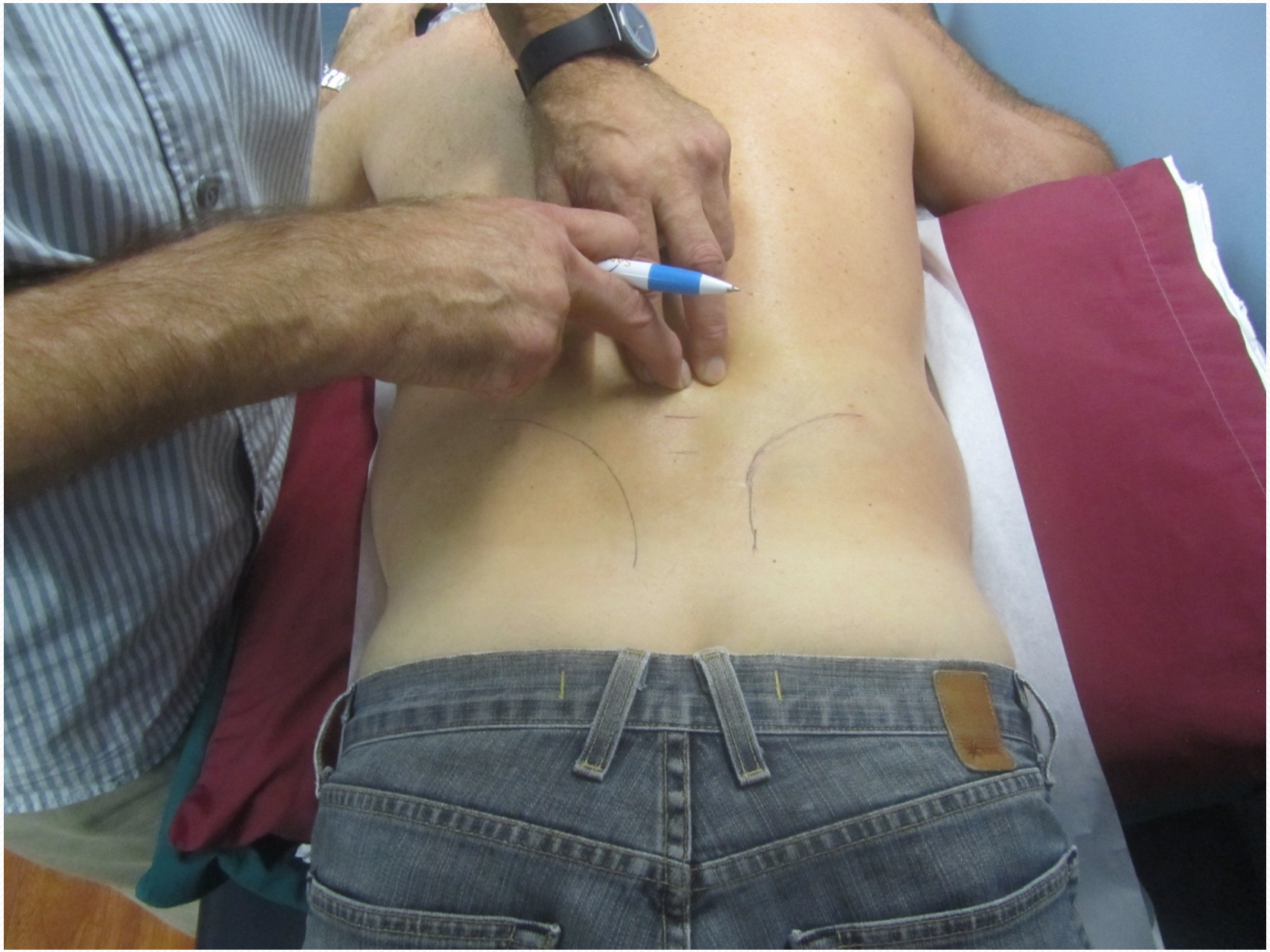
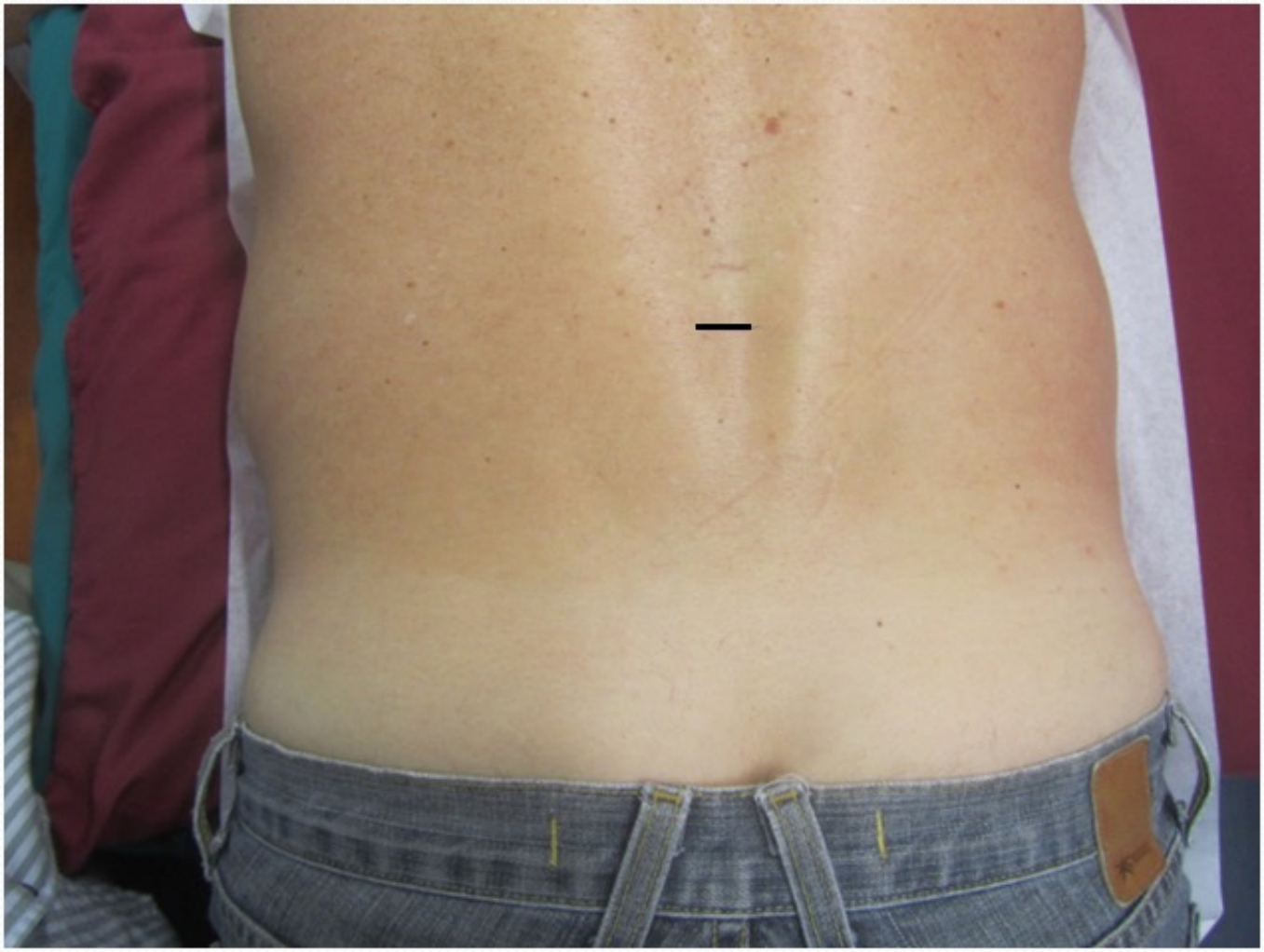
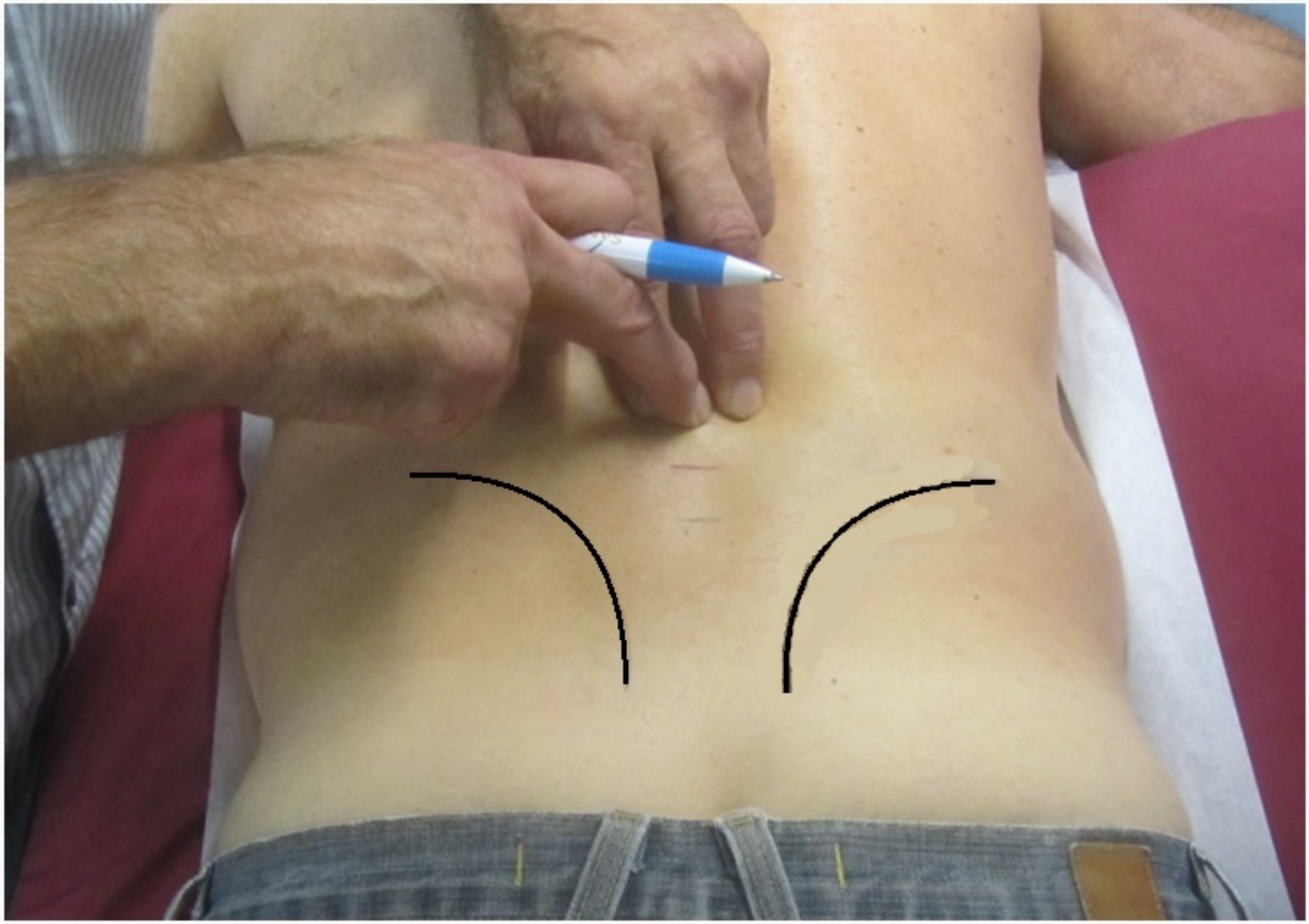
Locate Interspace



