



# AKUT RYGKIRURGI

INTRODUKTIONSPROGRAM FOR LÆGER I

INTRODUKTIONS- OG HOVEDUDDANNELSESSTILLINGER



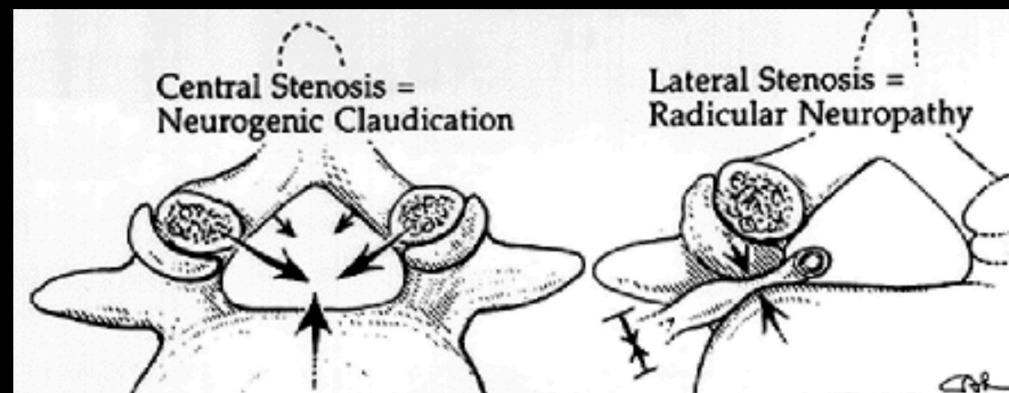
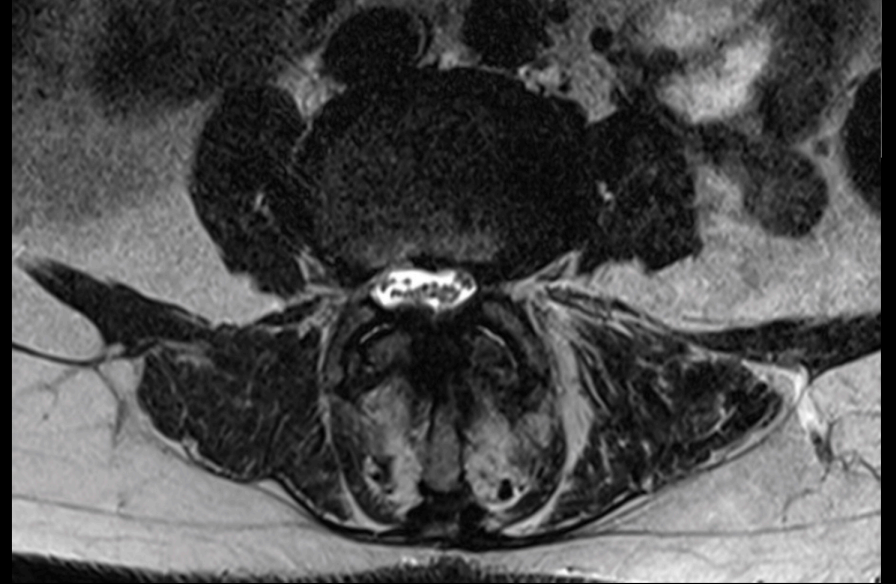
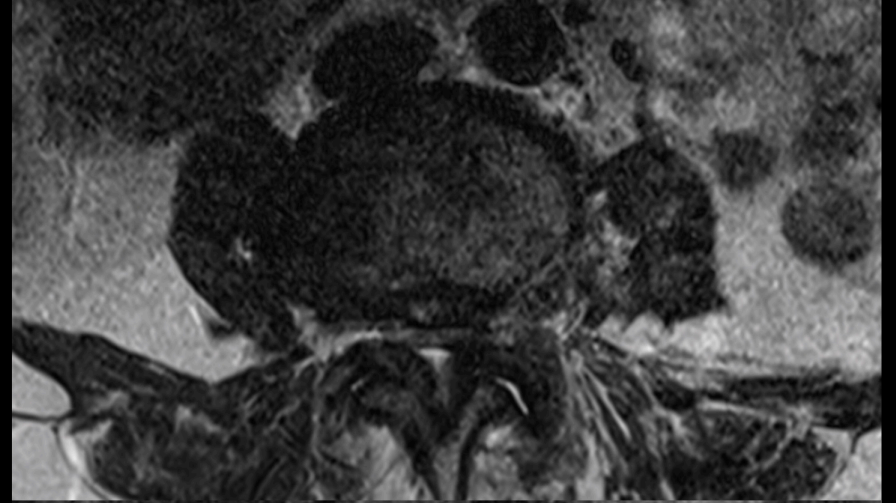
# INDHOLD

- Aldersbetinget diskusdegeneration
- Rygkirurgiske adgange
- Cervikalt hæmatom efter ACIF
- Lumbalt hæmatom & CES
- Rodinkarceration & parese
- Tværsnitssyndromet
- Durarift & meningit
- Shock, dyspnø & delir

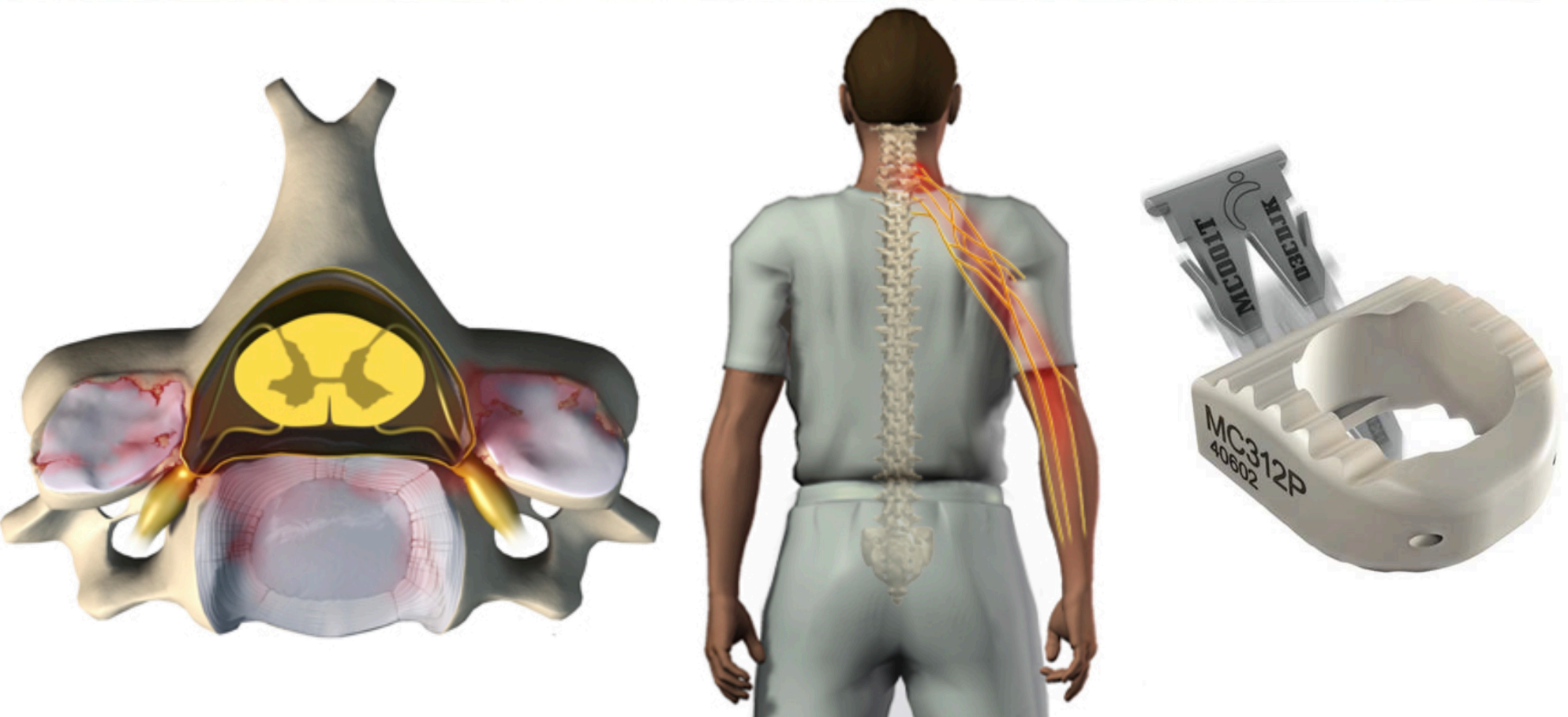
# RYGKIRURGISKE PRINCIPPER

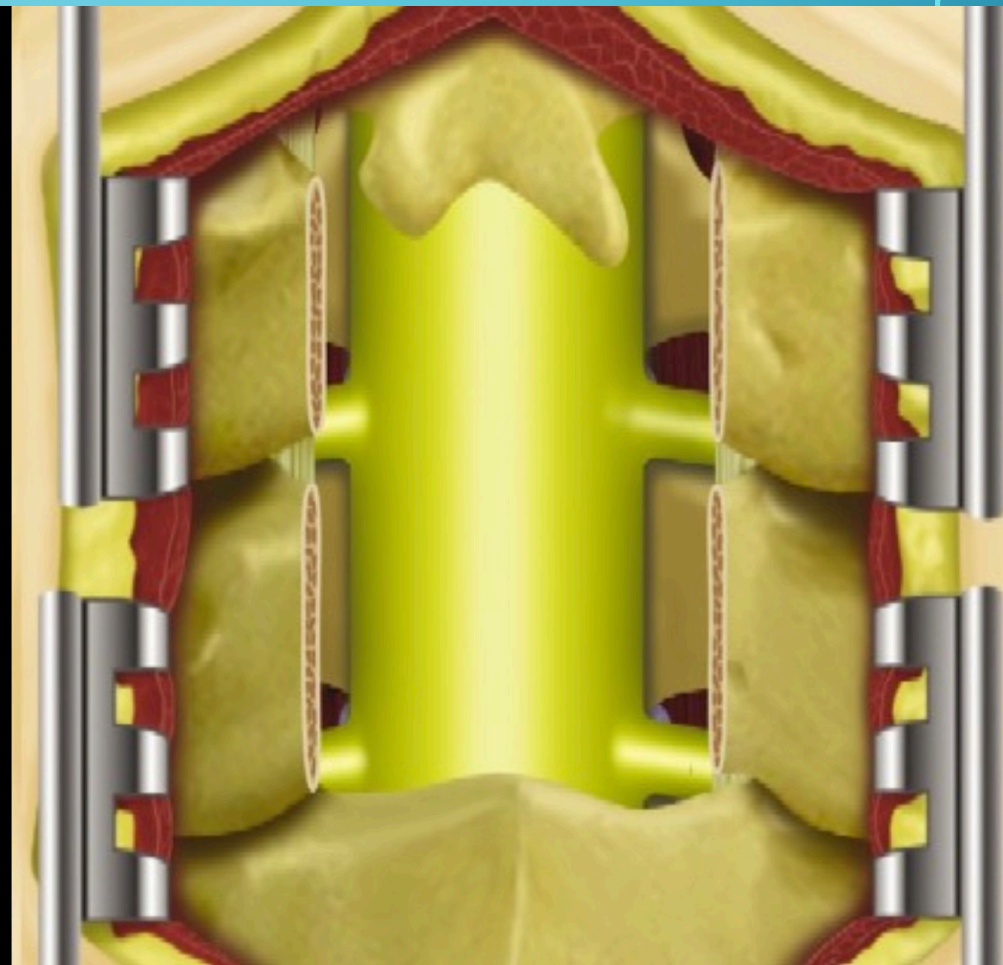
- Dekompression (frilægning)
- Spondylodese (stabilisering)
- Korrektion (opretning)





