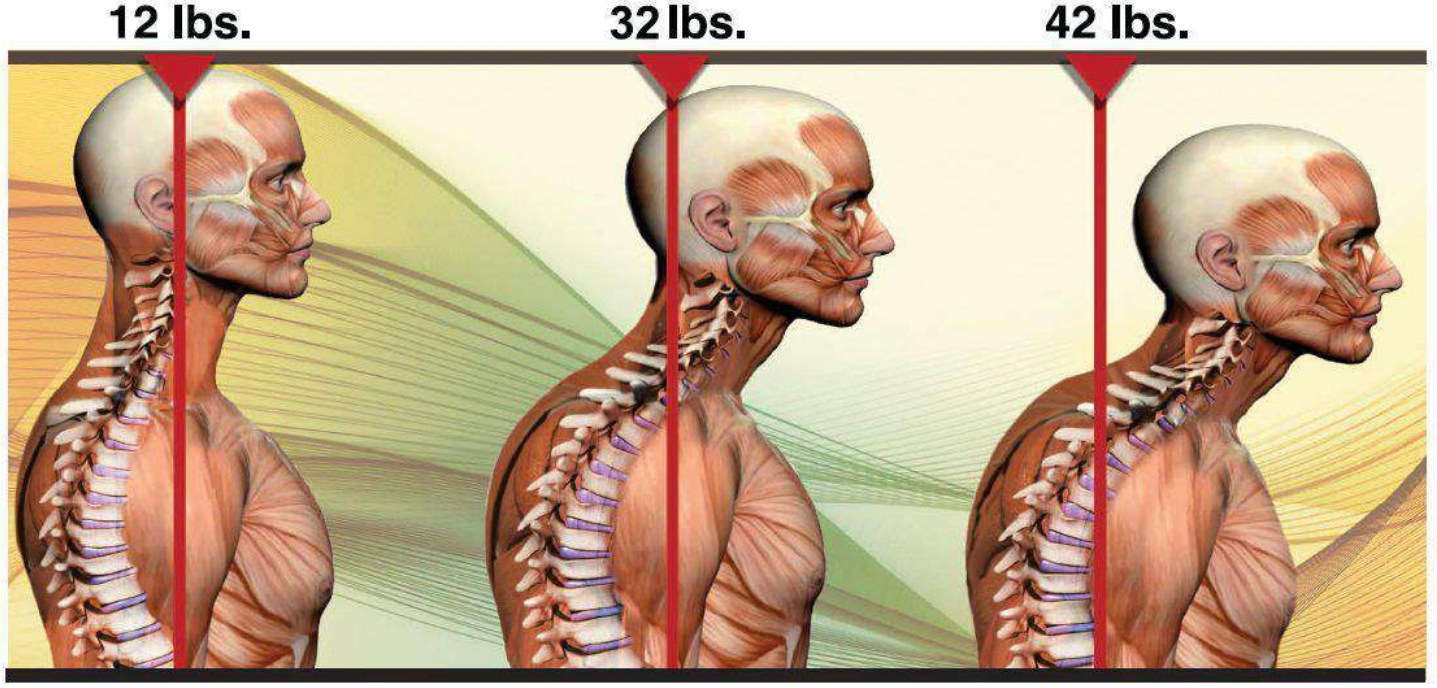
Causes:

- Life style
- Age
- Posture
- Repetitive movement
- Psychological factor

Misbeliefs:

- I slept in wrong position
- I did a wrong movement yesterday
- The scan showed the problem
- I have to live with it
- I have an active life

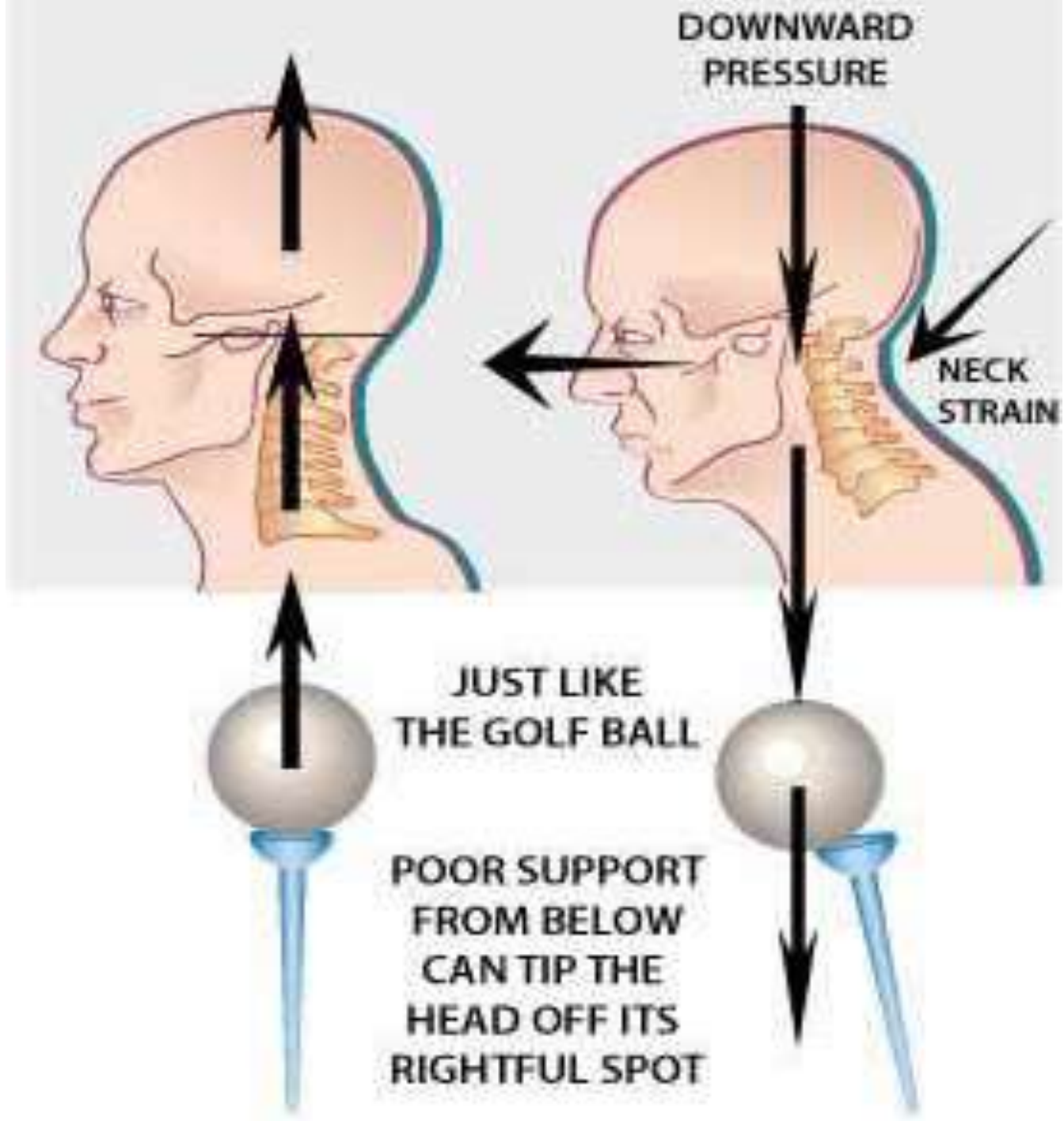
How Heavy is Your Head?



42 Pound Head

"For every inch of Forward Head Posture, it can increase the weight of the head on the spine by an additional 10 pounds."