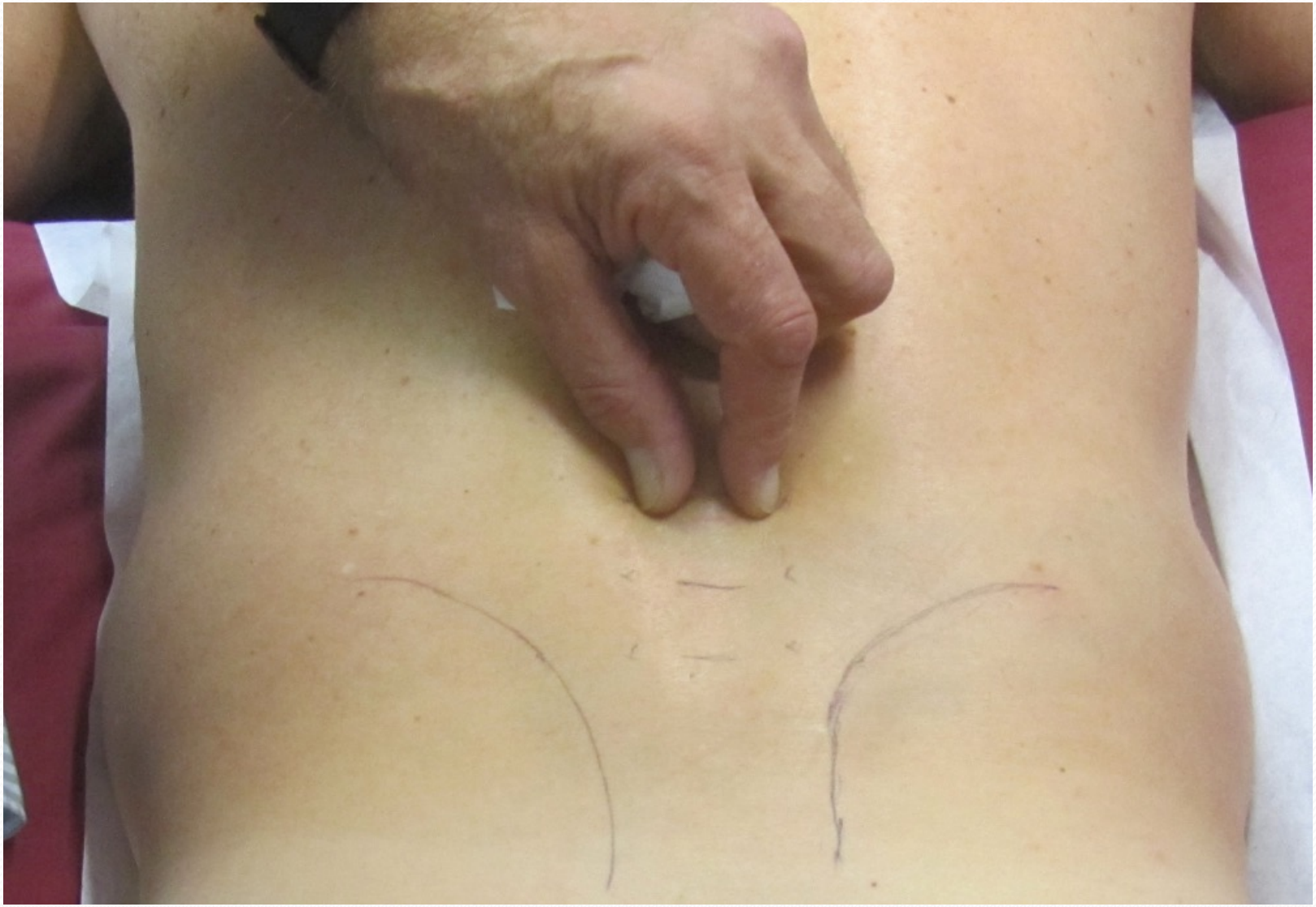
Mark the L4-5 Interspace



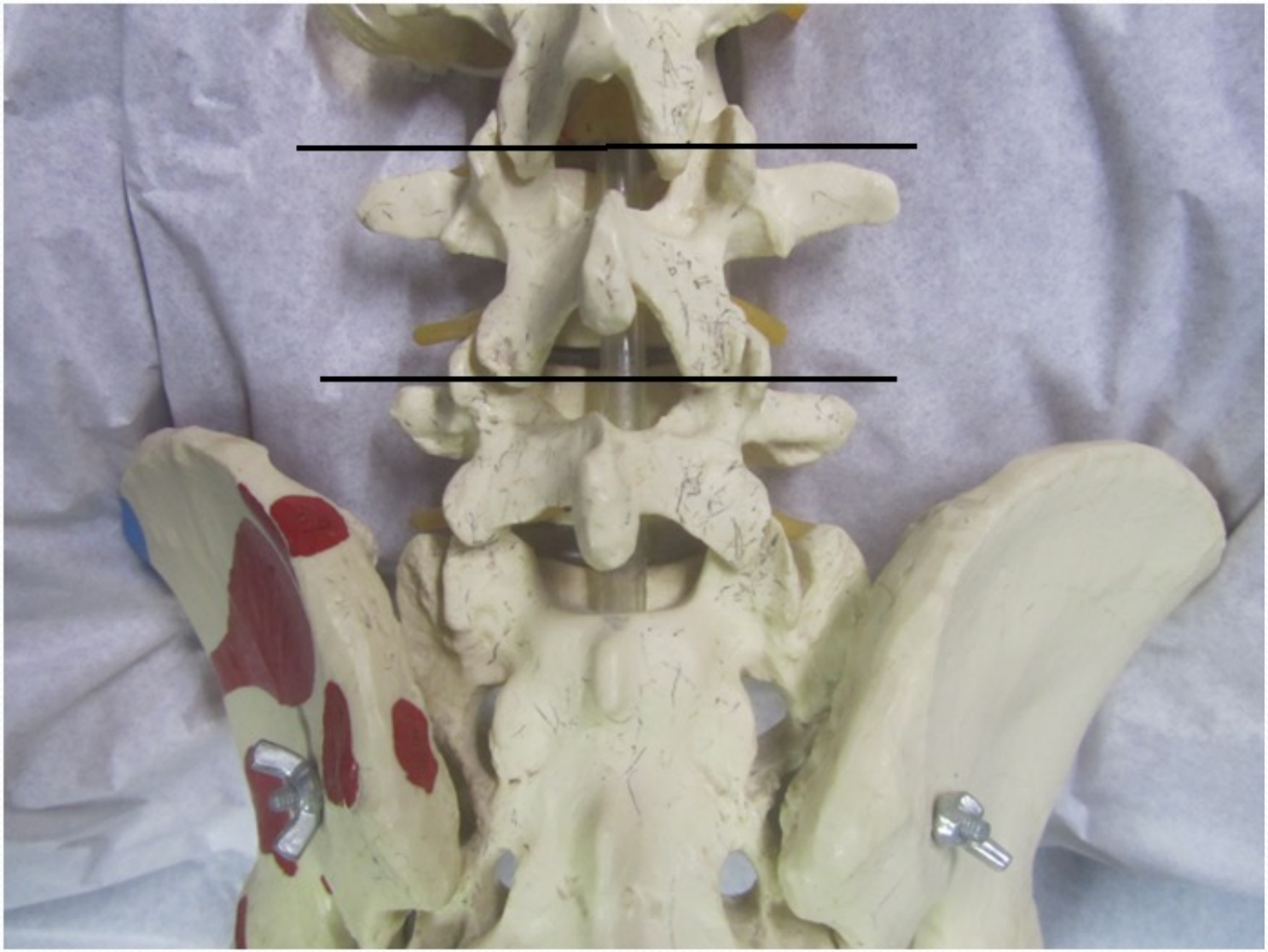
Draw in other Interspaces