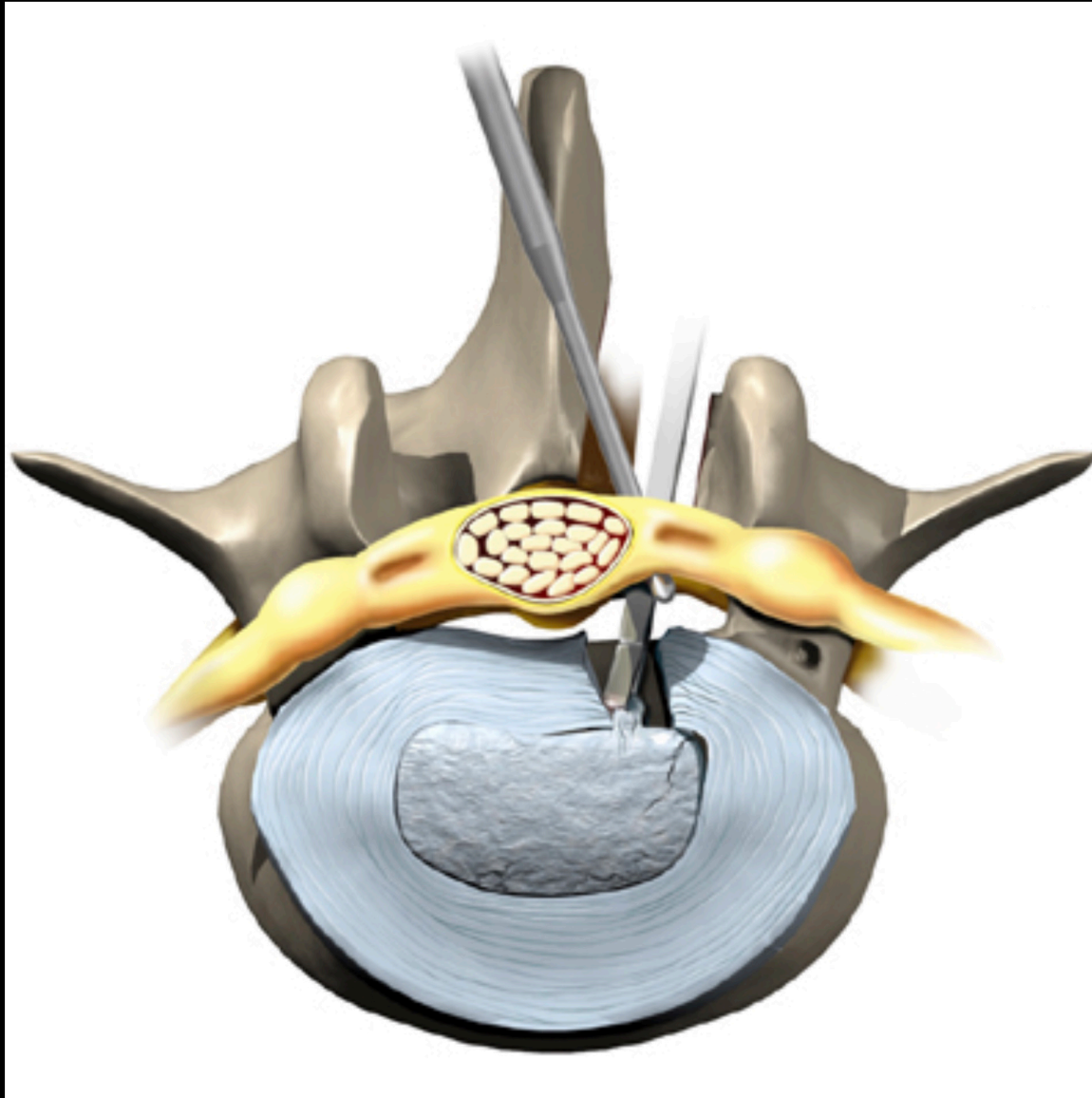




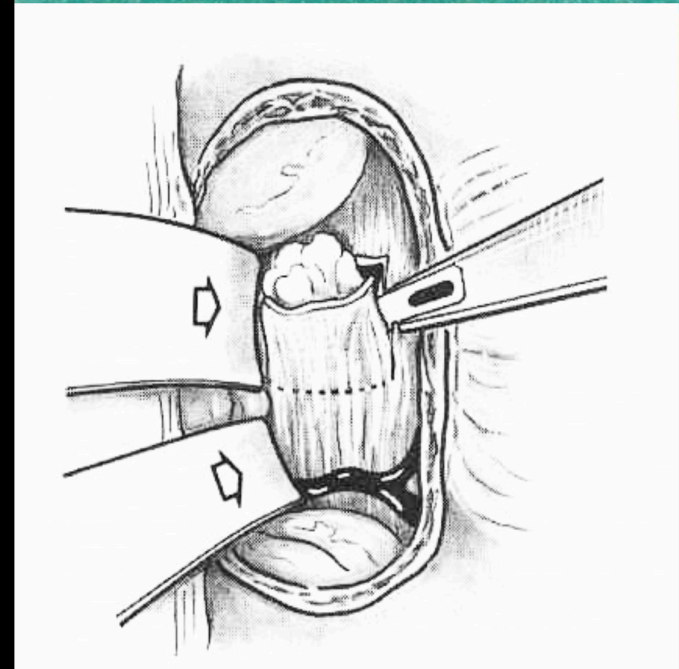
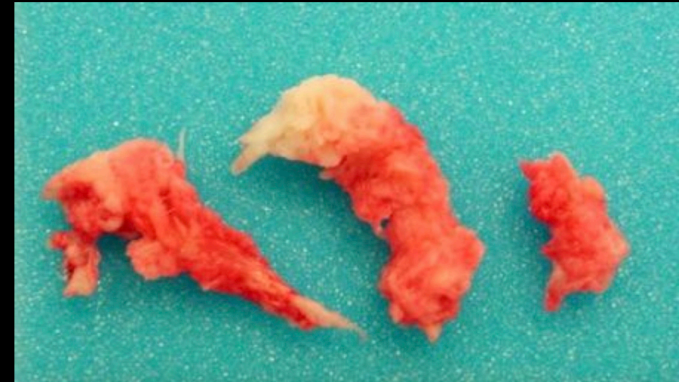




# Partiel hemilaminektomi



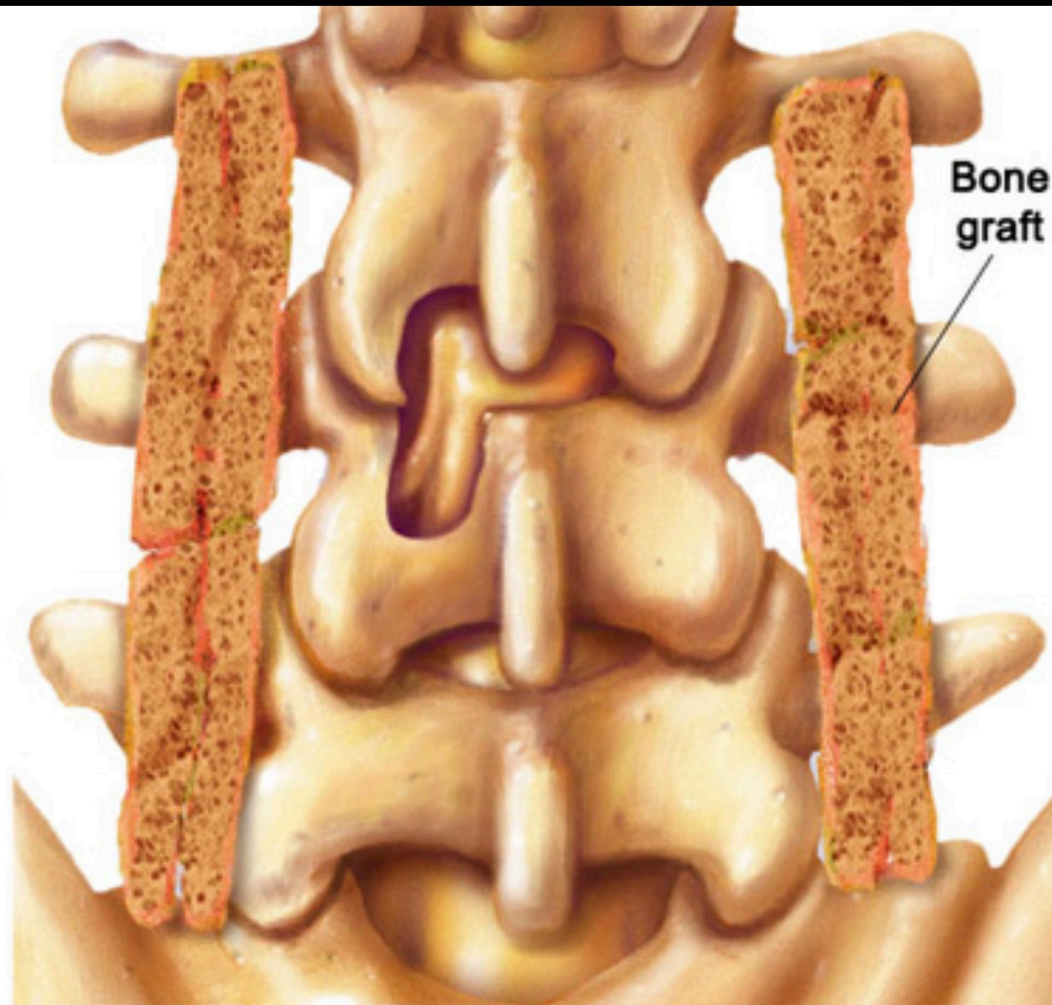
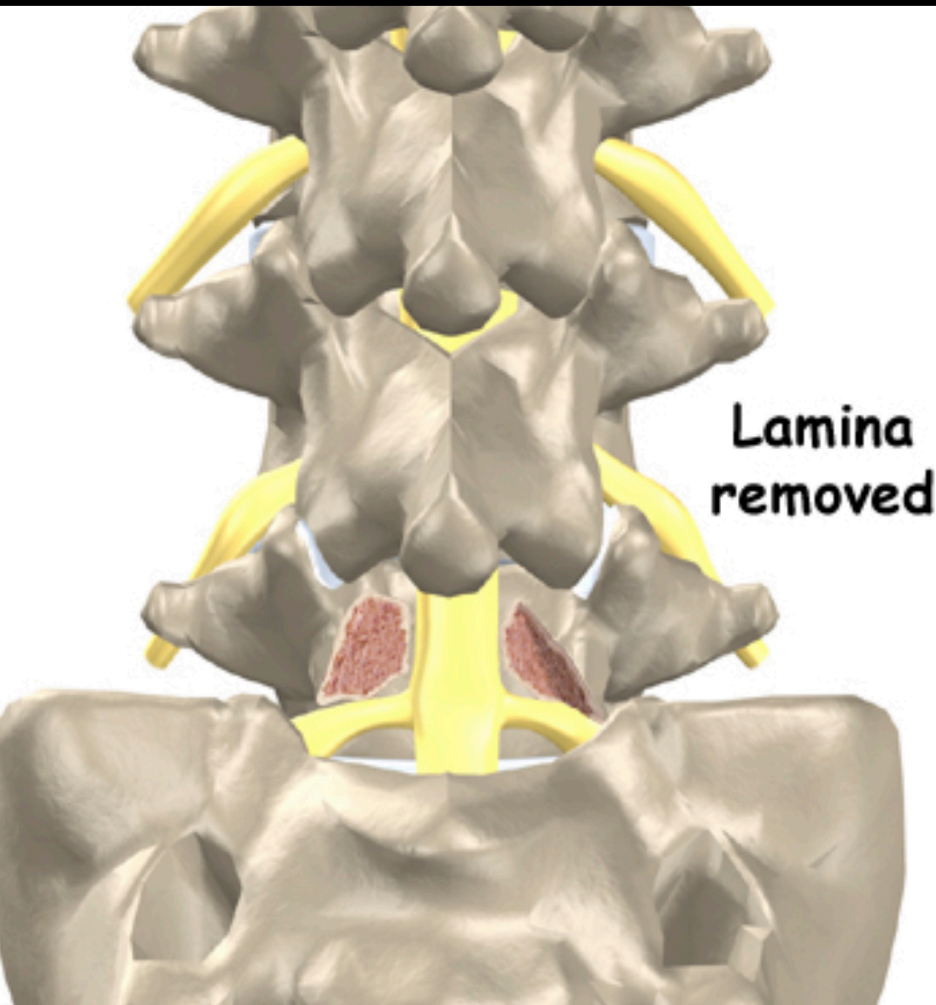
- Klassisk diskektomi
- Mikroskop v/ recidiv
- Evt. dese





