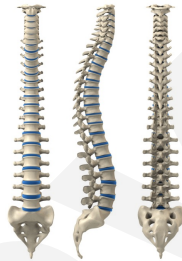


Spinal Anatomy and Approaches – Videos / Misc



Mr M J H McCarthy
Consultant Spinal Surgeon



Growth

- Primary Ossification
 - Centrum (body) and 2 halves of arch form from mesoderm in utero by 14th week
 - Fuse at age 6-8
- Secondary Ossification
 - Epiphyseal ring apophyses, tips of spinous and transverse processes, tips of articular processes, lumbar mamillary processes ossify at puberty
 - Fuse by age 25

Development XR

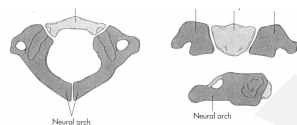
- < 6 months
 - C1 invisible, synchondroses open, VBs wedged anteriorly, no lordosis
- 1 yr
 - Body C1 visible
- 3 yrs
 - Spinous process synchondroses fuse, dens ossifies
- 3-6 yrs
 - Neurocentral body and C2-odontoid synchondroses fuse, anterior wedging of VBs resolves

Development XR

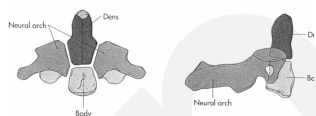
- 8 yrs
 - Pseudosubluxation and predental widening resolve, lordosis normal
- 12-14 yrs
 - 2° ossification centres spinous process tips, summit ossification odontoid fuses, sup / inf epiphyseal rings on VBs
- 25 yrs
 - Secondary ossification centres on tips spinous porcesses fuse, sup / inf epiphyseal rings on VBs fuse

Ossification Centres

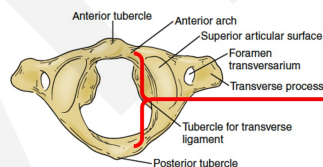
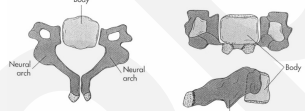
C1



C2

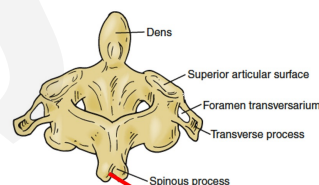


C3-L5

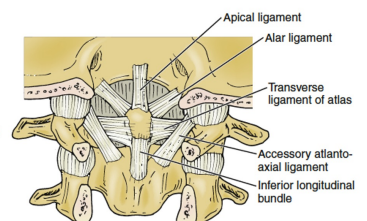


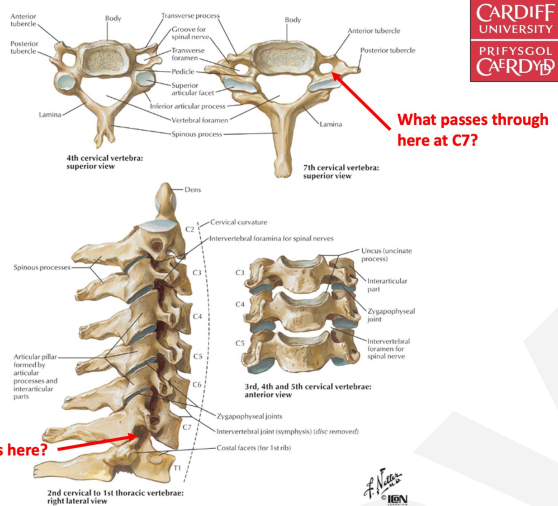
Steel's Rule of Thirds
1/3 Dens
1/3 Cord
1/3 Space