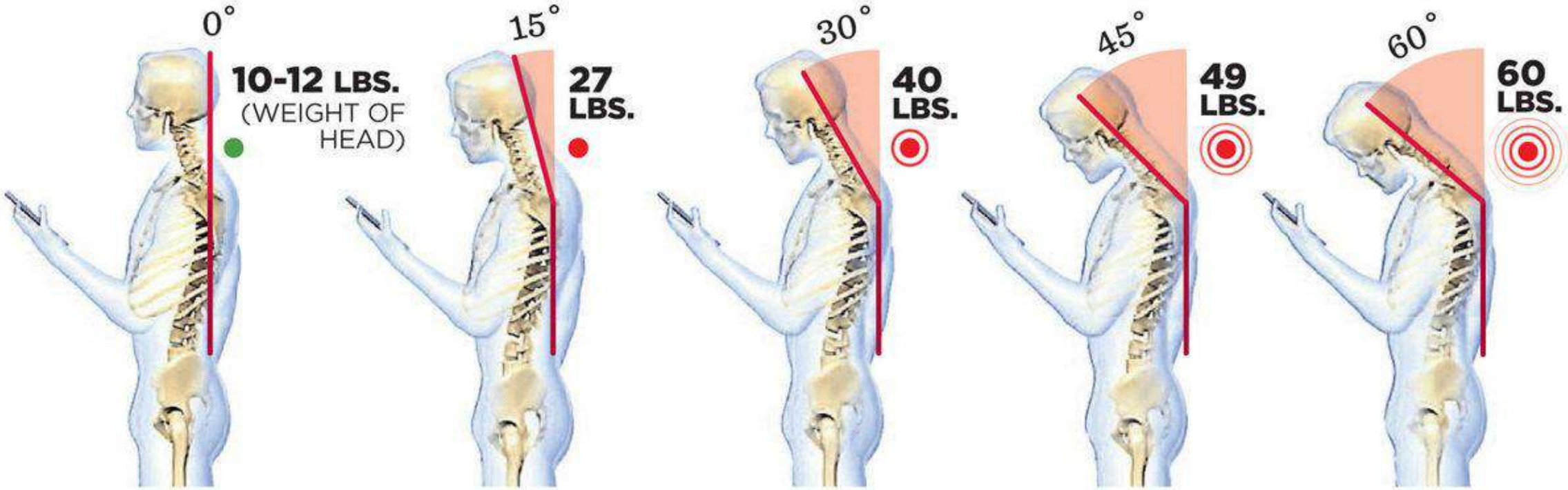
Kapandji, Physiology of Joints, Vol. 3


DOWNWARD
PRESSURE
NECK
STRAIN
JUST LIKE
THE GOLF BALL
POOR SUPPORT
FROM BELOW
CAN TIP THE
HEAD OFF ITS
RIGHTFUL SPOT

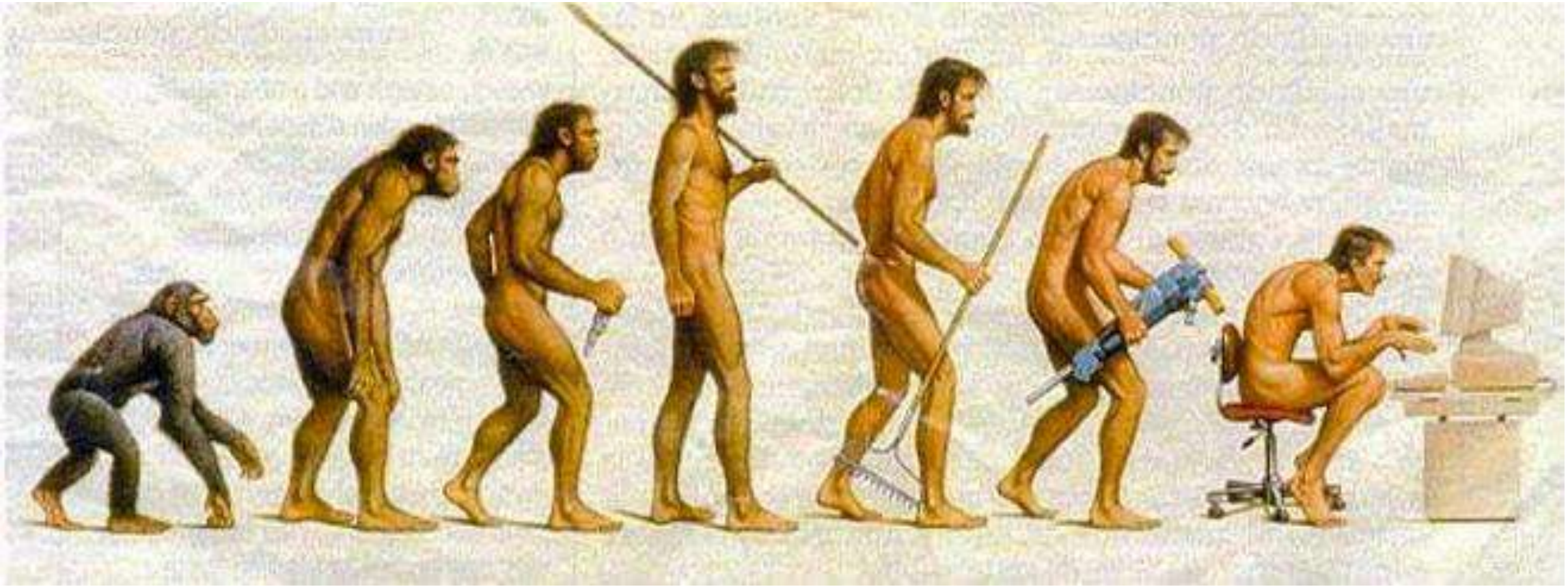


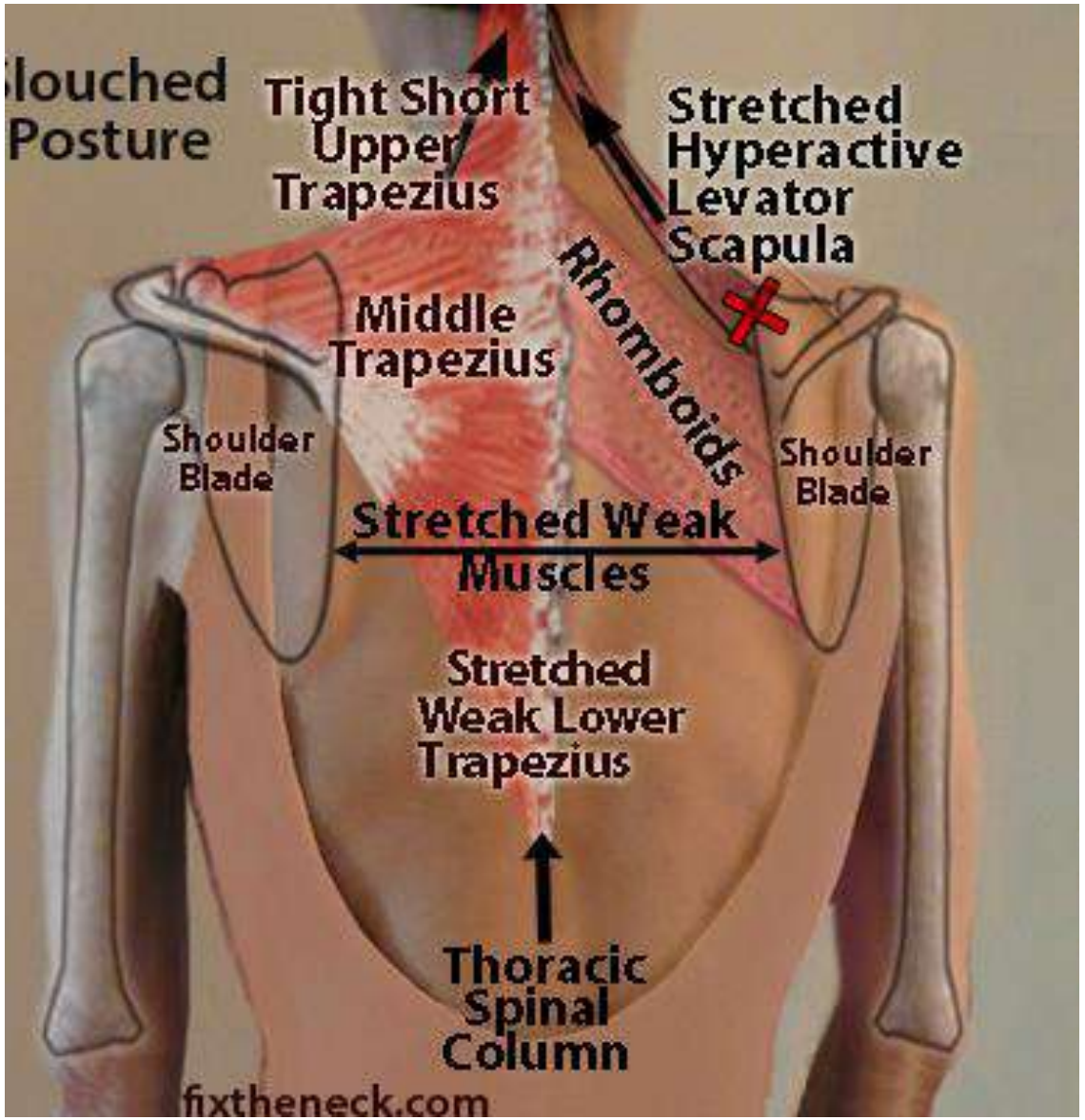
WATCH YOUR PHONE POSTURE

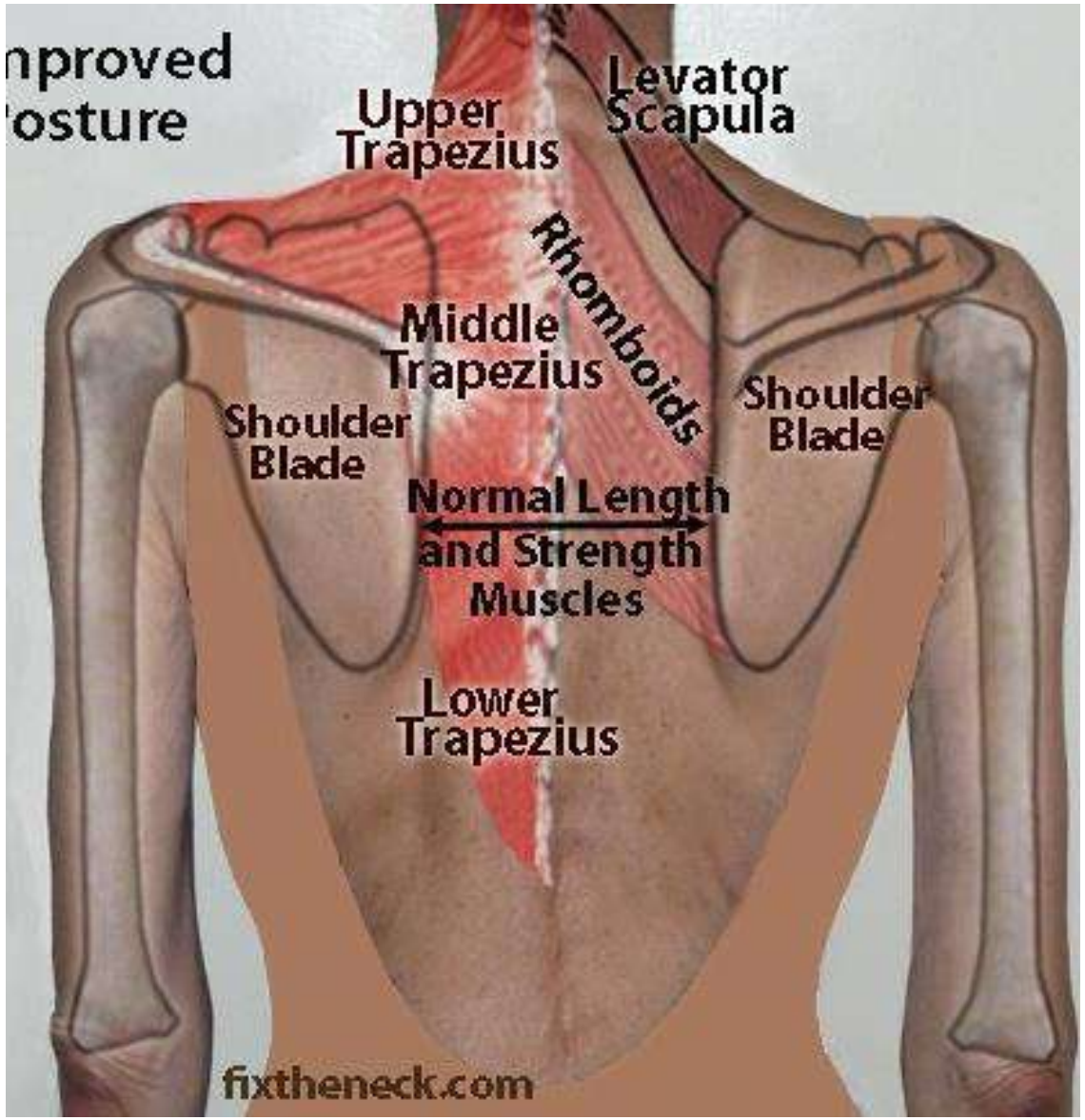
The pressure on the spine dramatically increases when the head is tilted forward. This stress to the spine can lead to early wear, tear and possible surgeries, according to research by Kenneth Hansraj in the National Library of Medicine.



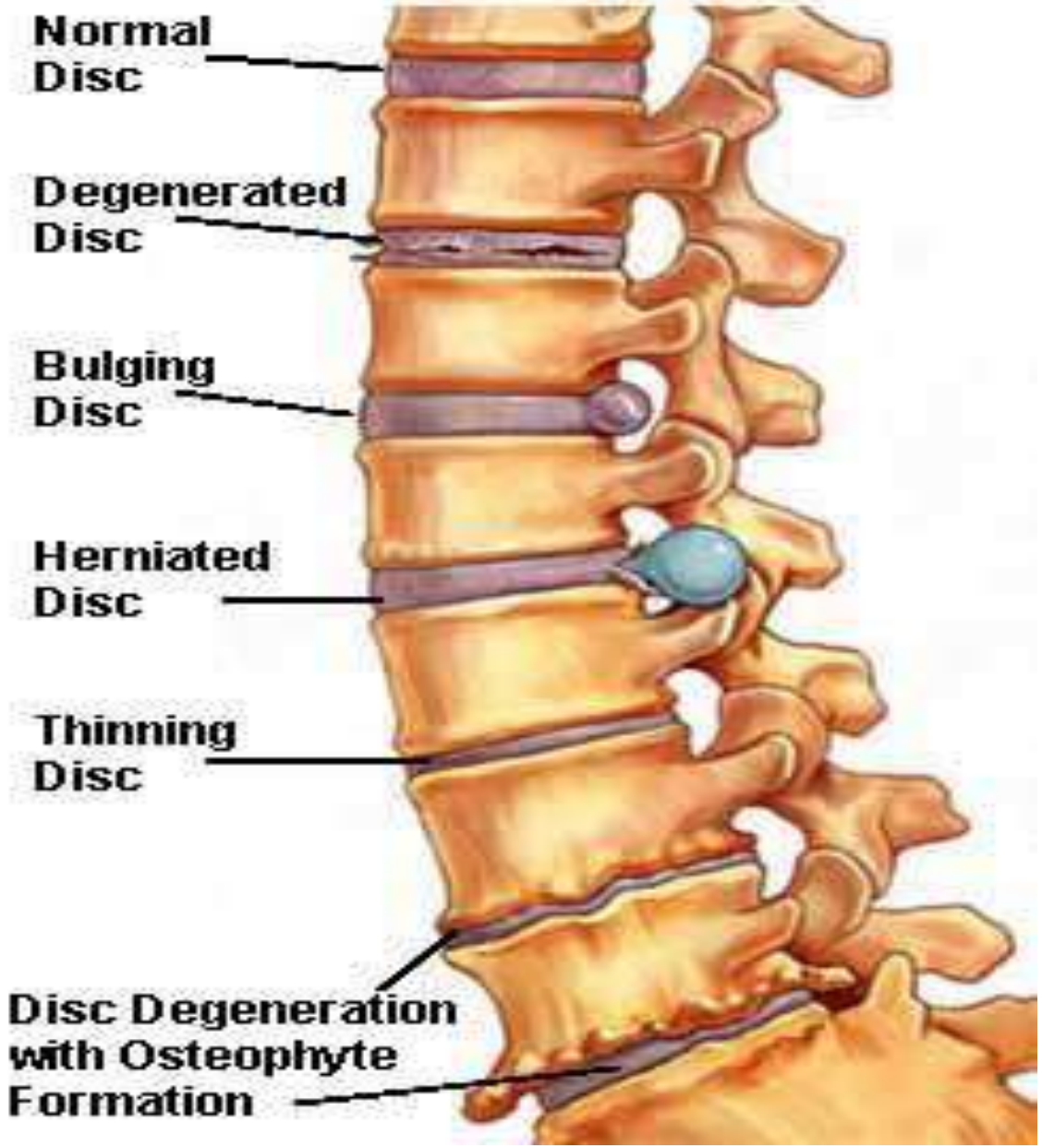
SOURCE: SURGICAL TECHNOLOGY INTERNATIONAL