# Laminektomi, rodfrilægning, NID

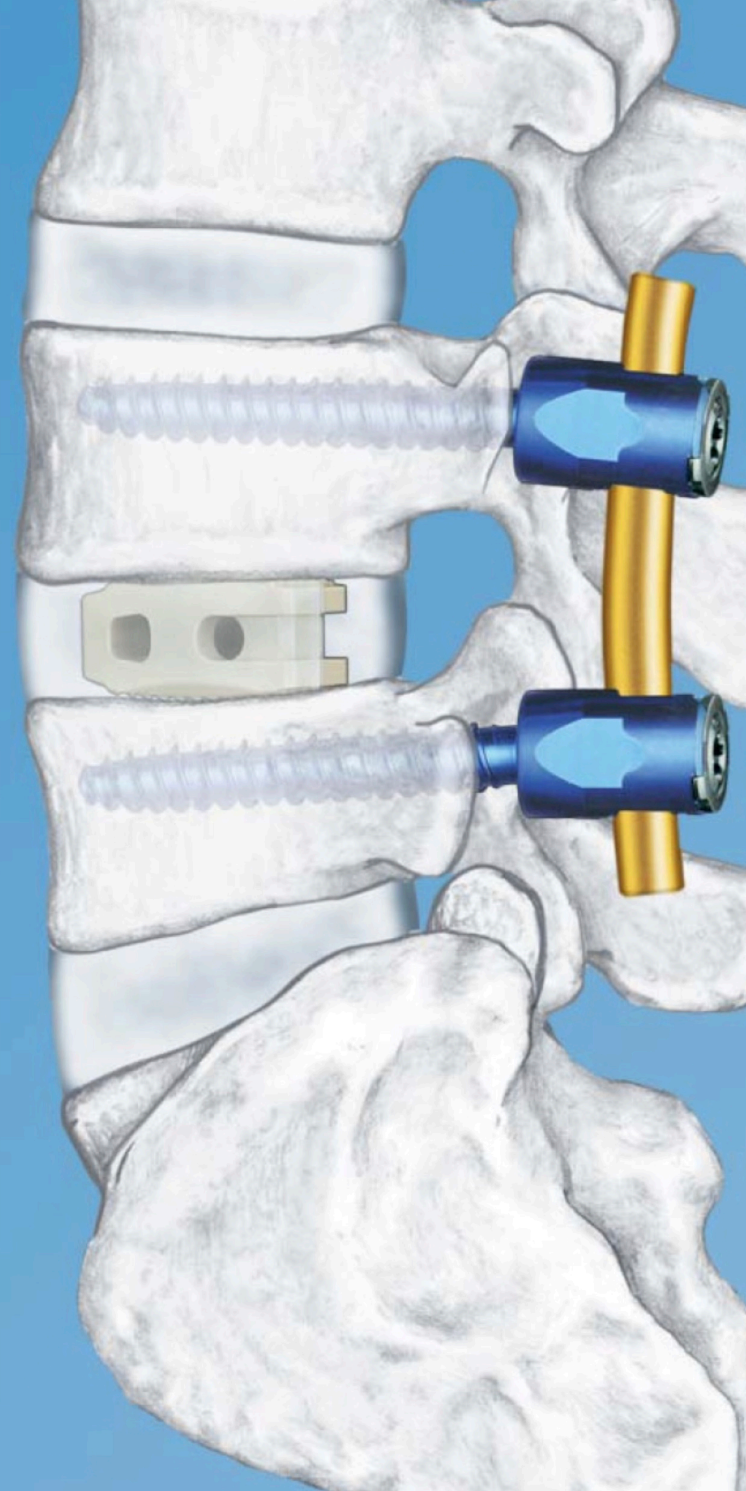
Facetleddet bevarer – 4% udvikler instabilitet



# L4/L5-Dese

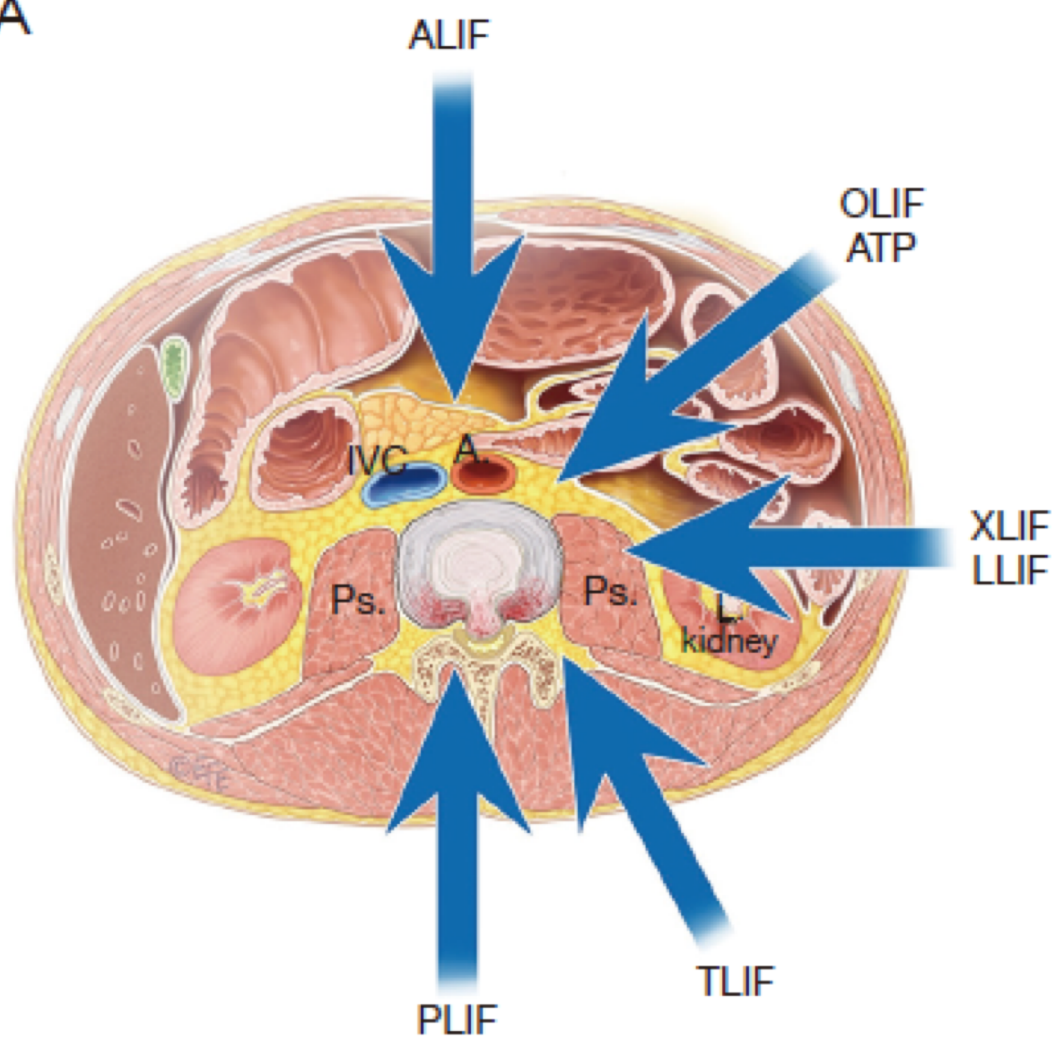
Transforaminal Lumbar Interbody Fusion

- Pedikelskruer
- Stave
- Diskectomi
- TLIF-Spacer (Opal)
- Knoglestykker evt. transplantat