50% Cervical Movement Occurs at C0-2

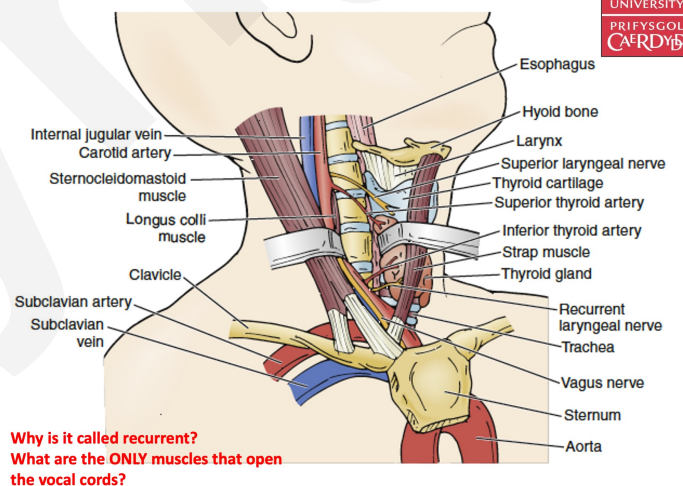
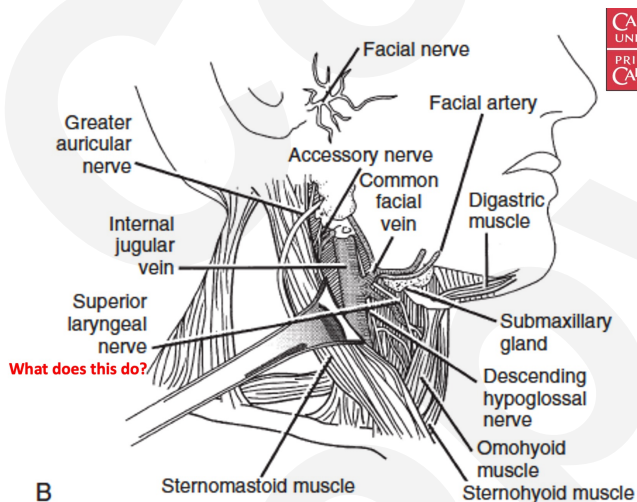
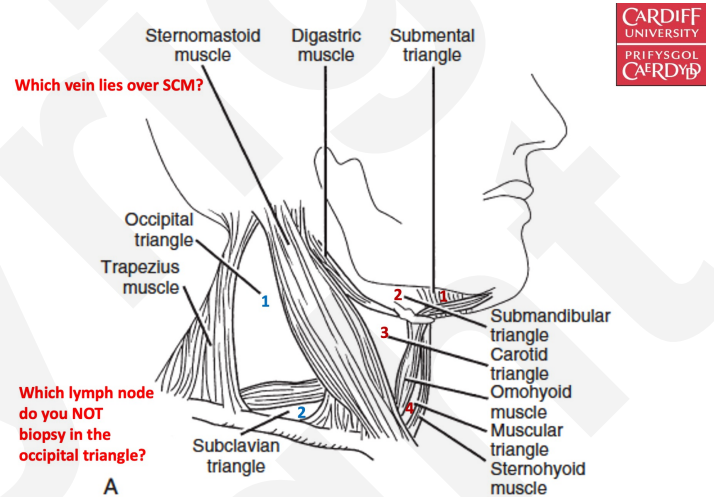
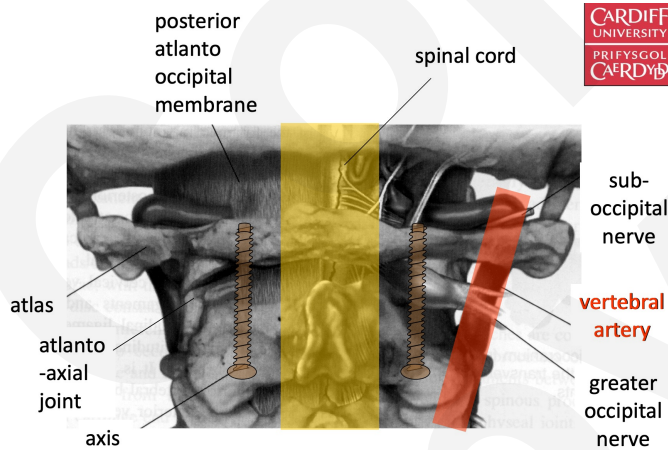


Feel your own!





Name the structures at risk in this procedure



What happens if you damage this?