Slouched Posture
Tight Short Upper Trapezius
Stretched Hyperactive Levator Scapula
Middle Trapezius
Rhomboids
Shoulder Blade
Shoulder Blade
Stretched Weak Muscles
Stretched Weak Lower Trapezius
Thoracic Spinal Column
fixtheneck.com


Improved Posture
Upper Trapezius
Levator Scapula
Middle Trapezius
Rhomboids
Shoulder Blade
Shoulder Blade
Normal Length and Strength Muscles
Lower Trapezius
fixtheneck.com

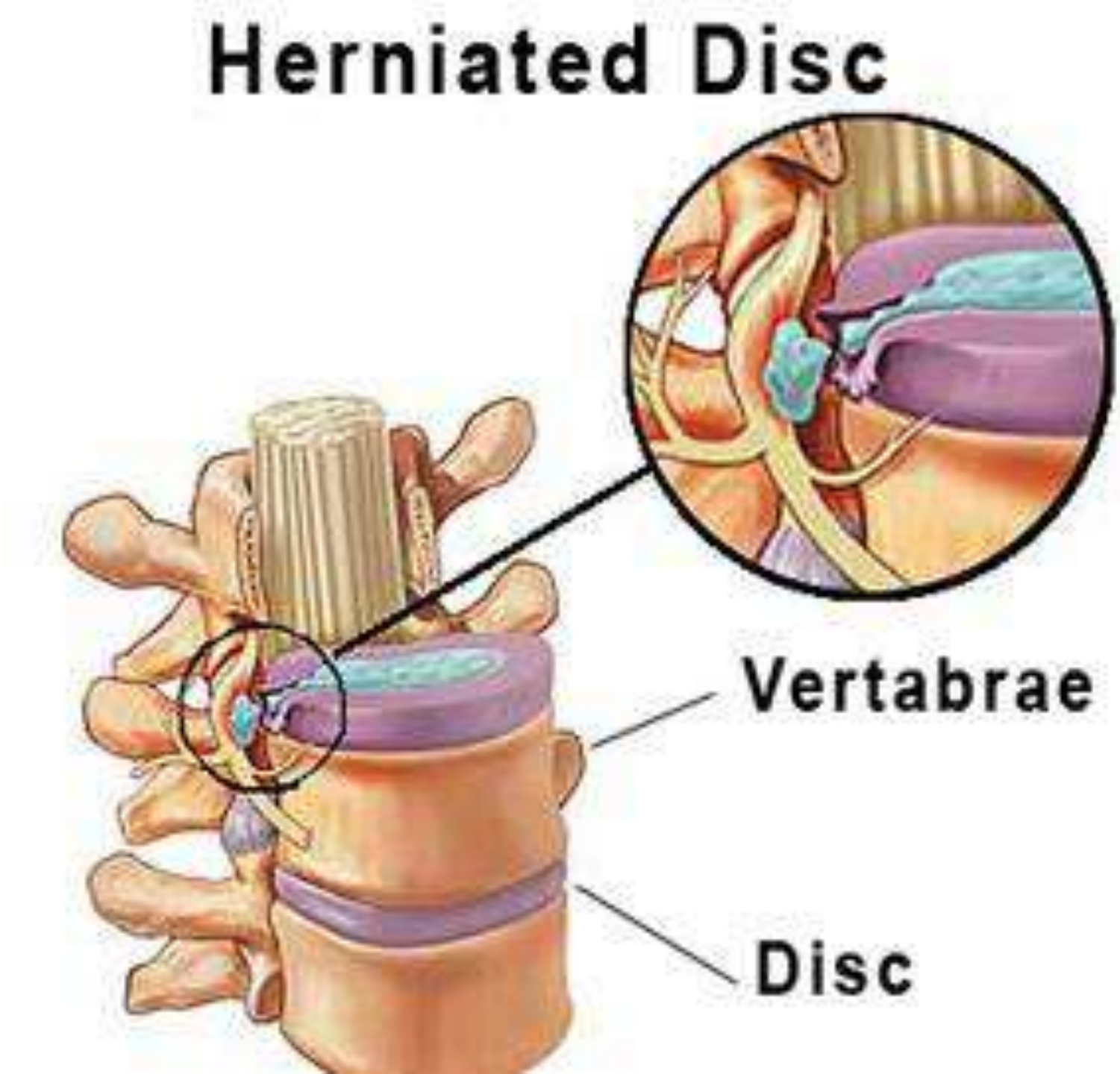
Examples of Disc Problems



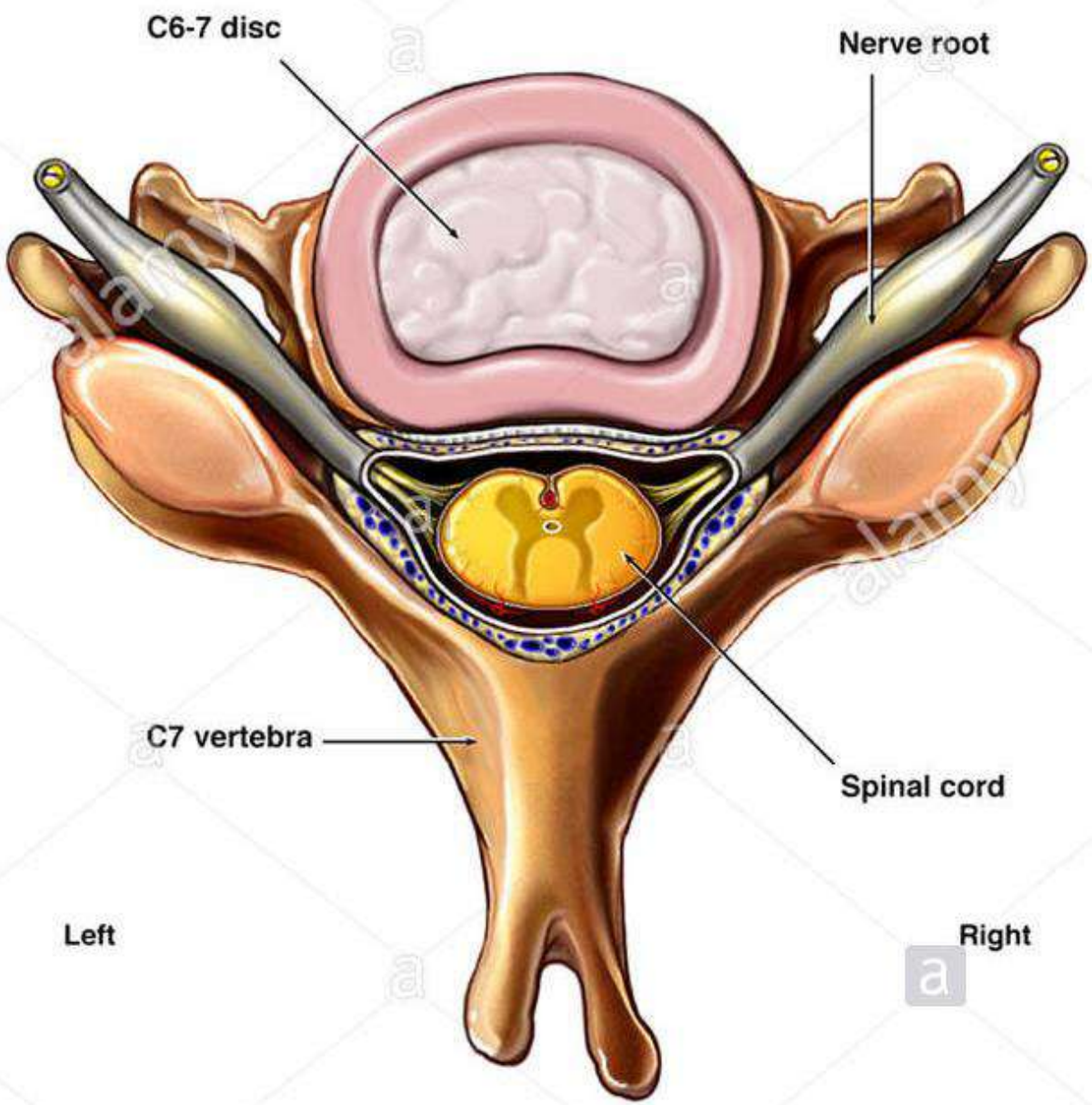
Degenerative disease

Herniated disc:

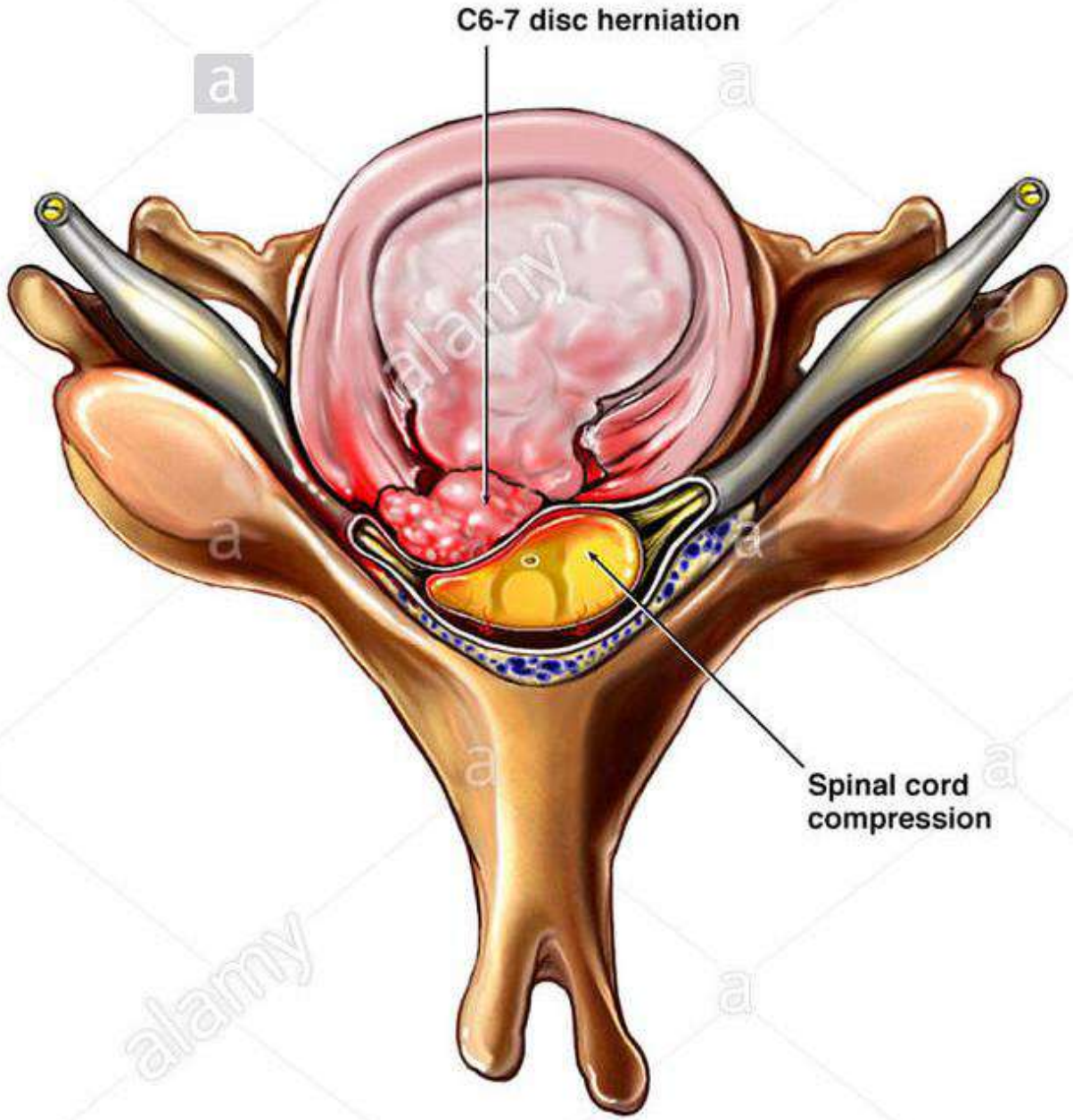
- Annulus fibrosus of the vertebral disc is torn, enabling the nucleus to extrude through the fibers