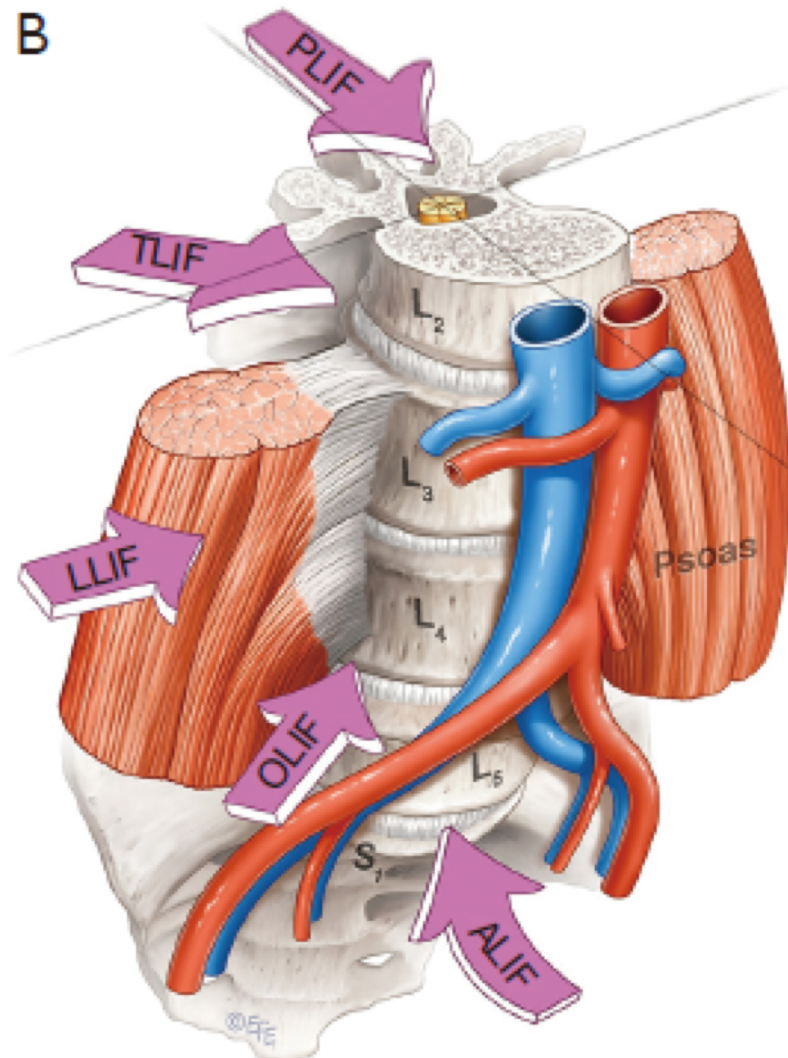




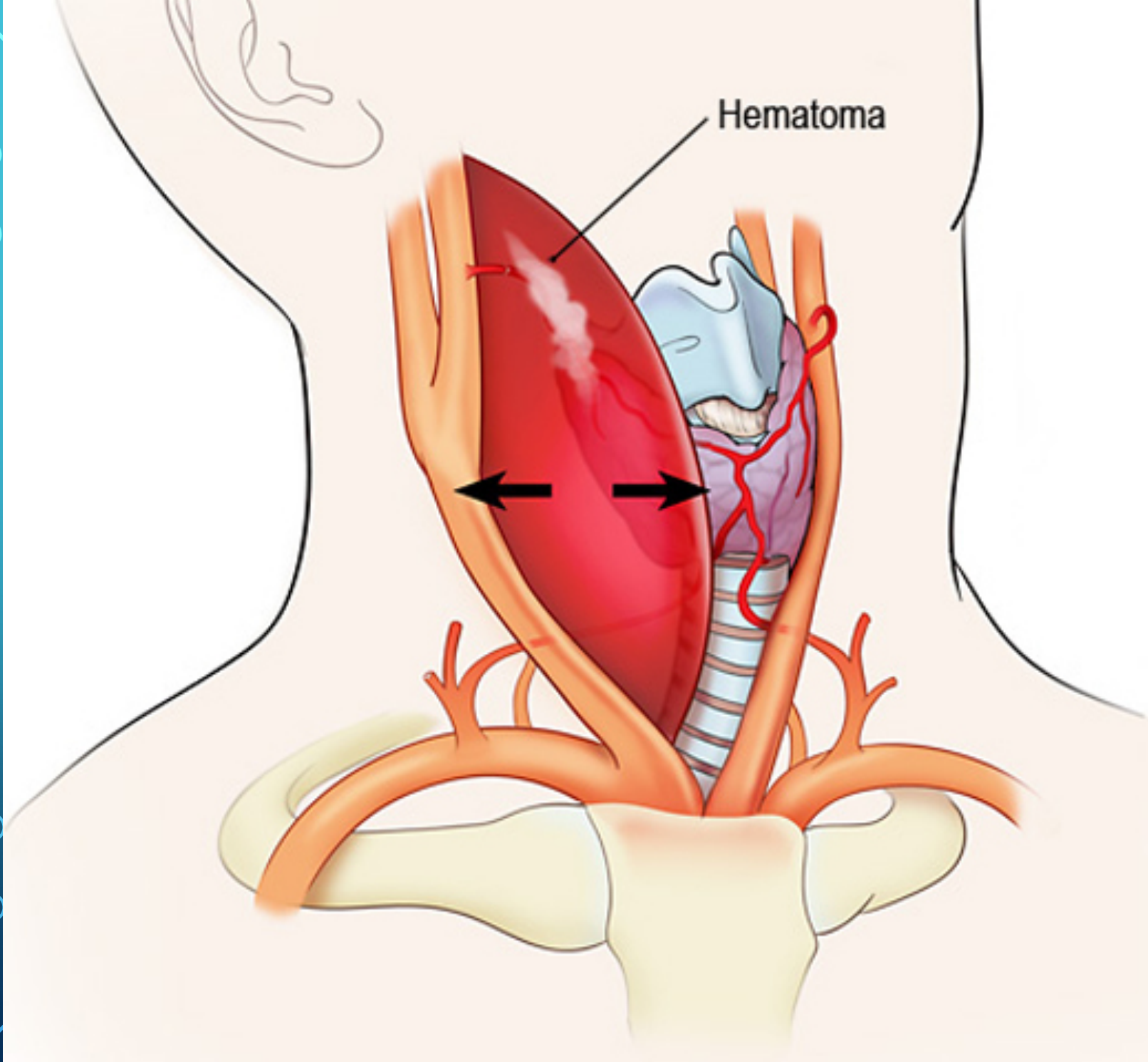
A

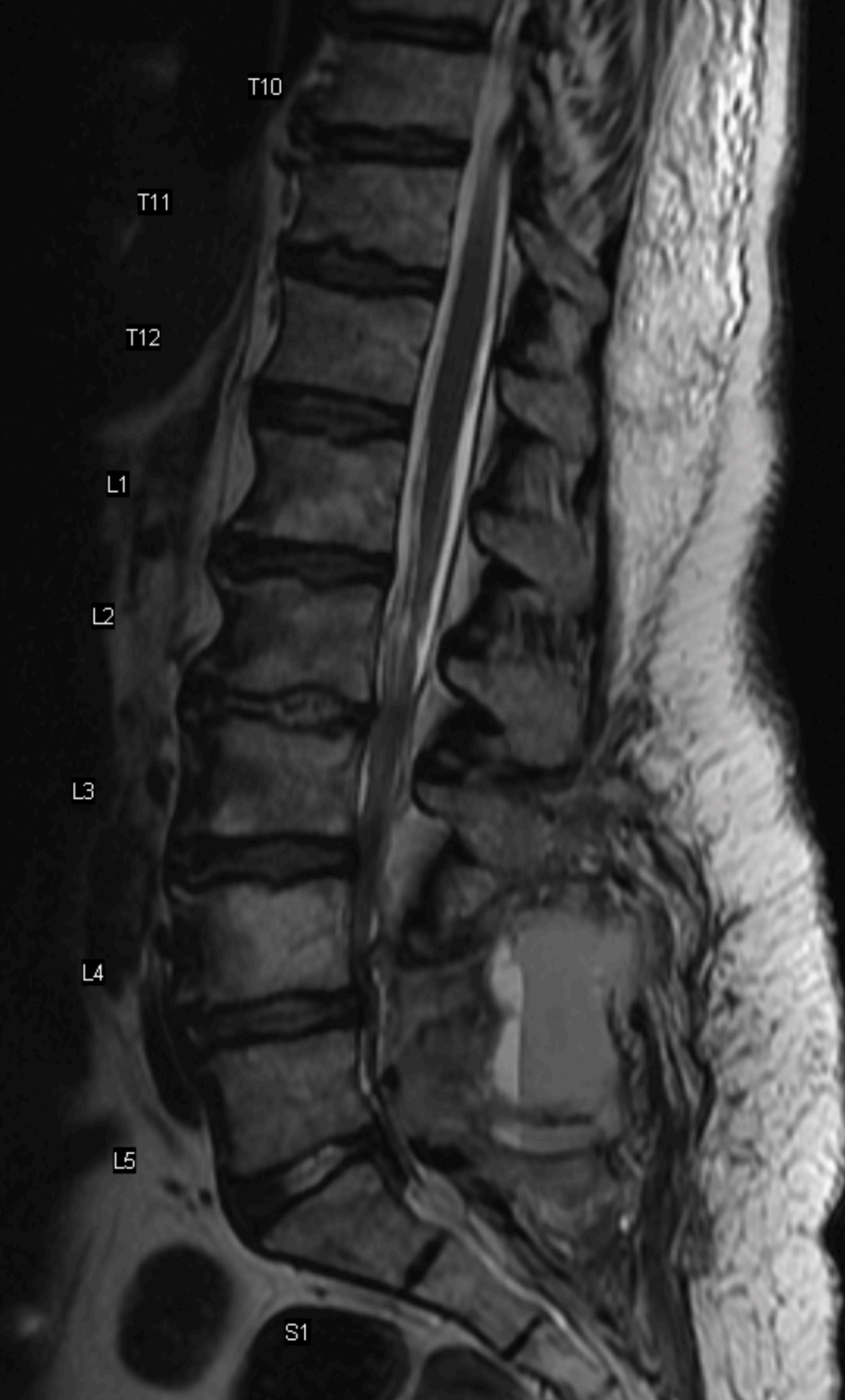


B





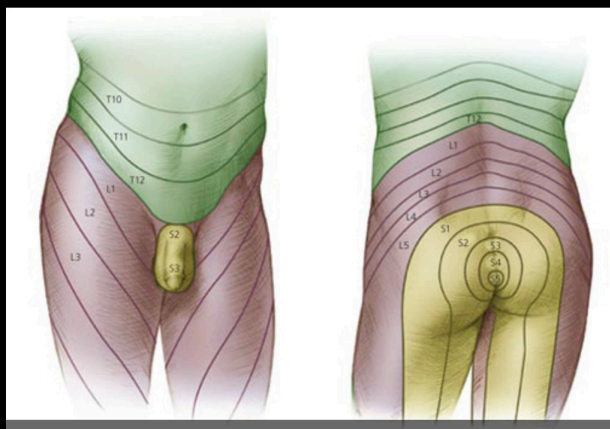
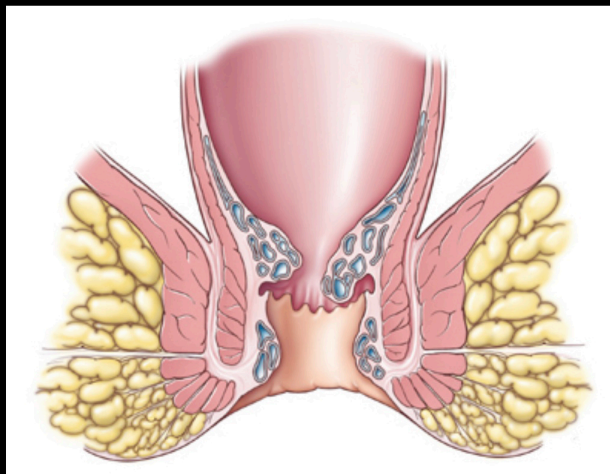
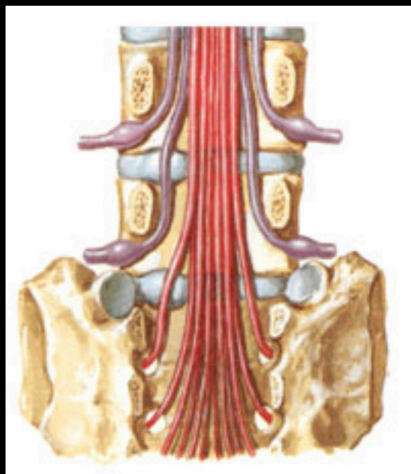






# Cauda Equina Syndromet

Heldigvis utroligt sjældent men alvorligt – giver sfinkterpåvirkning med urinretention (ophævet fornemmelse af blærefyldning, evt. overløbsinkontinens) – slap sfinkter - nedsat perianal sensibilitet – bilat. symp. Akut behandling: Faste, blæreskanning (efter vandladning!), KAD, akut MR eller CT, evt. kontakt til ryghirurg mhp. akut operation (inden 6-24-48 timer)



Klinisk diagnose

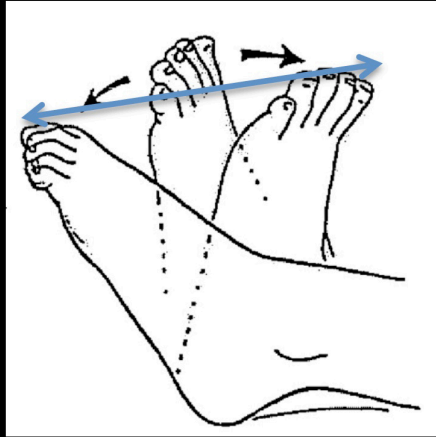


Ingen UR: risikoen for CES er 1/1.000 !!!