and iliac crest



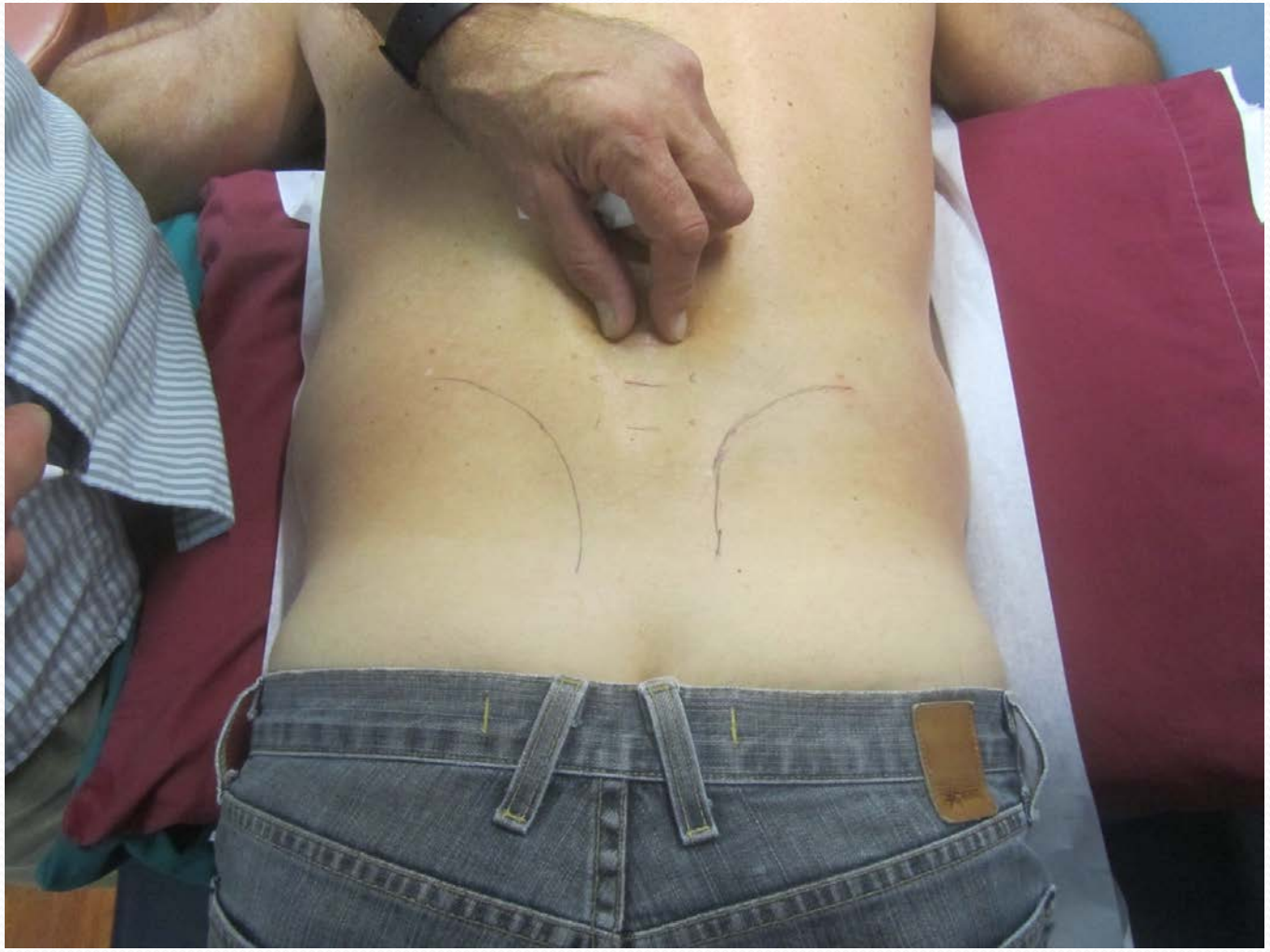
Facet joints are a finger breath out from the Spinous Process