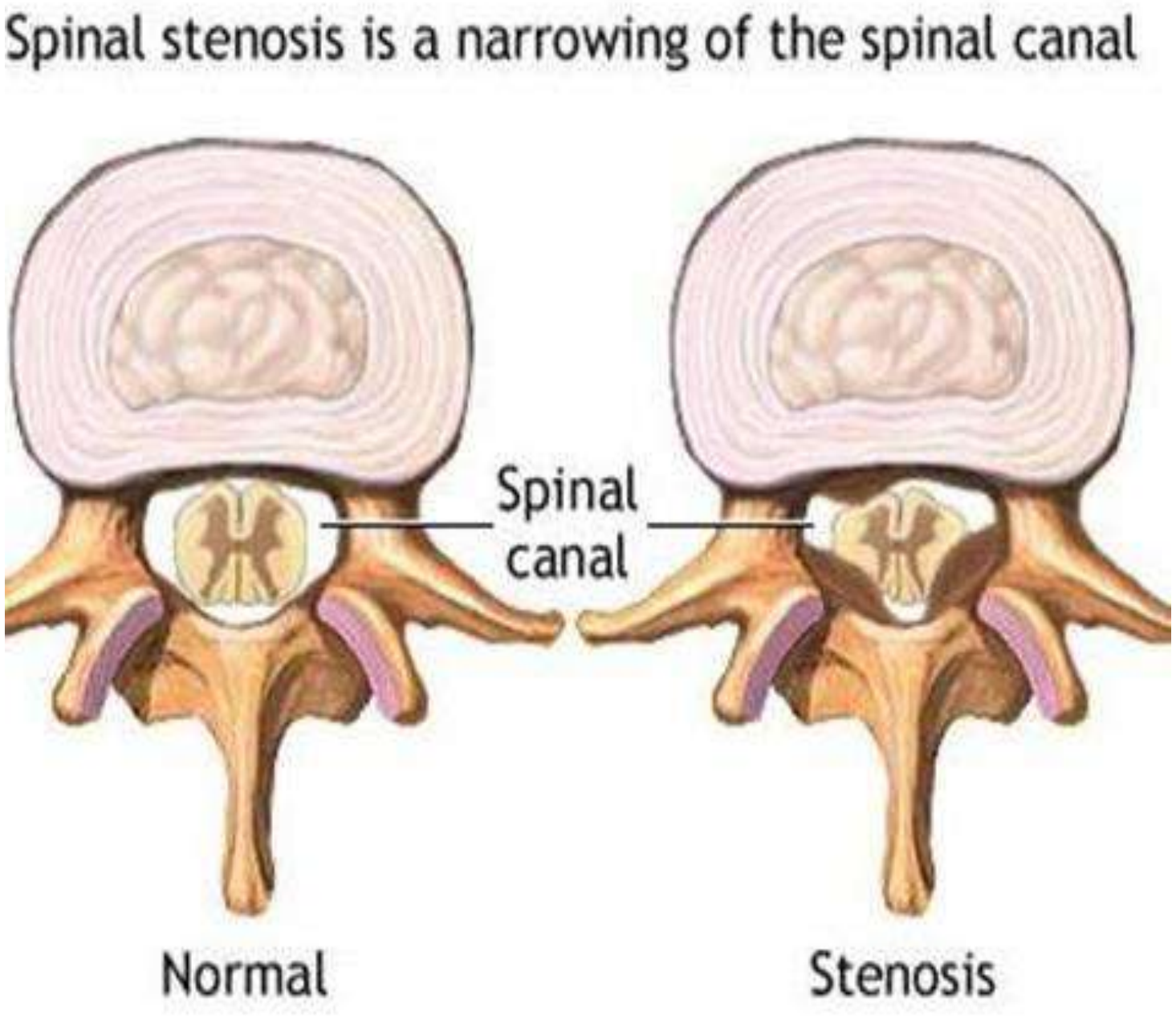
Normal Vertebra and Disc



C6-7 Disc Herniation

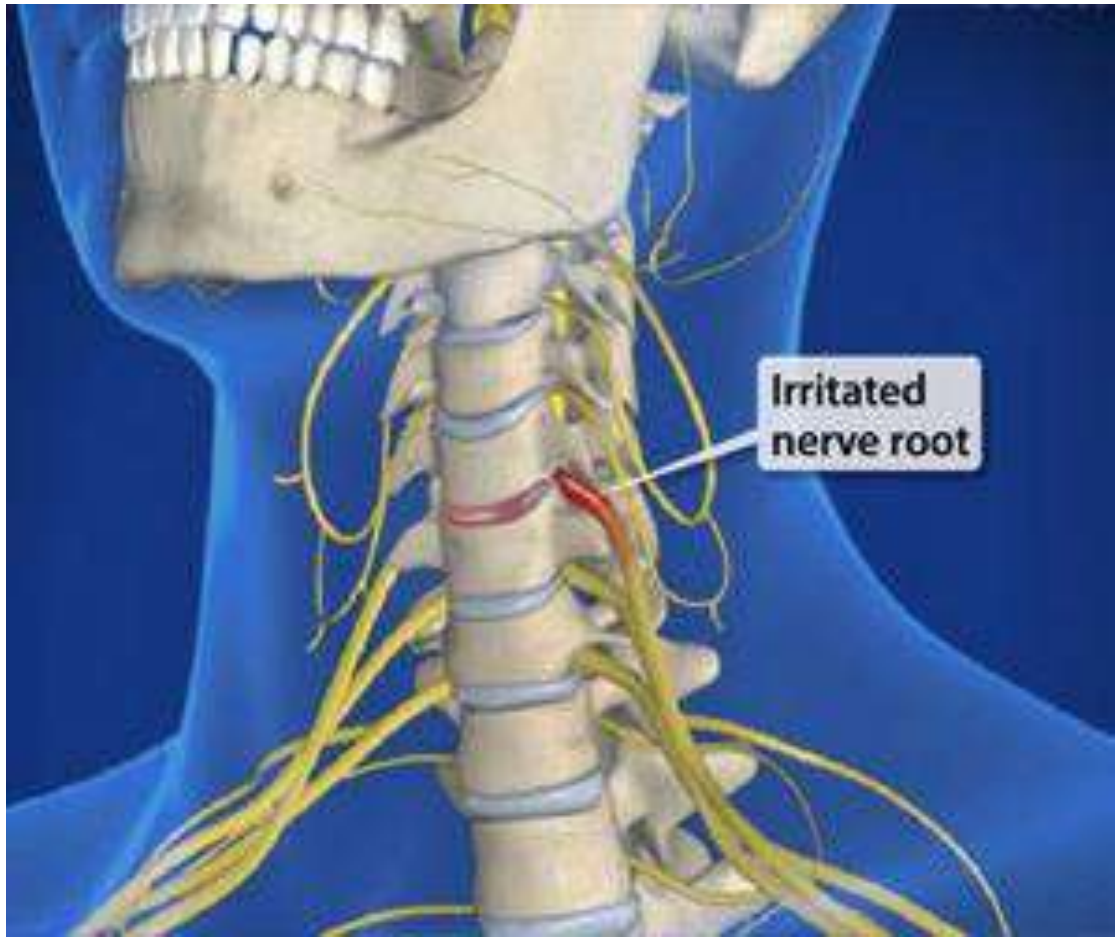


Degenerative disease



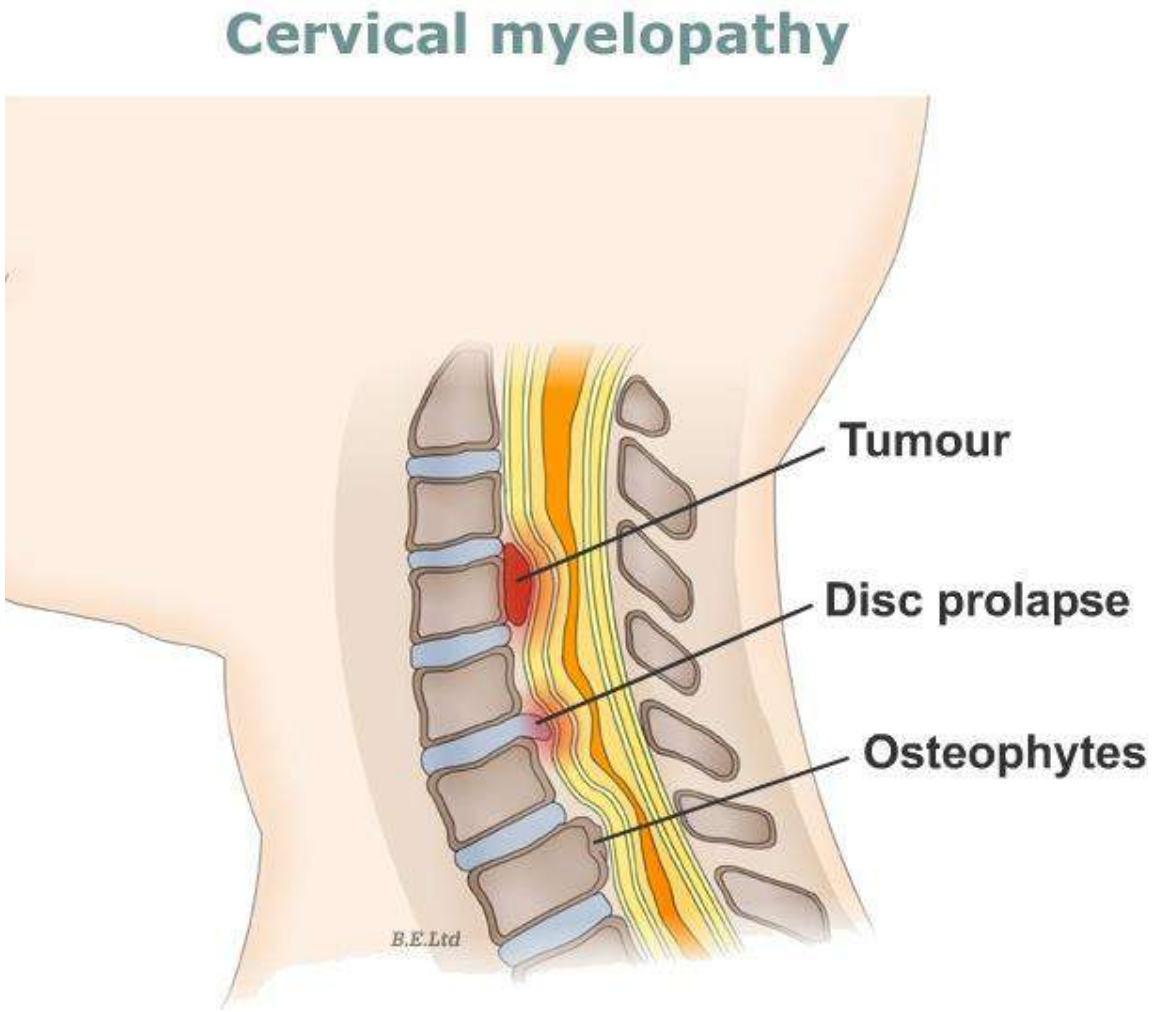
Radiculopathy

- Compressed nerve root or nerve



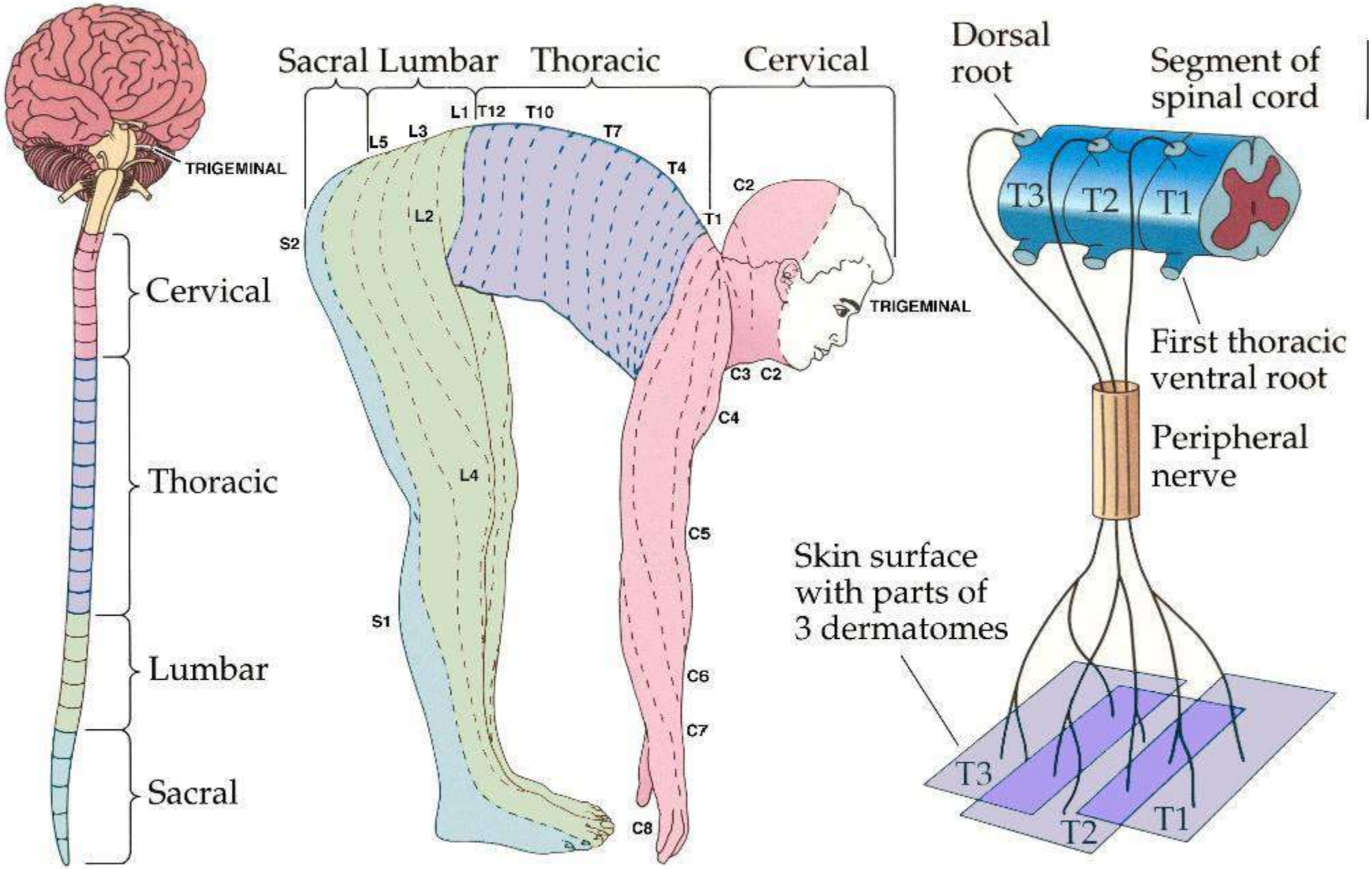
Myelopathy

- Compressed spinal cord



Cervical disc degenerative disease signs & symptoms

1. Vertebral signs & symptoms:
    - Pain
    - Dysfunctions
    - Posture problem
    - Soft tissue changes
2. Radicular signs & symptoms:
    - Pain
    - Motor & sensor dysfunctions
3. Pseudo radicular signs & symptoms
    - Myogelosis
    - Tendinosis
    - Vascular lesion

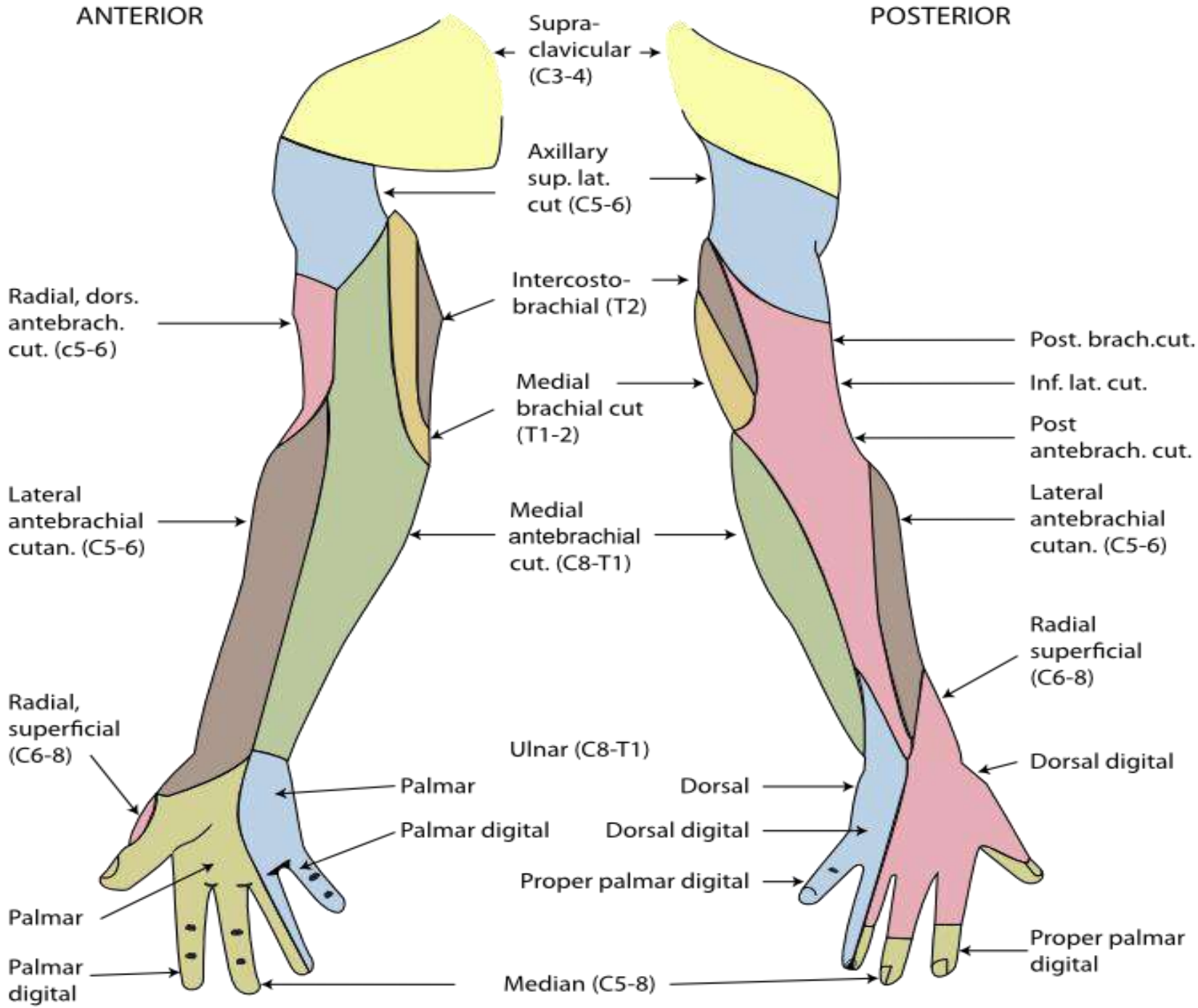

TRIGEMINAL
Cervical
Thoracic
Lumbar
Sacral
Sacral Lumbar Thoracic Cervical
L5 L3 L1 T12 T10 T7 T4 T1
S2 L2
C2
TRIGEMINAL
C3 C2
C4
L4
C5
S1
C6
C7
C8
Dorsal root
Segment of spinal cord
T3 T2 T1
First thoracic ventral root
Peripheral nerve
Skin surface with parts of 3 dermatomes
T3
T2
T1