Andre årsager til UR:  
Smerter, morfika, BPH



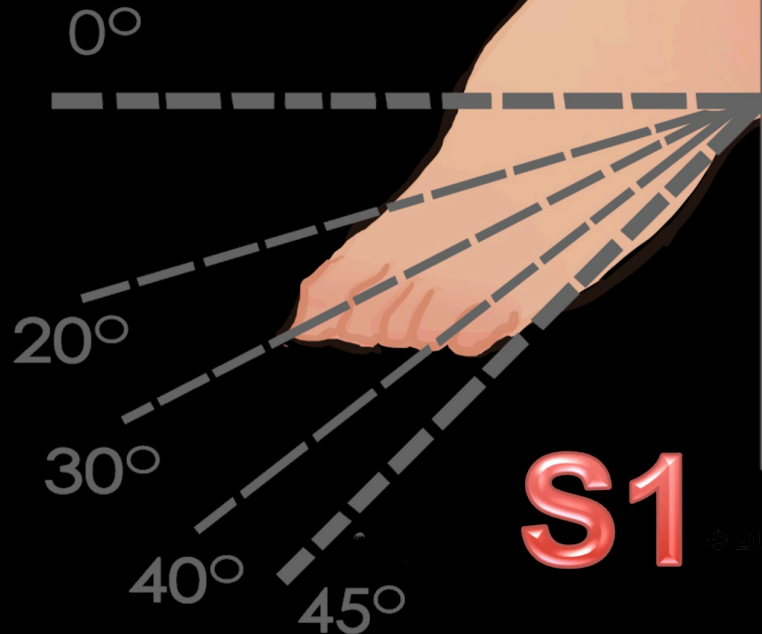
Plantar Flexion



# DROPPFOD

Dorsiflexion

## L5



## S1



© 2016 nmp Smertedæk – Overtal – Varighed?

# Indikatormuskler

Muskel	Nerve	Segment
Deltoides	Axil.	C5, C6
Biceps (albueflexion)	Musculocutaneus	<b>C5</b> , C6
Extensor Carpi (håndledsext.)	Radialis	C5, <b>C6</b> , C7, C8
Triceps (albueext.)	Radialis	C6, <b>C7</b> , C8, T1
Flex. Digitorum Profundus (yd. 3. fing.)	Medianus	C7, <b>C8</b> , T1
Abductor Digiti Minimi	Ulnaris	C8, <b>T1</b>
Iliopsoas (hofteflex.)	Femoralis/plex lumb	L1, <b>L2</b> , L3, L4
Quadriceps (knæext.)	Femoralis	L2, <b>L3</b> , L4
Tibialis Anterior (ankeldorsalflex.)	Peroneus	<b>L4</b> , L5, S1
Extensor Hallucis Longus (DF)	Peroneus	L4, <b>L5</b> , S1
Gastrocnemius (ankelplantarflexion)	Tibialis	<b>S1</b> , S2

ASIA – American Spinal Injury Association => grad 3

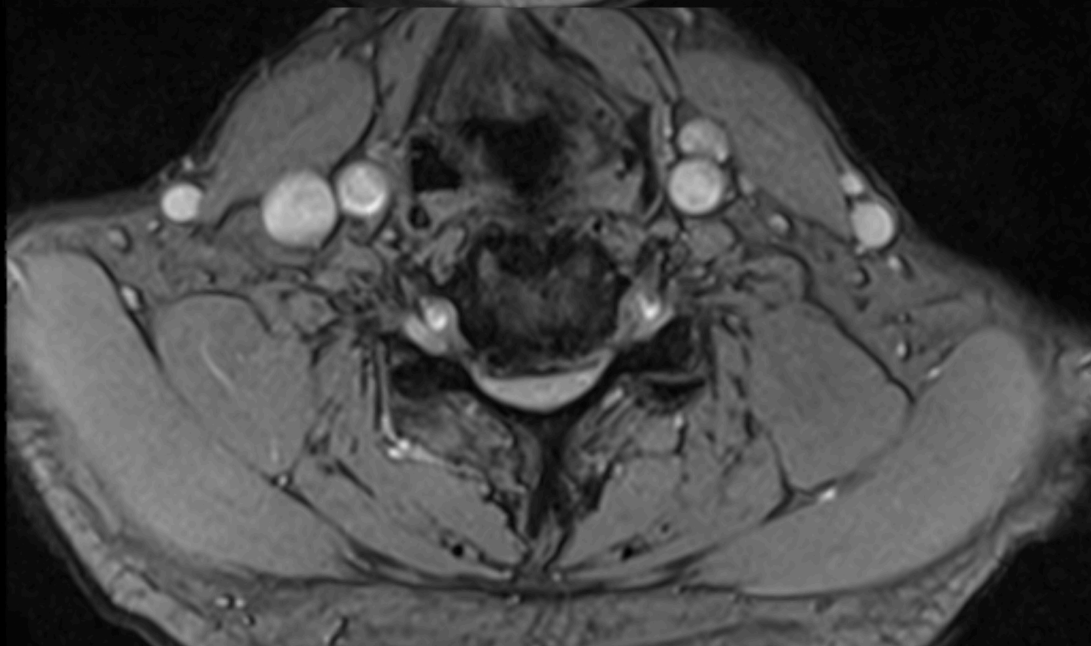
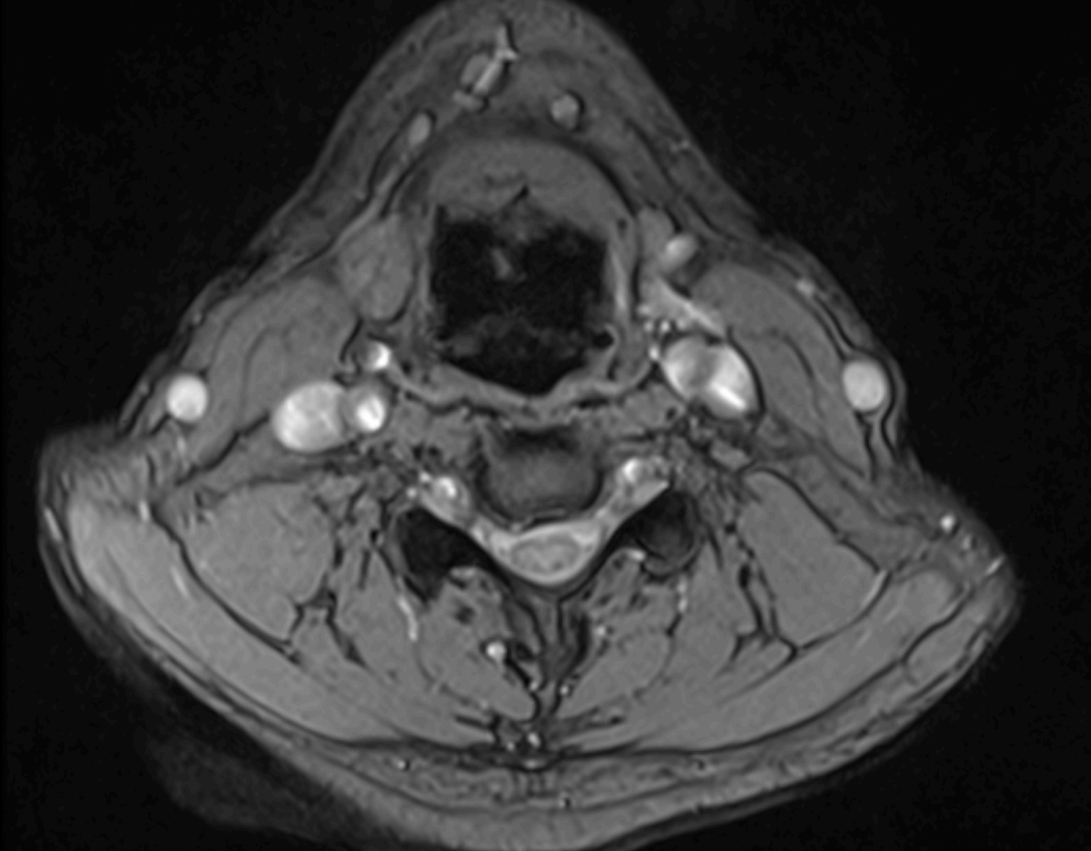




# Muskelkraft og ROM

- Grad 3: overvinder kun tyngdekraften, men IKKE modstand appliceret af undersøgeren, normalt bevægeudslag i horisontalplanet
- Grad 2: kun bevægelse i horisontalplanet, nedsat ROM
- Grad 1: kun synlig muskelkontraktion (ROM=0)
- Grad 0: Paralyse







# Medullært tværnsnitssyndrom

**Motor and descending (efferent) pathways (red)**

## Pyramidal tracts

- Lateral corticospinal tract
- Anterior corticospinal tract

## Extrapyramidal Tracts

- Rubrospinal tract
- Reticulospinal tracts
- Olivospinal tract
- Vestibulospinal tract

**VIB+PROP**

**Sensory and ascending (afferent) pathways (blue)**

**PARESE**

## Dorsal Column Medial Lemniscus System

- Gracile fasciculus
- Cuneate fasciculus

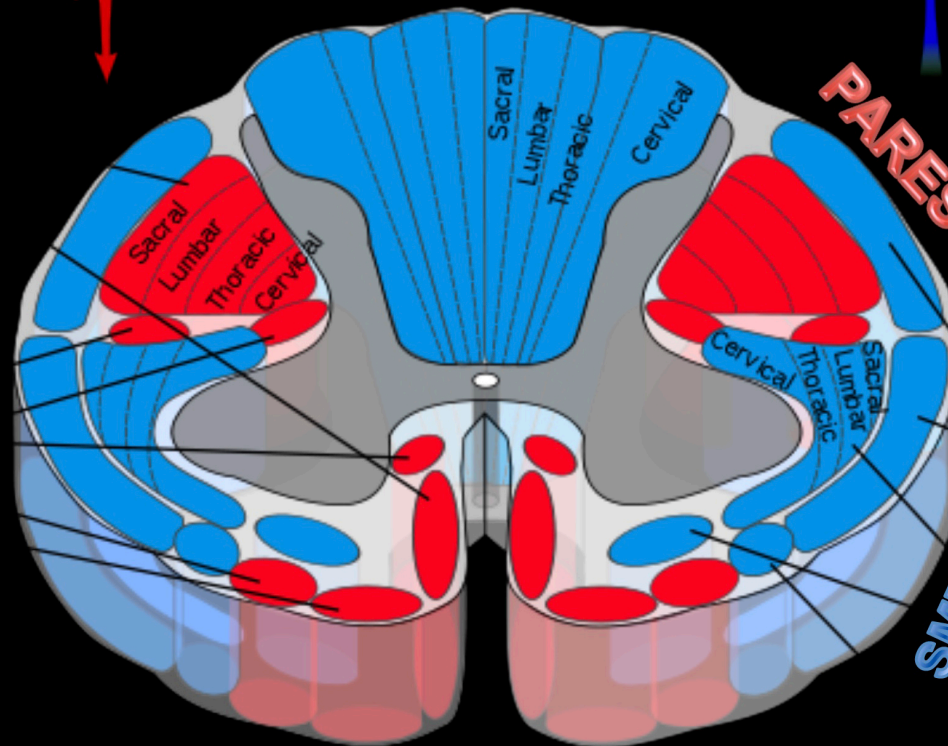
## Spinocerebellar Tracts

- Posterior spinocerebellar tract
- Anterior spinocerebellar tract

## Anterolateral System

- Lateral spinothalamic tract
- Anterior spinothalamic tract

Spino-olivary fibers



## KOMPLET

Totalt bortfald udfor og nedenfor læsionen med skarp sensibilitetsgrænse

## PARTIELT

Halvsidigt (Brown-Séquard): smt+tmp krydser  
Anterior (SAS) eller posterior  
Centralt (OE) eller blandet

# 1. eller 2. neuron?

## CNS: UMN/supran.

- Tetra/paraparese
- Sensibilitetsgrænse
- Hyperrefleksi
- Fodklonus
- Spastisk tonusøgning
- Babinskis tåfænomen
- Hoffman's refleks
- Lille blære
- Evt. let atrofi