Facet joints are 1 FB lateral and at the level of the Interspinous Space



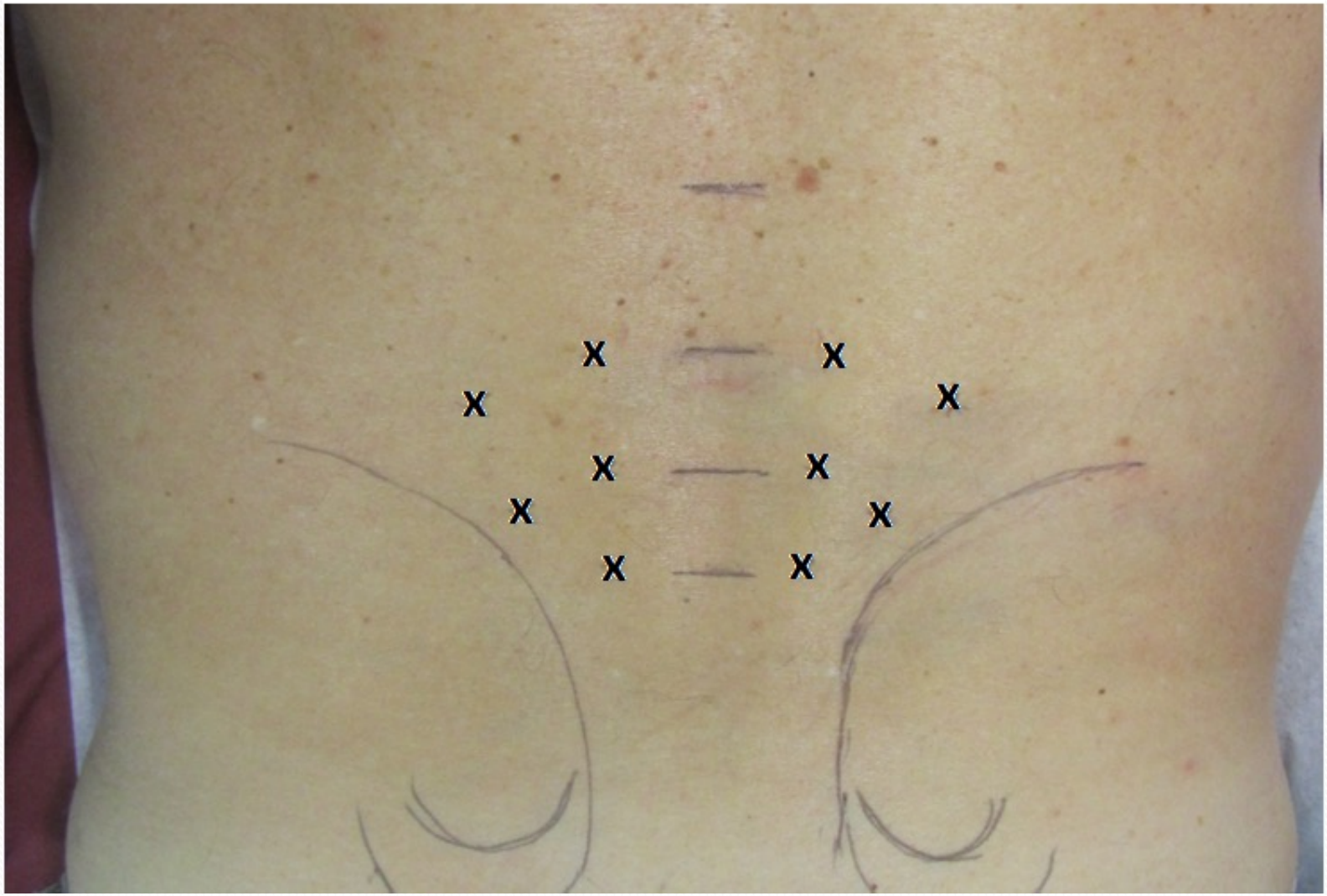
Pinch and Mark