Cervical Spine Nerve Root Exam



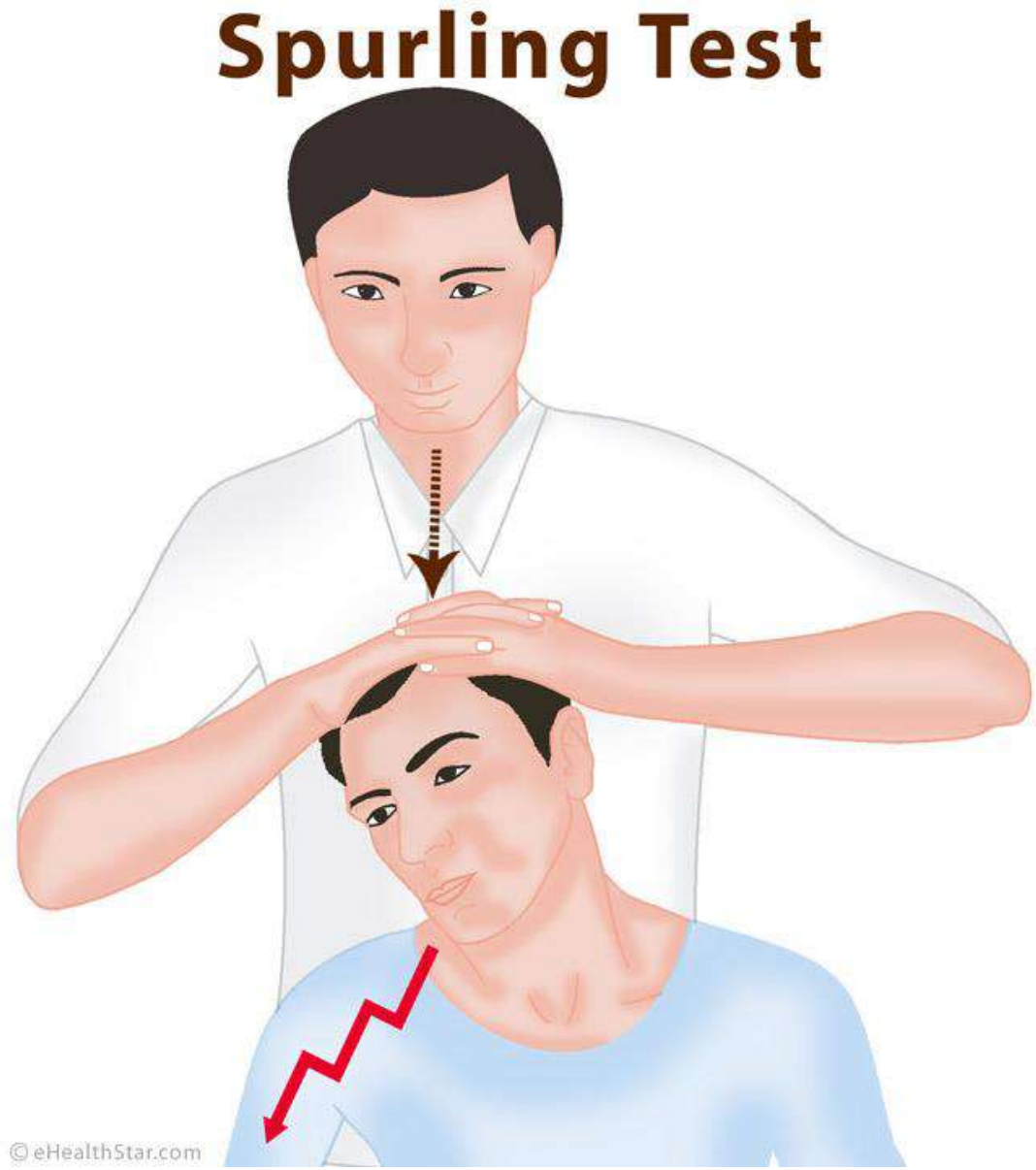


nabilebraheim@gmail.com


ANTERIOR
POSTERIOR
Supra-
clavicular
(C3-4)
Axillary
sup. lat.
cut (C5-6)
Intercosto-
brachial (T2)
Radial, dors.
antebrach.
cut. (c5-6)
Medial
brachial cut
(T1-2)
Lateral
antebrachial
cutan. (C5-6)
Medial
antebrachial
cut. (C8-T1)
Radial,
superficial
(C6-8)
Ulnar (C8-T1)
Palmar
Palmar digital
Palmar
Palmar
digital
Median (C5-8)
Post. brach.cut.
Inf. lat. cut.
Post
antebrach. cut.
Lateral
antebrachial
cutan. (C5-6)
Radial
superficial
(C6-8)
Dorsal digital
Dorsal
Dorsal digital
Proper palmar digital
Proper palmar
digital

Cervical radiculopathy

Disc	Root	Muscle	Reflex	Sensor
C4-C5	C5	Shoulder abduction (deltoid) Elbow flexion (biceps)	Biceps	Lateral upper arm
C5-C6	C6	Elbow flexion (biceps) Wrist extension (extensor carpi)	Biceps	Radial forearm Thumb , index finger
C6-C7	C7	Elbow extension (triceps) Wrist flexion	Triceps reflex	Middle finger
C7-Th1	C8	Fingers flexion (flexor digitorum)		Ring finger, ulnar side of forearm
Th1-Th2	Th1	Fingers abduction		Ulnar side of elbow

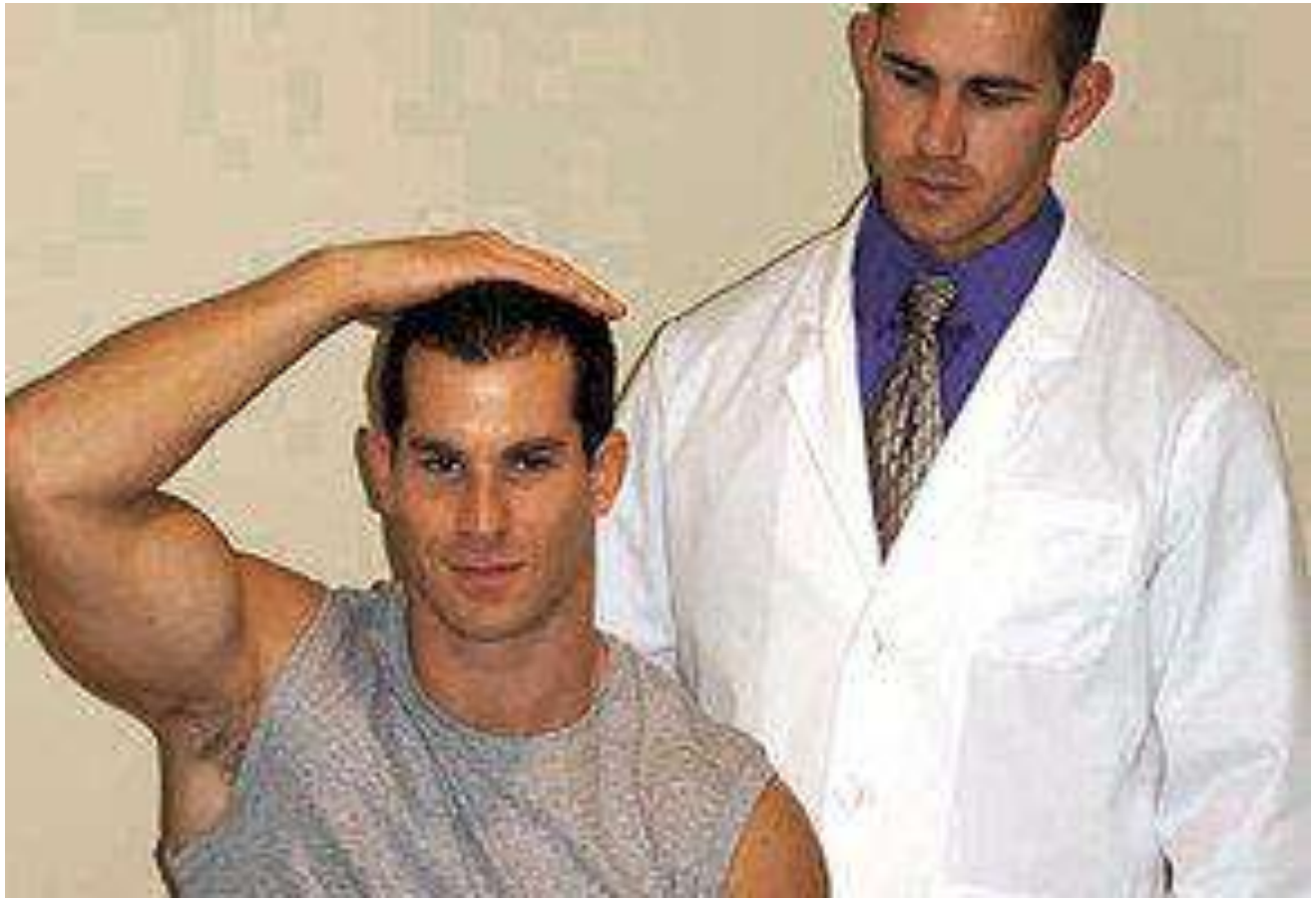


Cervical compression

- Turn the client's head to the affected side and apply downward pressure to the top of the patient's head

- This movement aggravates the pain

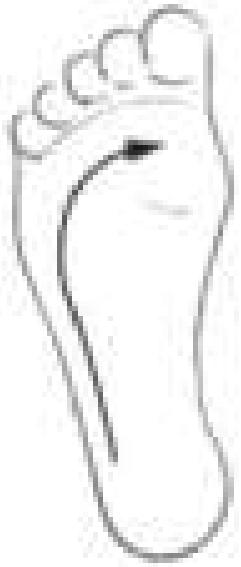
Shoulder abduction test



- The client puts the hand on the top of the head.
- In the cervical radiculopathy this position decreases the pain.

Babinski’s sign

- The sole is firmly stroked with an instrument.
- When the Babinski reflex is present, it is always sign of the central nervous system disorder.





Hoffmann’s sign

- Flipping the middle finger
- The response is positive, when the index finger flexes
- The response is negative, when there is no reaction
- It reflects un upper motor neuron lesion from the spinal cord compression



Traditional treatment

- Exercises
- Cervical manipulation
- Collar
- Hot and cold compress
- Change the life style

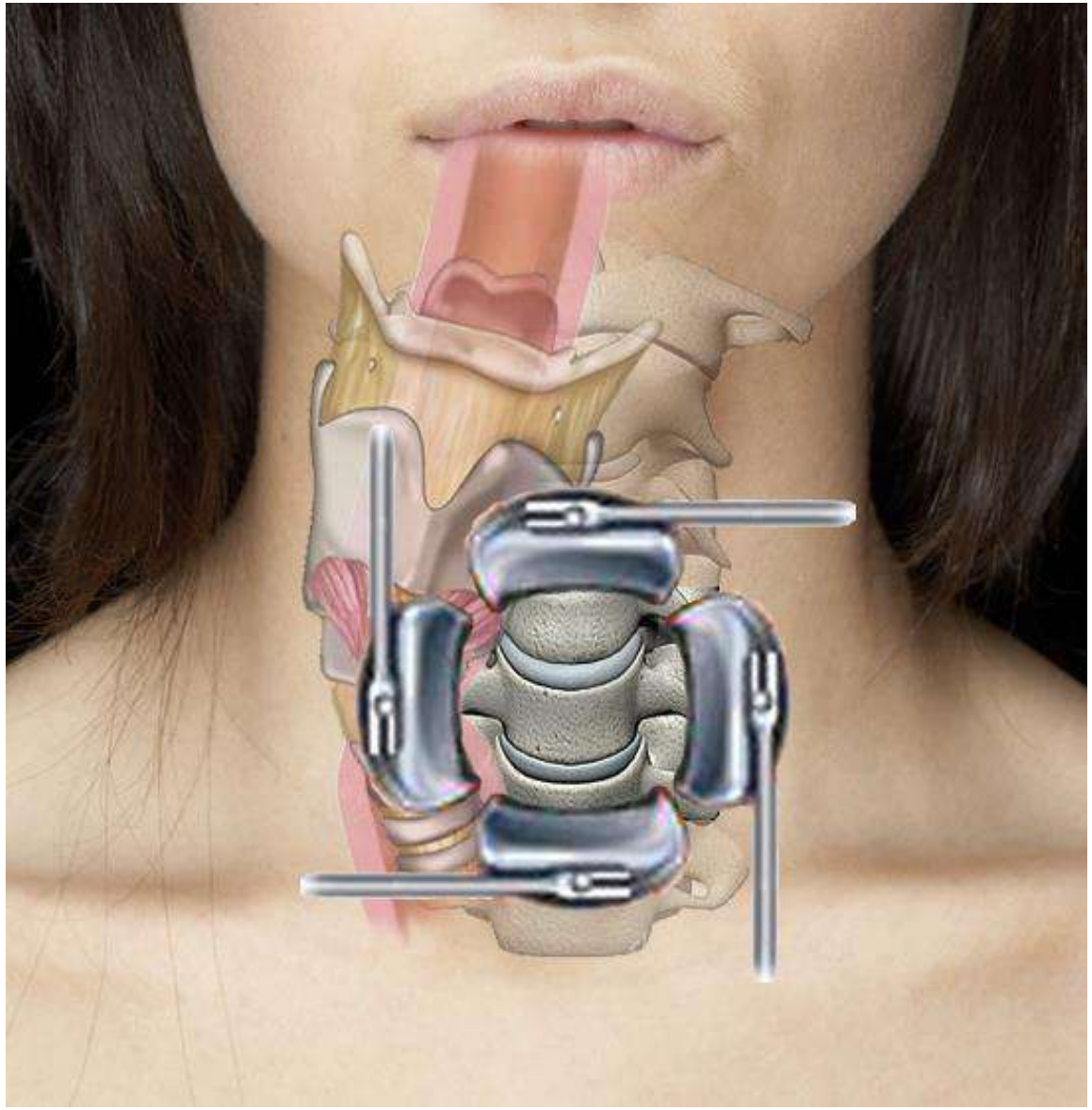
Medication:

- Painkiller
- Anti-inflammatory (steroid or NSAID)



Surgery

- Discectomy
- Fusion
- Disc replacement
- Decompression
  - Corpectomy
  - Laminectomy
  - Laminoplasty

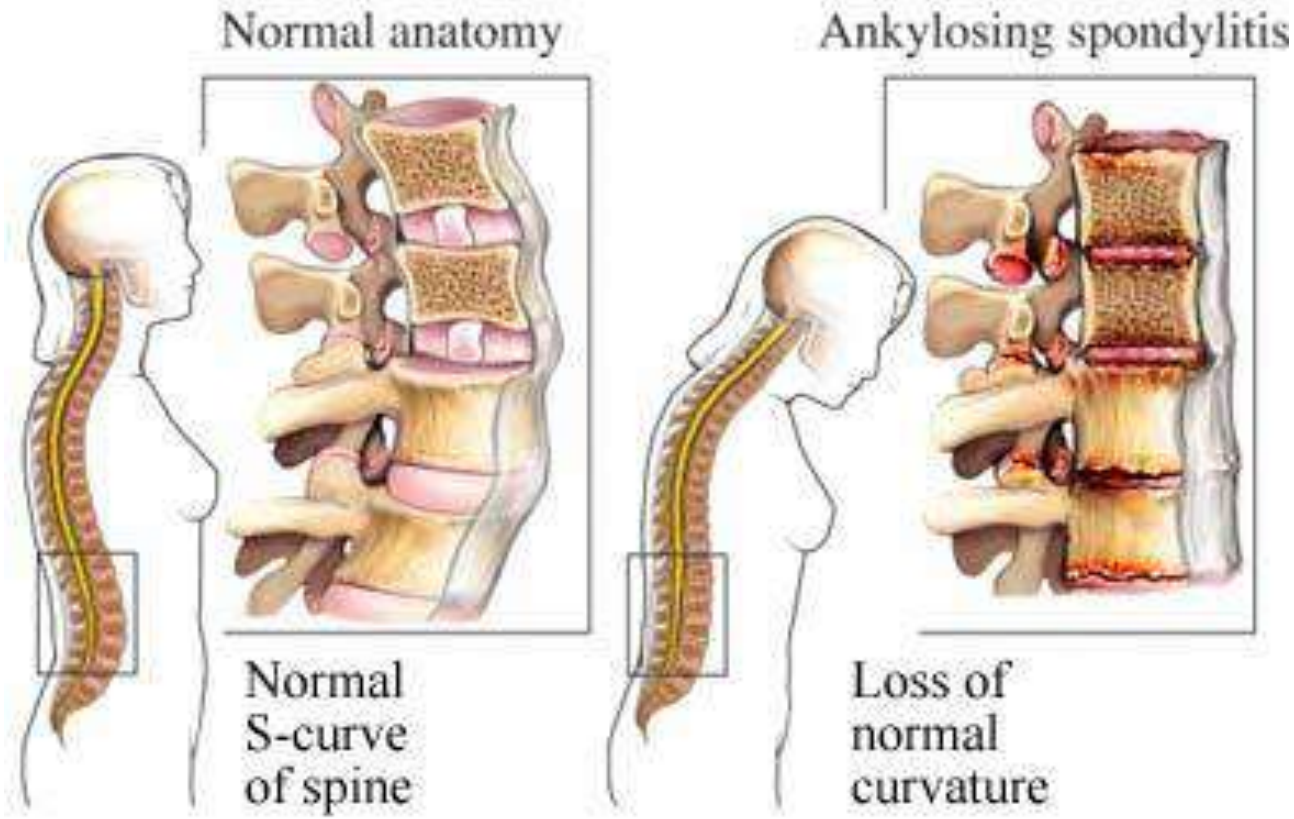


Ankylosing spondylitis/ Bechterew's disease

Description:

- Inflammatory
- Chronic
- Autoimmune
- Progressive

- Primarily effects the spinal column
- Later other joints as well
- Occurs age between 15-40
- Males are more effected
- "Bamboo" spine



Ankylosing spondylitis/ Bechterew's disease

Signs & symptoms :

Early symptoms:

- pain in the lower back, mostly in morning time
- Stiffness and limited ROM of the spine

Later stage:

- Arthritis in other joints, hip and shoulder
- Limited ROM in the joints
- Breathing difficulty
- Weight loss

Causes:

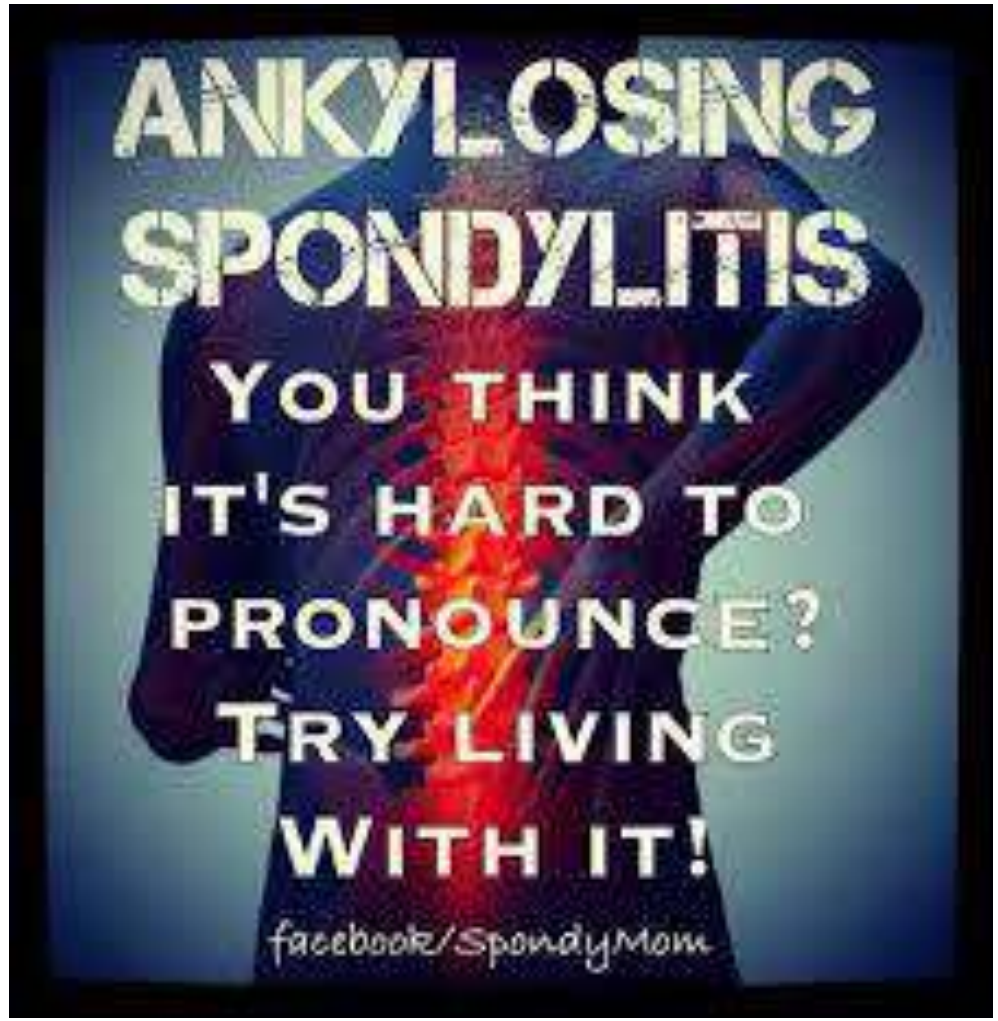
- Unknown
- There is genetic and family link

Treatments:

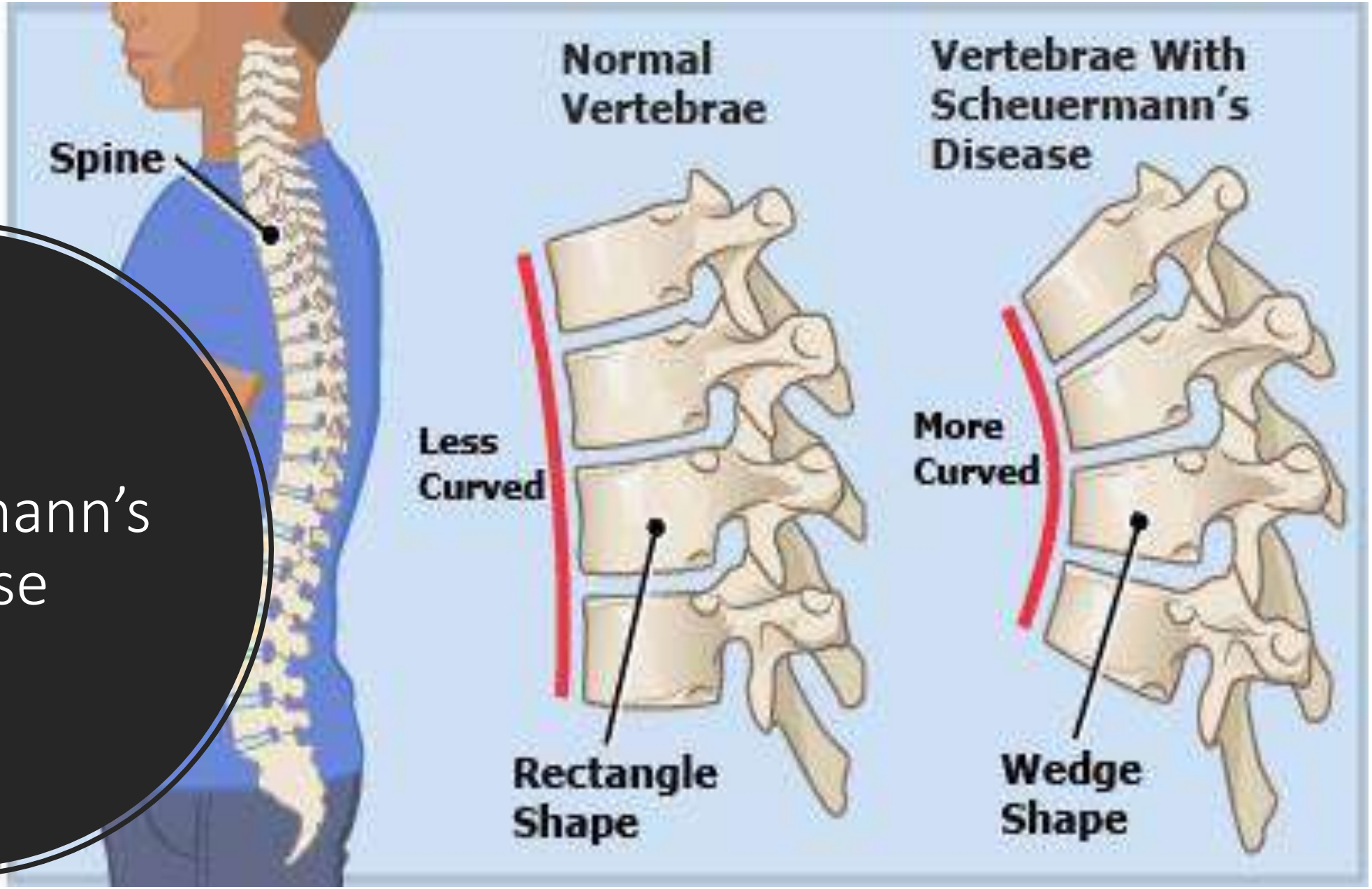
- Medication
- Physical therapy
  - Exercises
  - Swimming
  - Breathing exercises
  - Soft tissue massage
- Surgery
- Life style