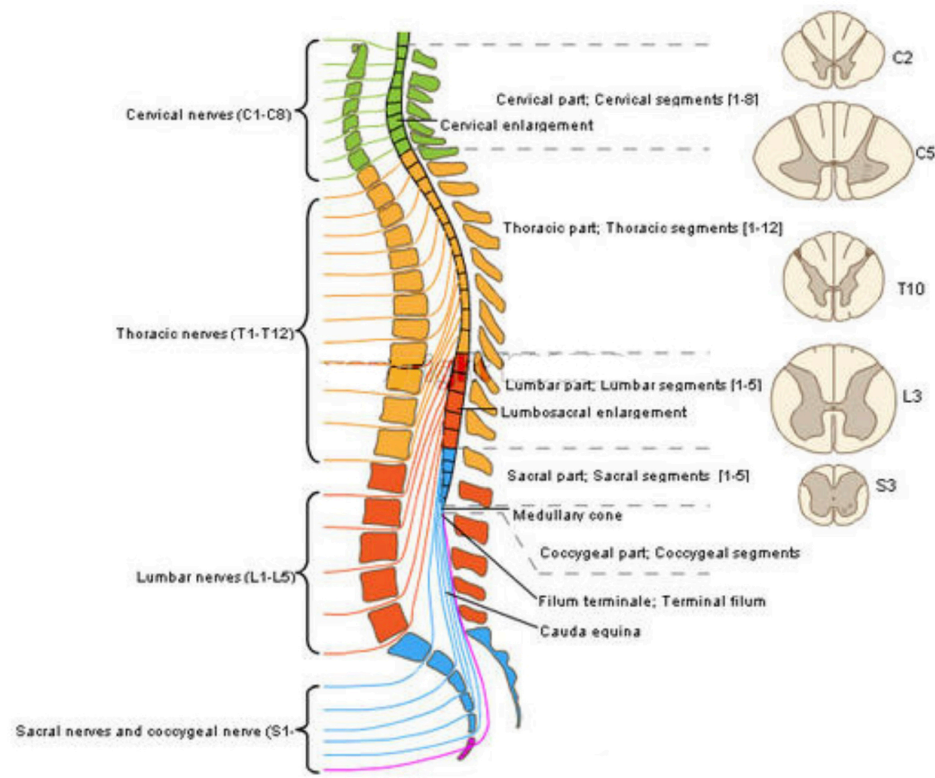
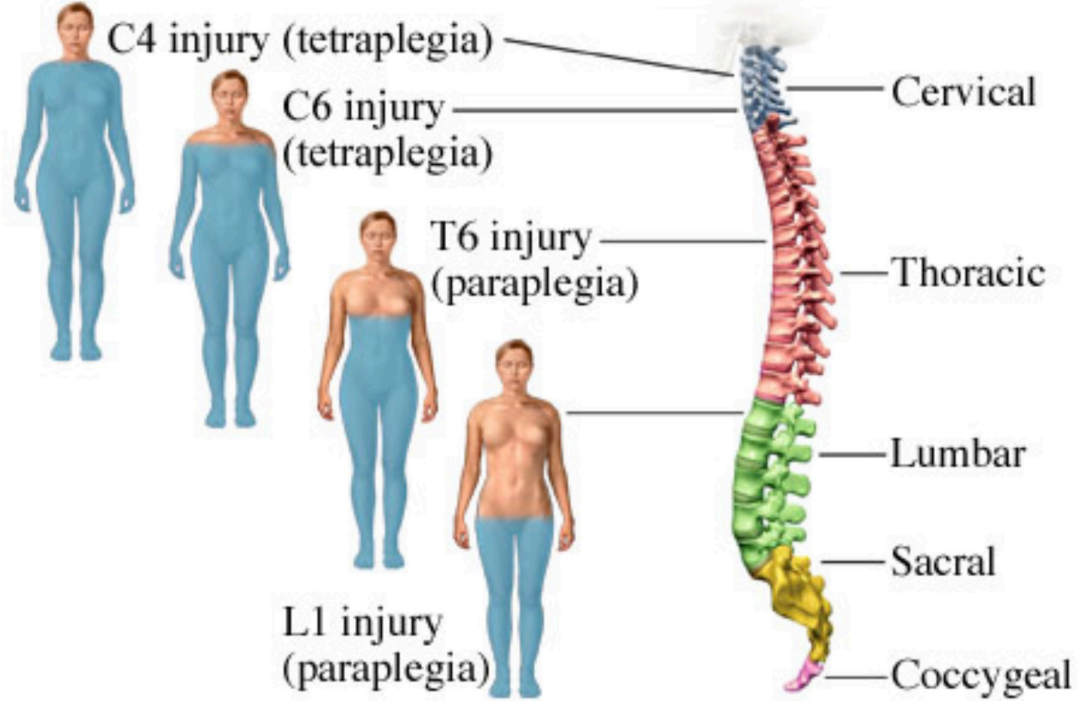
## PNS: LMN/infran.

- Slap (mono)parese
- Dermatomaafgræns.
- Hyporefleksi
- Fascikulationer
- Svær muskelatrofi
- CES: Stor blære

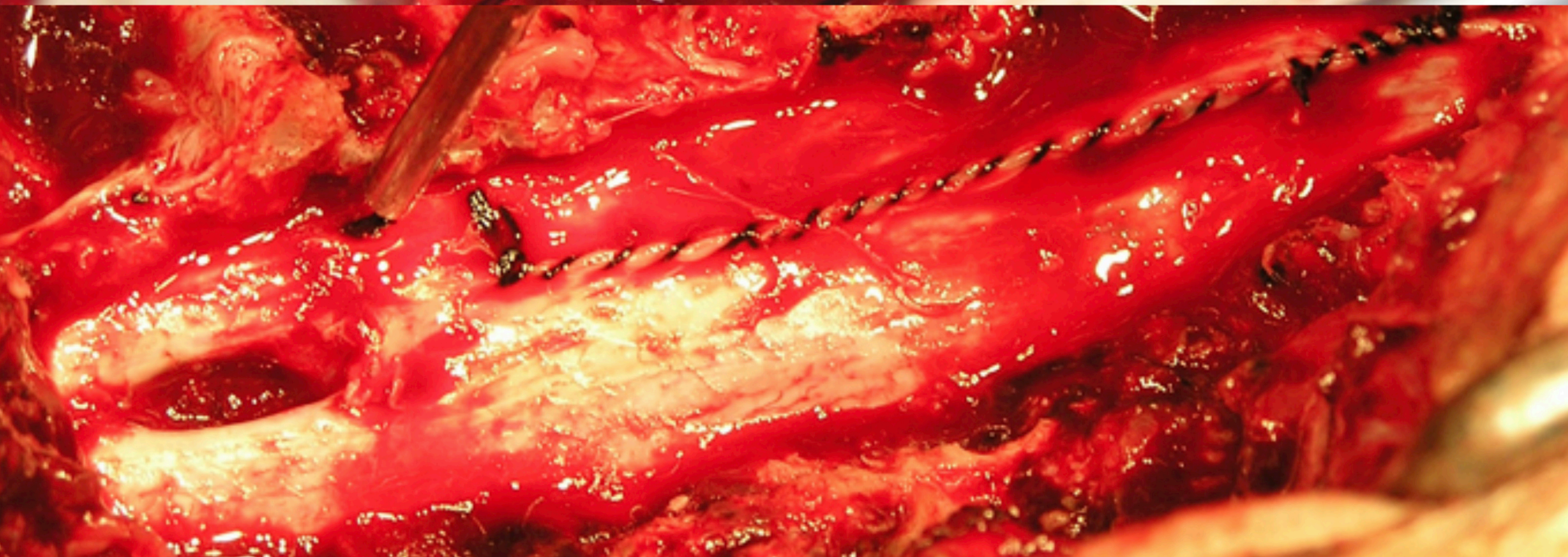
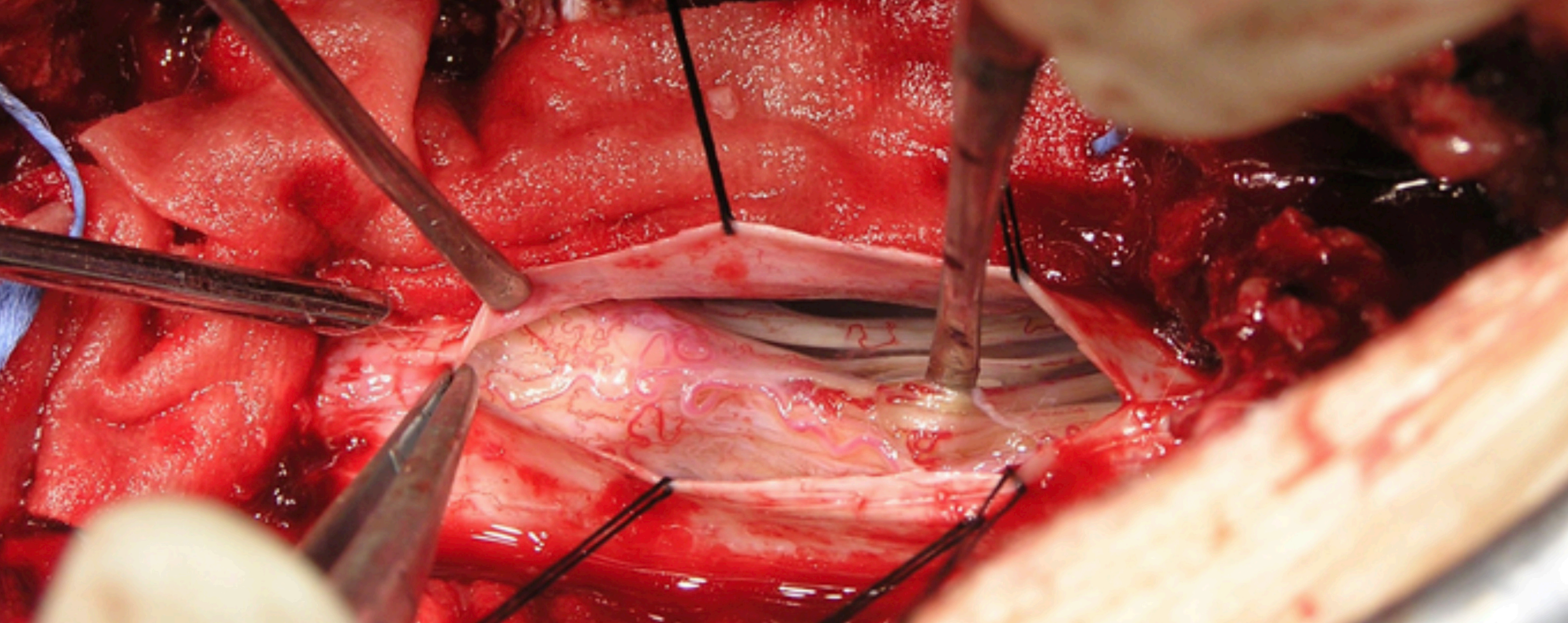