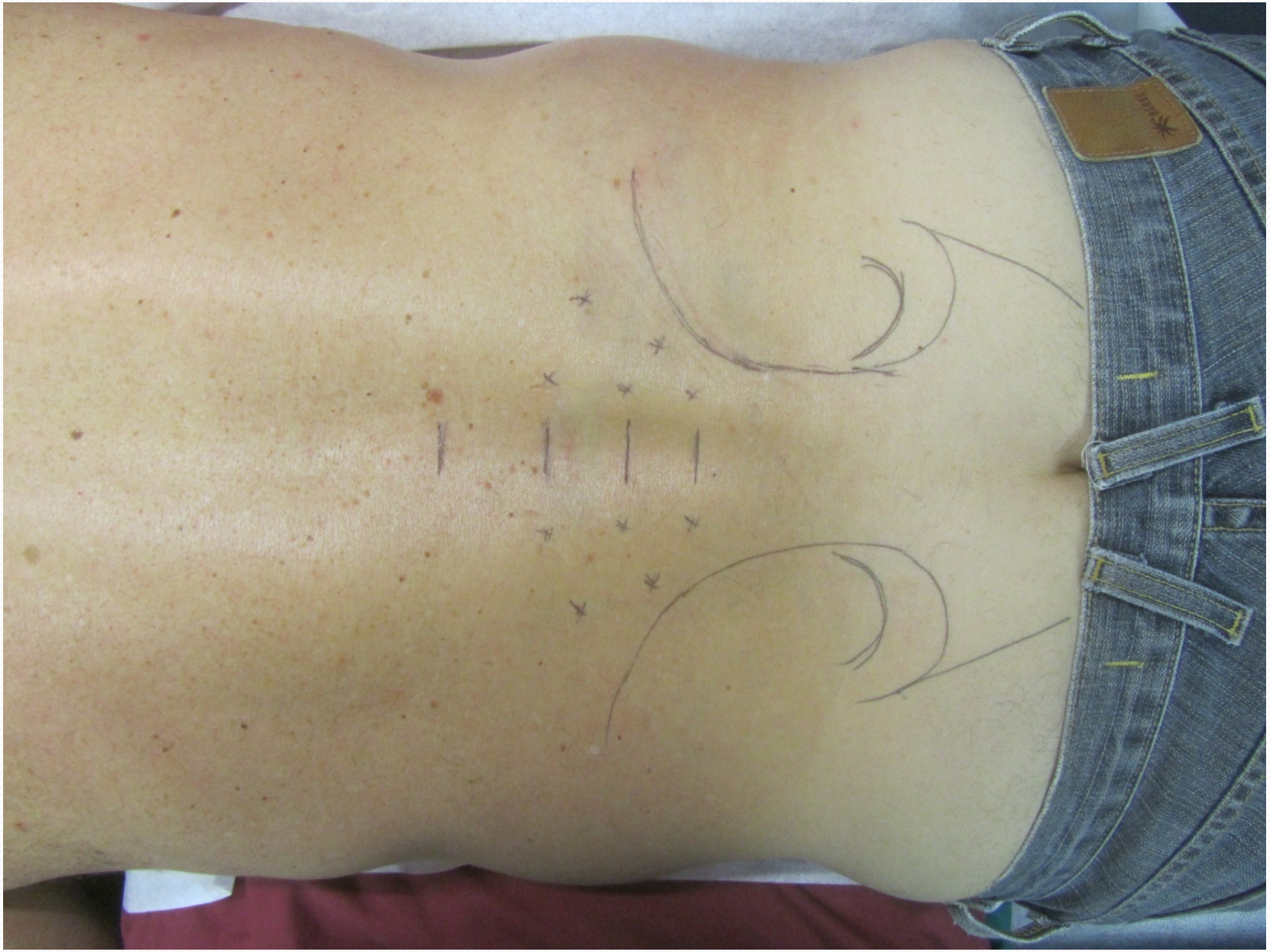
Transverse Processes

- Find the interspace at two adjacent levels
- Measure 2/3rds up from the lower to higher