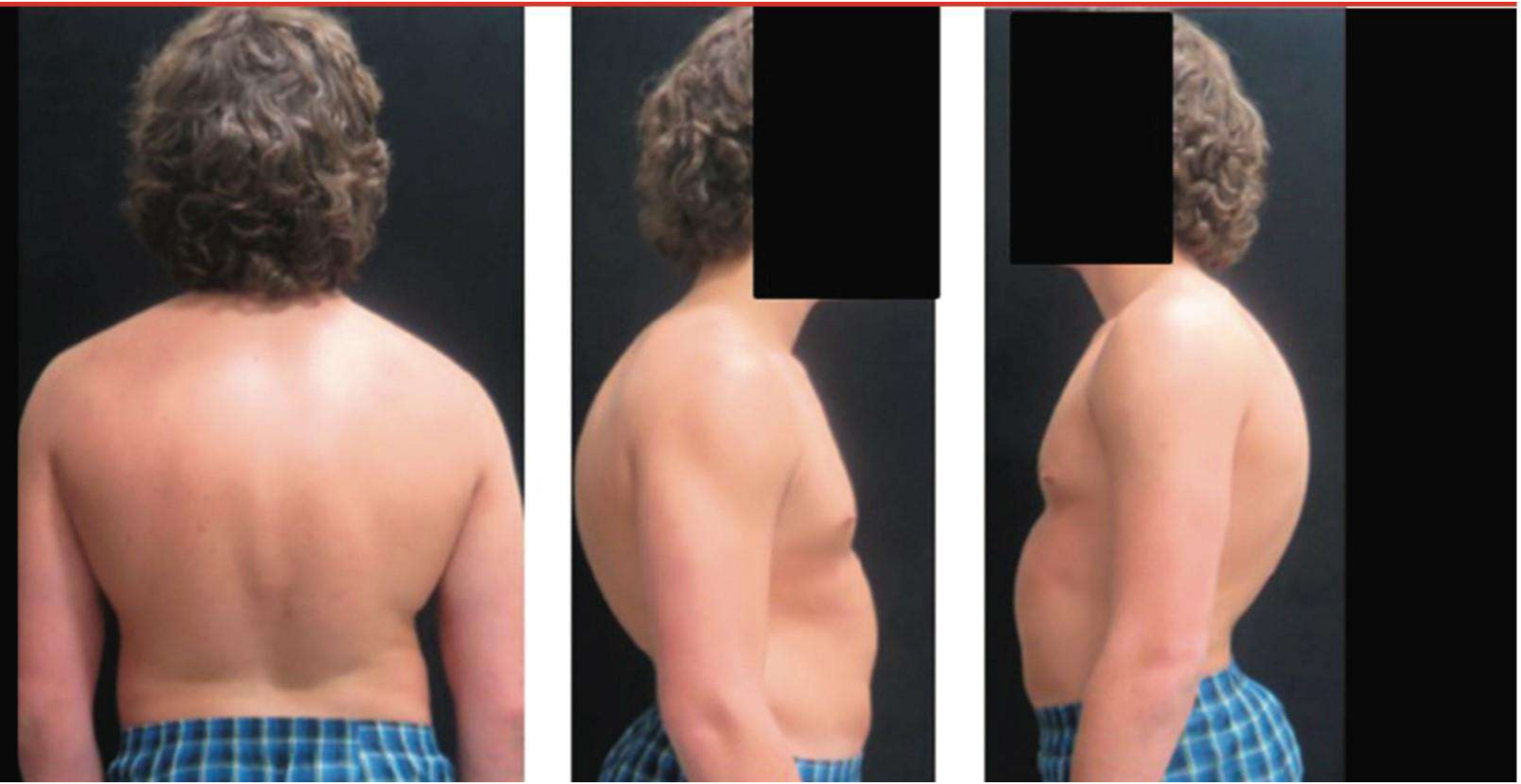
• Goals of the treatment:

- Reduce the pain
- Improve posture
- Maintain ROM
- Prevent stiffness
- Increase lung capacity


ANKYLOSING
SPONDYLITIS
YOU THINK
IT'S HARD TO
PRONOUNCE?
TRY LIVING
WITH IT!
facebook/SpondyMom

Scheuermann's Disease





Scheuermann's disease

Description

- Juvenile developmental
- Idiopathic
- Structural deformity of the thoracic spine in the sagittal plane

- Signs & symptoms
  - Back pain
  - Kyphotic back (hunchback)
  - Wedged shaped vertebrae

Treatments:

Using brace – while the bones are still growing

Surgery- in advanced cases

Physical therapy

Goals of the treatment:

Reduce pain

Increase flexibility

Torticollis

Congenital torticollis

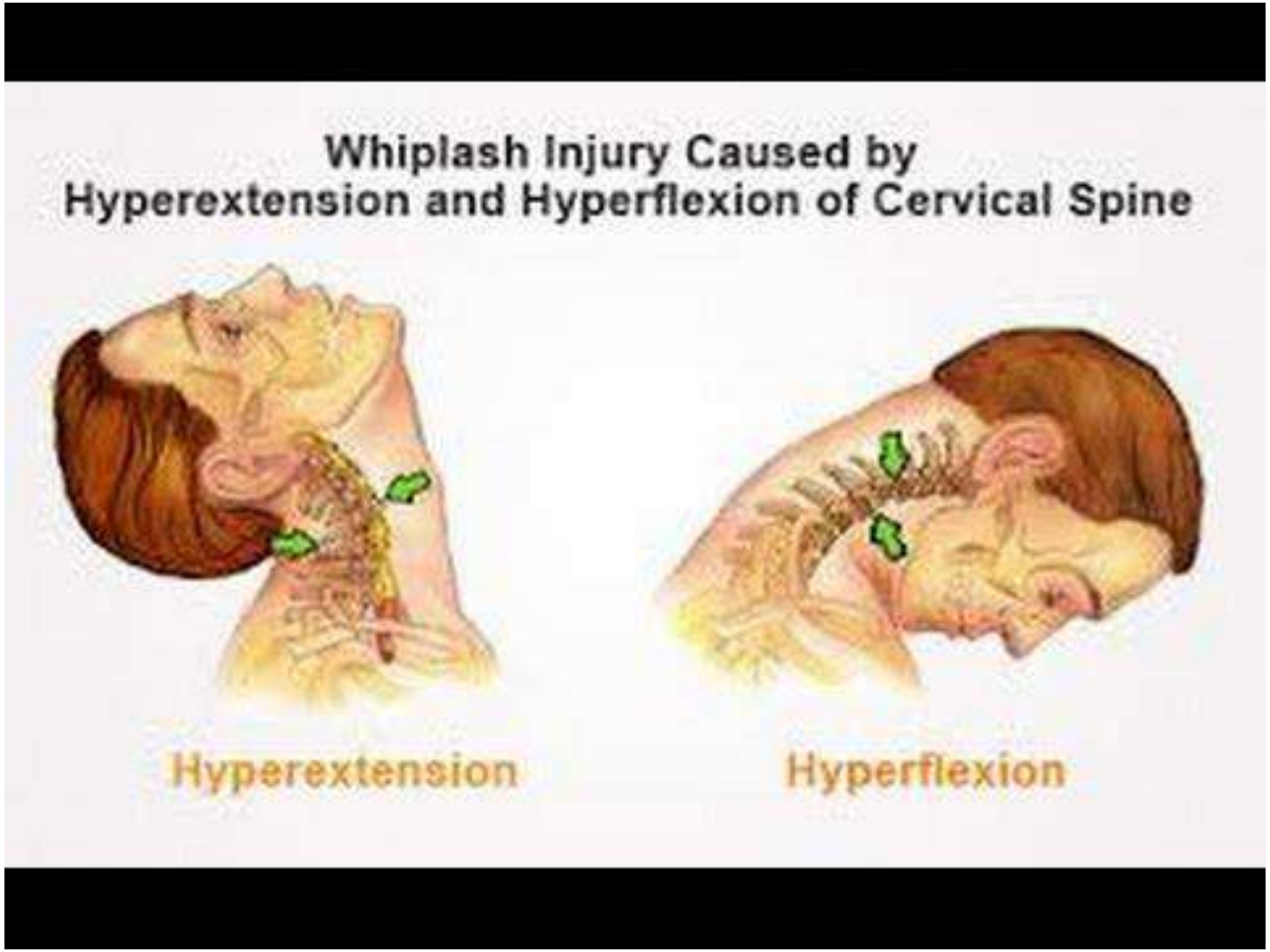
- Stretching exercises and changing the infant's head position can correct the problem

Spasmodic torticollis

- Neck muscles contract involuntarily
- Painful condition
- Causes:
  - Neurological disorder
  - Accident
- Treatment:
  - Can go away without treatment
  - Physical therapy



Whiplash


Whiplash Injury Caused by
Hyperextension and Hyperflexion of Cervical Spine
Hyperextension
Hyperflexion

Whiplash

Signs & symptoms

- Pain
- Dizziness
- Tinnitus (ringing in the ears)
- Nausea
- Restricted neck movement
- Stiff muscles
- Lesion in the arms

Treatments

- Pain management
- Muscles treatment
- Continue the active life

Recovery time:

- Generally within few days or weeks
- In rare cases permanent damage

Spina bifida:

Incomplete closing of the spine and membrane of the spinal cord

Types of spina bifida



Occulta

Spina bifida occulta is the least serious and most common type. It is usually discovered only on x-rays or scans. Most people never become aware of their condition.



Meningocele

In the next most serious type, meningocele the coverings of the spinal cord (meninges) pass back through the opening in the spine to form a cyst-like swelling.



Myelomeningocele

If the spinal cord is enclosed in the cyst the condition is called myelomeningocele. This is the most serious type of spina bifida.

Greater Occipital Nerve



Neuralgia and Headache Pain

Occipital Neuralgia and the Nerves Affected

Lesser Occipital Nerve

www.neckpainsupport.com


Assessment
Deciding outcomes
Planning
Intervention
Evaluation
WORK PROCESS