Tetraplegi  $\geq$  T1









# Symptoms of Meningitis

## Central

- Headache
- Altered mental status

## Ears

- Phonophobia

## Eyes

- Photophobia

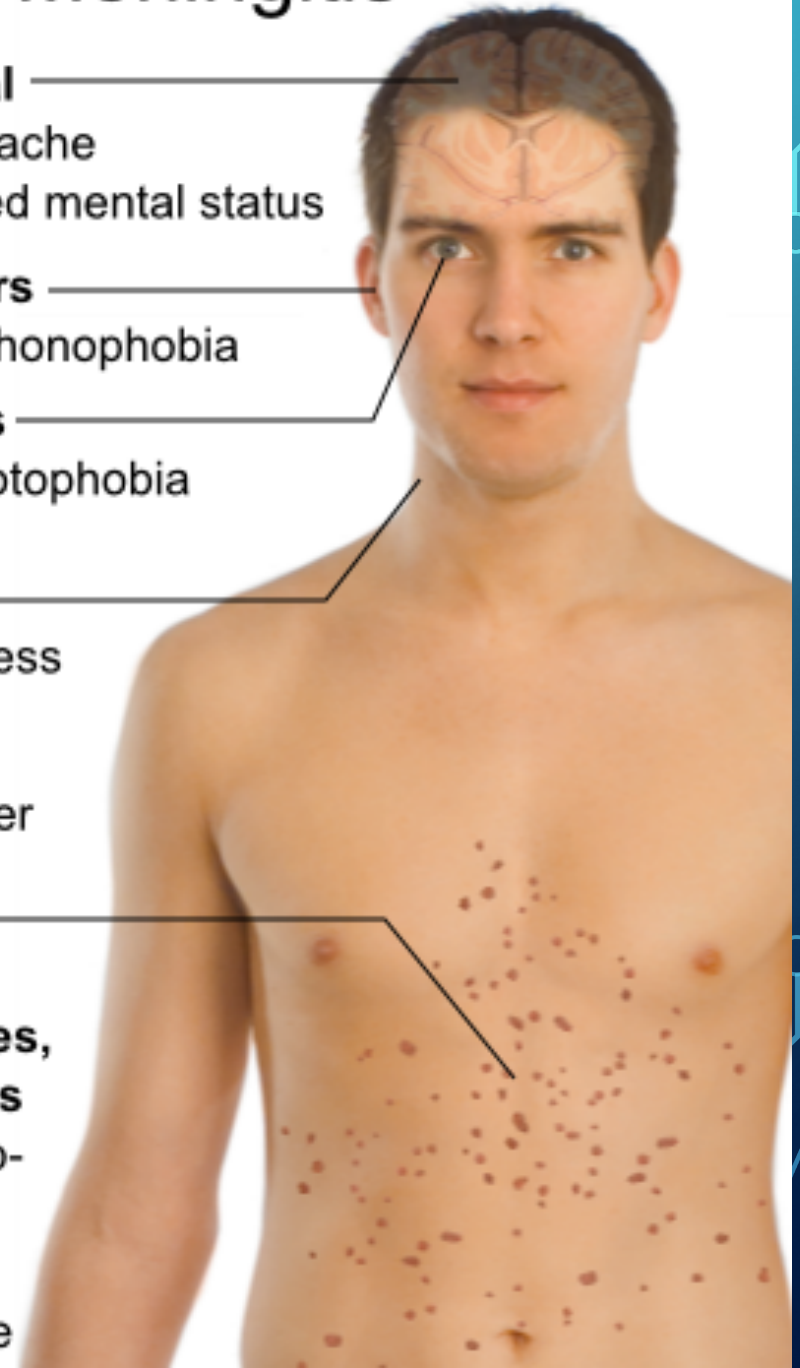
## Neck

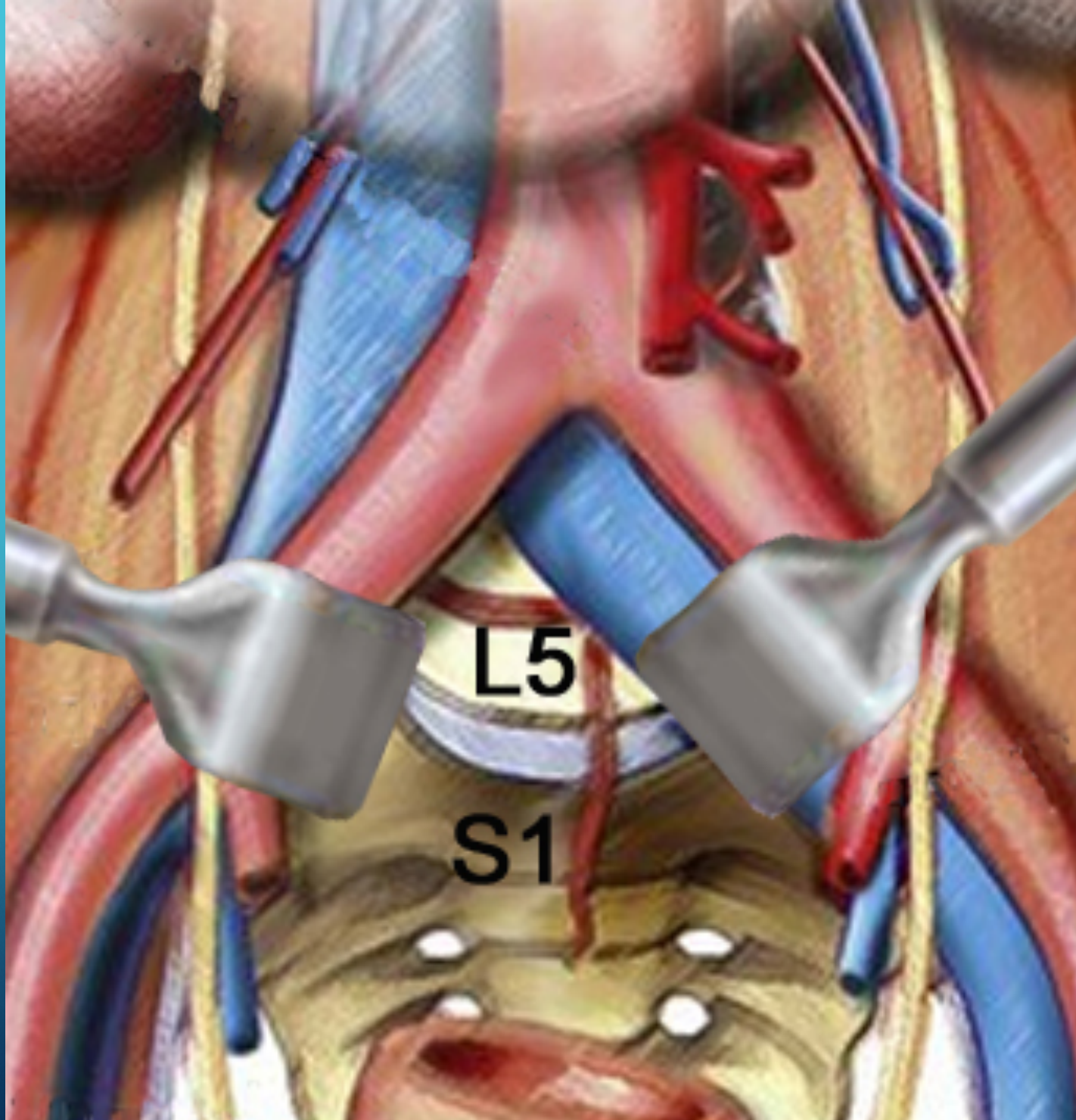
- Stiffness

## Systemic

- High fever

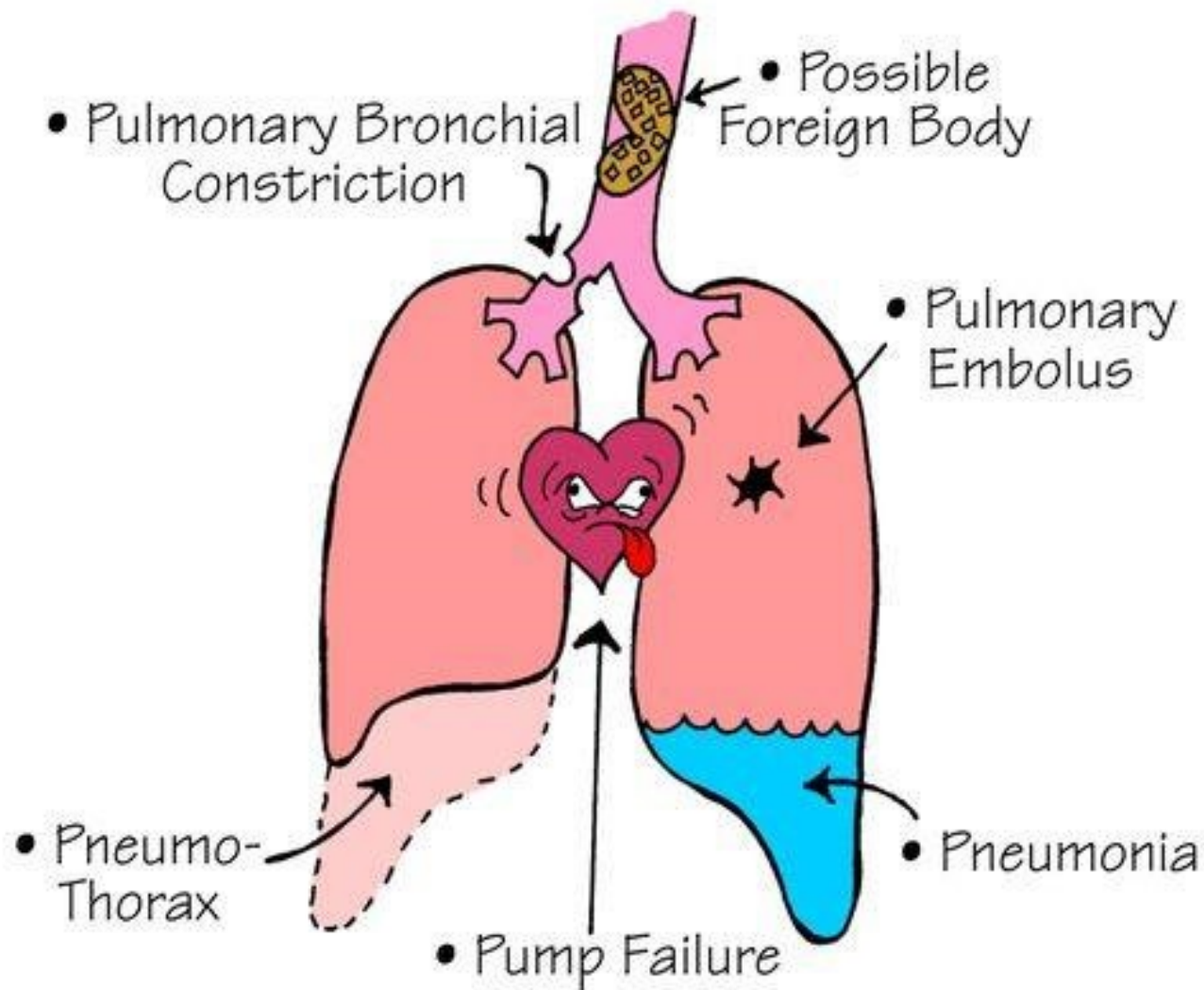
**Trunk,  
mucus  
membranes,  
extremities**  
(if meningo-  
coccal  
infection)  
- Petechiae