- Then move lateral to the edge of paraspinous muscle for the insertion point.
- Aim medially at 45 deg and at 5 to 7 cm you will hit tip of transverse process.
- Search for TP at 2 degree movements sup/inf., then medial 2 degrees and again sup/inf

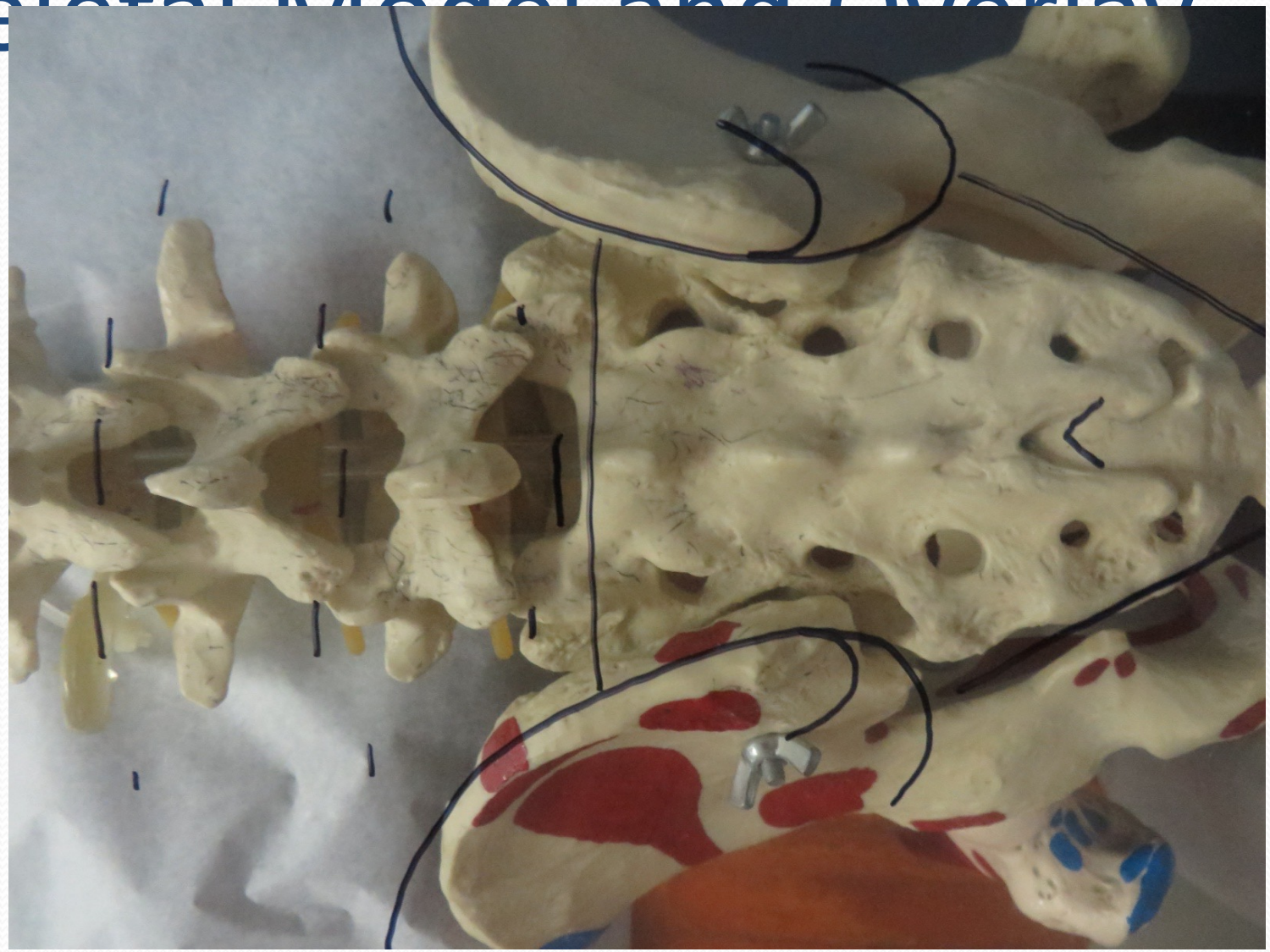