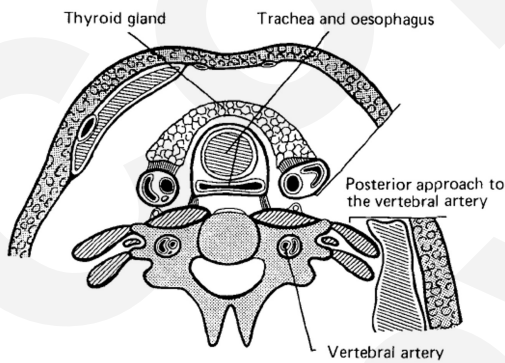
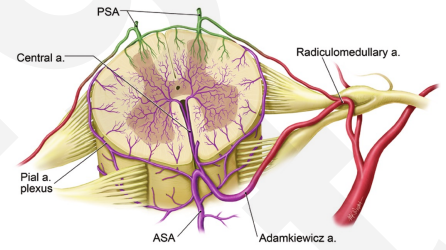
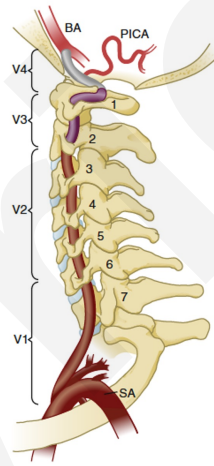
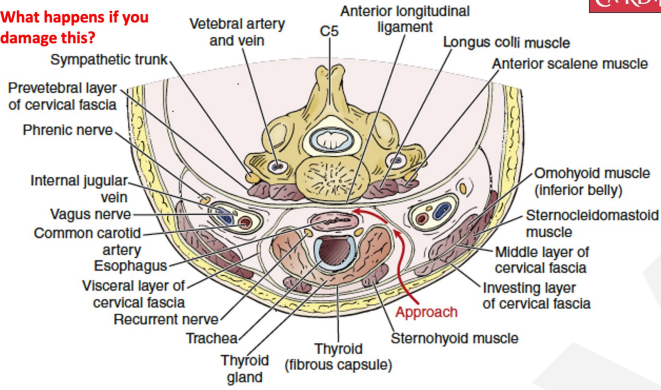


Figure 1 Henry's posterior approach. The vertebral artery is shown within the osseous vertebral canal

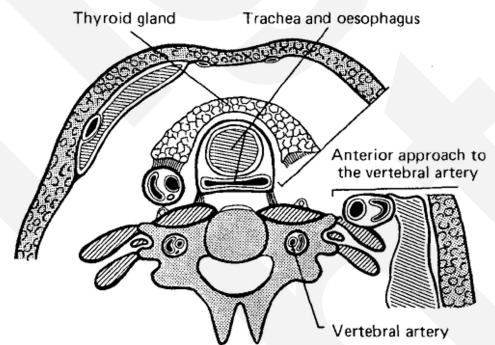
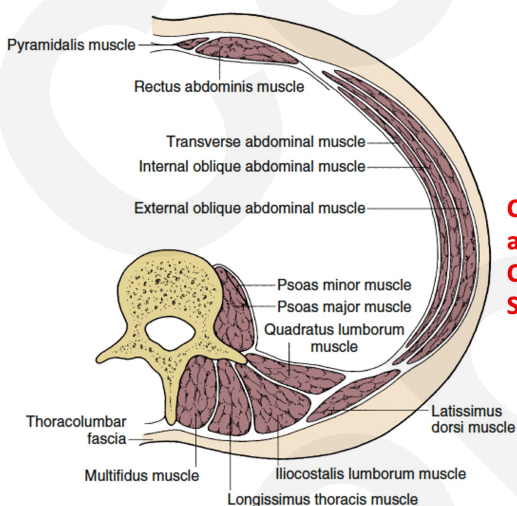


Figure 2 Modified Henry's approach, anterior



**CORE MUSCLES
and
CORE TRUNK
STABILITY**

Fillet Steak Muscle?

Muscles of the Back

- Superficial
 - Iliocostalis, longissimus, spinalis
 - Aka ERECTOR SPINAE
- Intermediate
 - Semispinalis (capitis, cervicis, thoracis), levator costarum, **multifidus**
 - Aka TRANSVERSOSPINALES
- Deep
 - Interspinalis, intertransversalis, rotatores
- Supplied posterior primary rami

Muscles of the Back

- Covering Muscles
 - Splenius capitis
 - Serratus posterior superior
 - Rhomboid minor
 - Rhomboid major
 - Serratus posterior inferior
 - Trapezius
 - (laterally – latissimus dorsi and serratus anterior)
 - (anteriorly – psoas, quadratus lumborum, abdominal muscles)