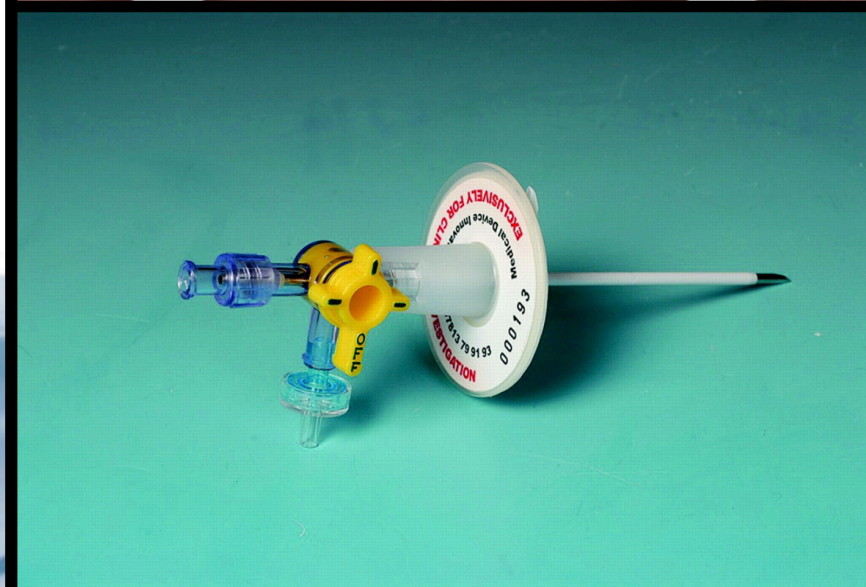
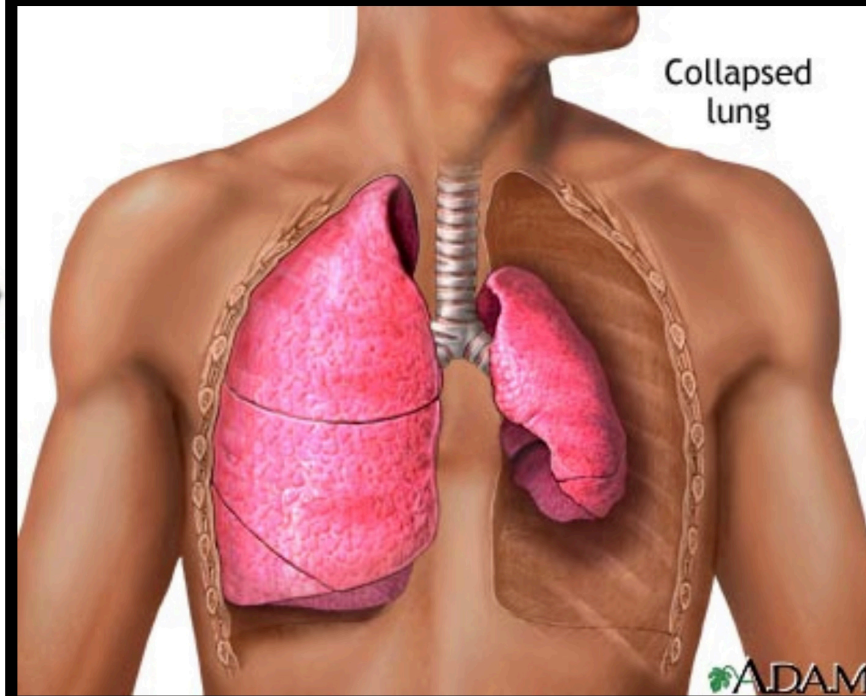
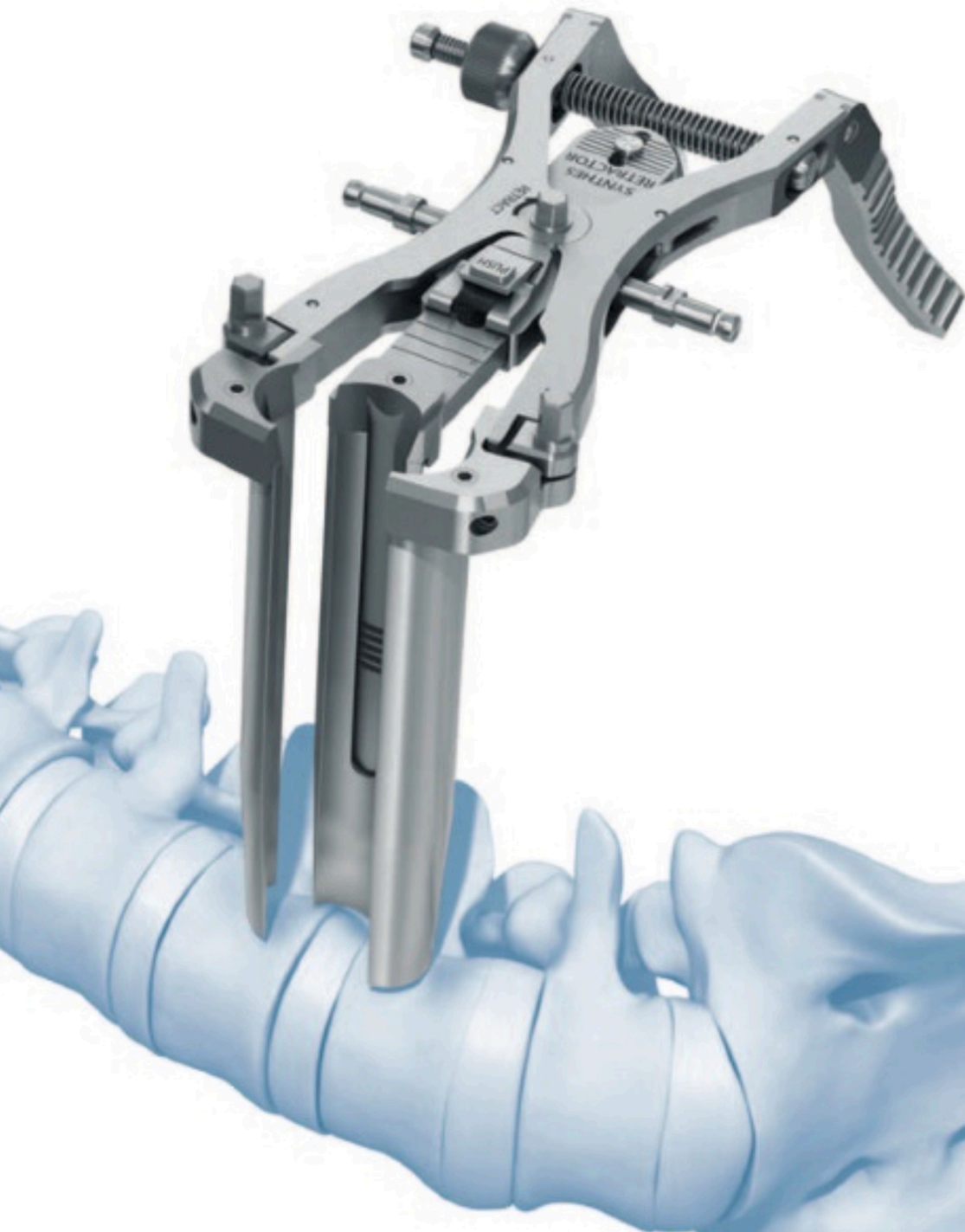






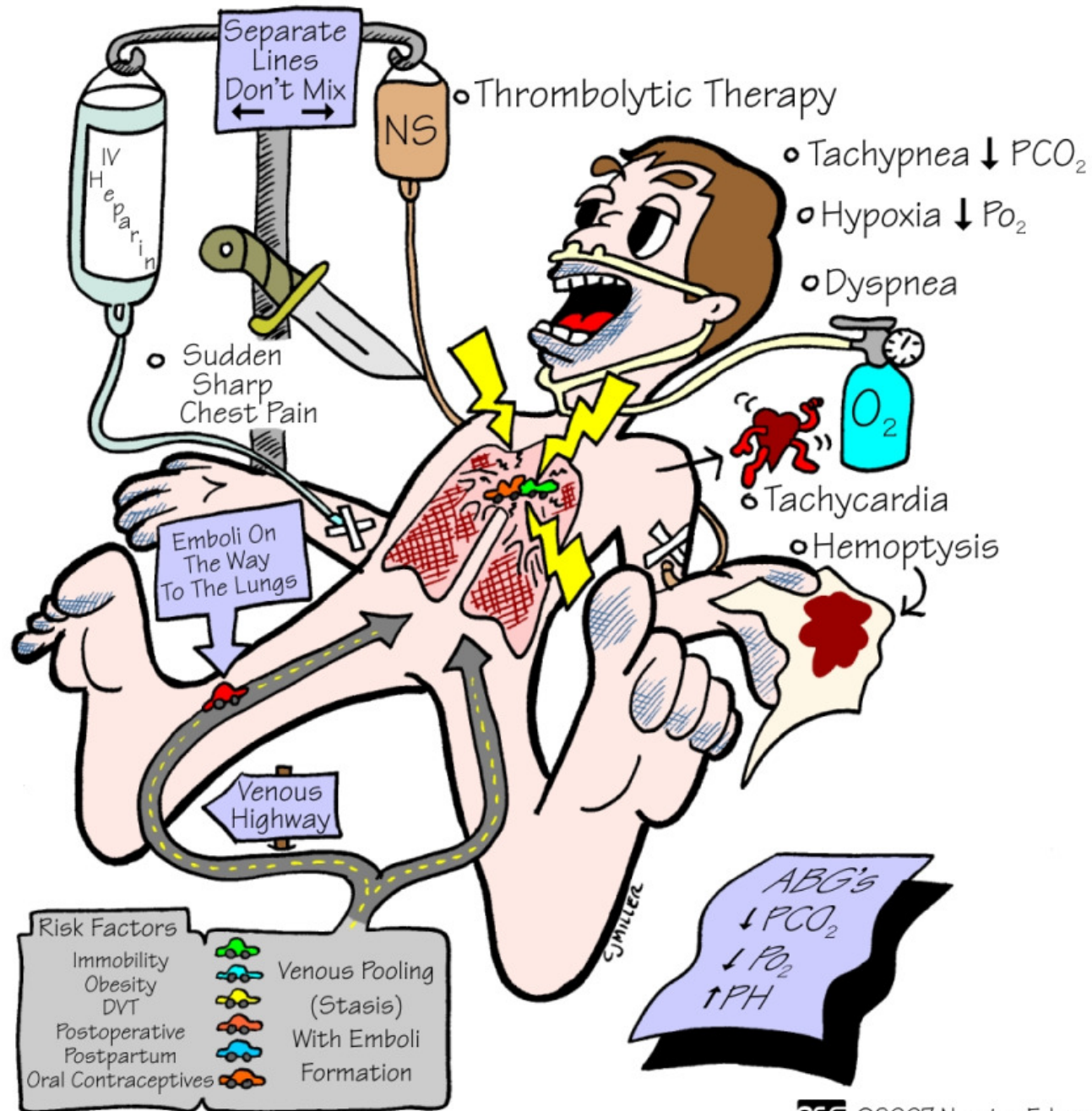
# 6<sup>th</sup> P<sub>S</sub> OF DYSPNEA







# PULMONARY EMBOLUS



# Delirium

- The mnemonic DELIRIUM summarizes common causes of delirium in the older adult:
  - **D**rugs
  - **E**lectrolyte imbalance (dehydration)
  - **L**ack of drugs (withdrawal, uncontrolled pain)
  - **I**nfection (e.g., UTI or pneumonia)
  - **R**educed sensory input (e.g., vision and hearing deficits)
  - **I**ntracranial (e.g. CVA, subdural)
  - **U**rinary retention/fecal impaction
  - **M**yocardial/: **P**ulmonary.

Lishman, William Alwyn. Organic Psychiatry, 3<sup>rd</sup> Ed. Blackwell Science, Inc. Malden Massachusetts, 1998.



## TABLE

### DELIRIUM MNEMONIC

D	Drugs, drugs, drugs
E	Eyes, ears <sup>a</sup>
L	Low O <sub>2</sub> states (MI, ARDS, PE, CHF, COPD) <sup>b</sup>
I	Infection
R	Retention (of urine or stool), Restraints
I	Ictal
U	Underhydration/Undernutrition
M	Metabolic
(S)	Subdural, Sleep deprivation

*Note. MI = myocardial infarction; ARDS = acute respiratory distress syndrome; PE = pulmonary embolism; CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease.*

*<sup>a</sup> Poor vision and hearing are considered risk factors more than true causes but should be amended or improved, if possible. Cerumen is a common cause of hearing impairment. <sup>b</sup> Low O<sub>2</sub> states does NOT necessarily mean hypoxia, rather it is a reminder that patients with a hypoxic insult (e.g., MI, stroke, PE) may exhibit mental status changes with or without other typical signs/symptoms of these diagnoses.*

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