Add the location of the Transverse Processes of L4 and L5



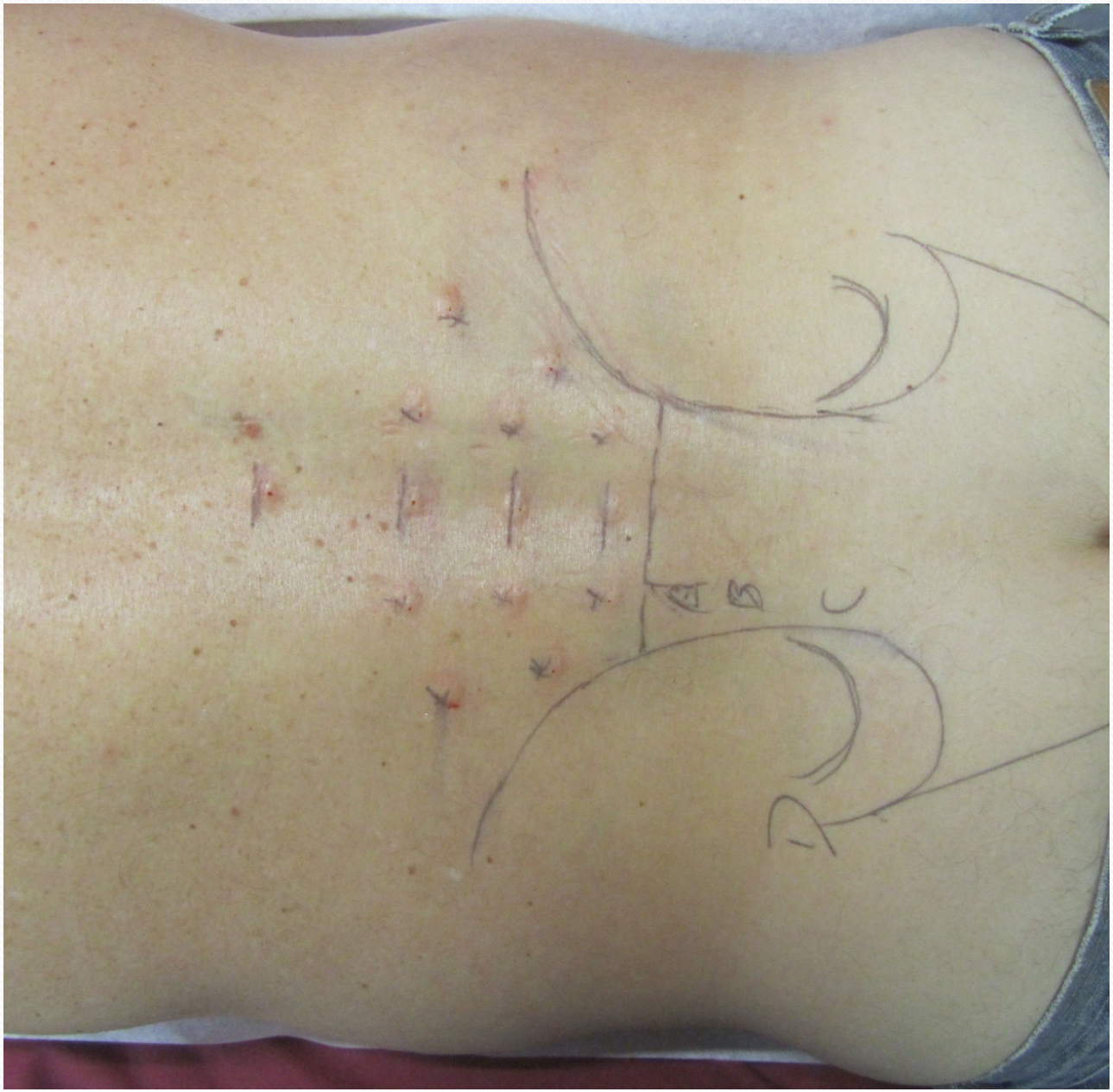
Draw PSIS and Sacrum



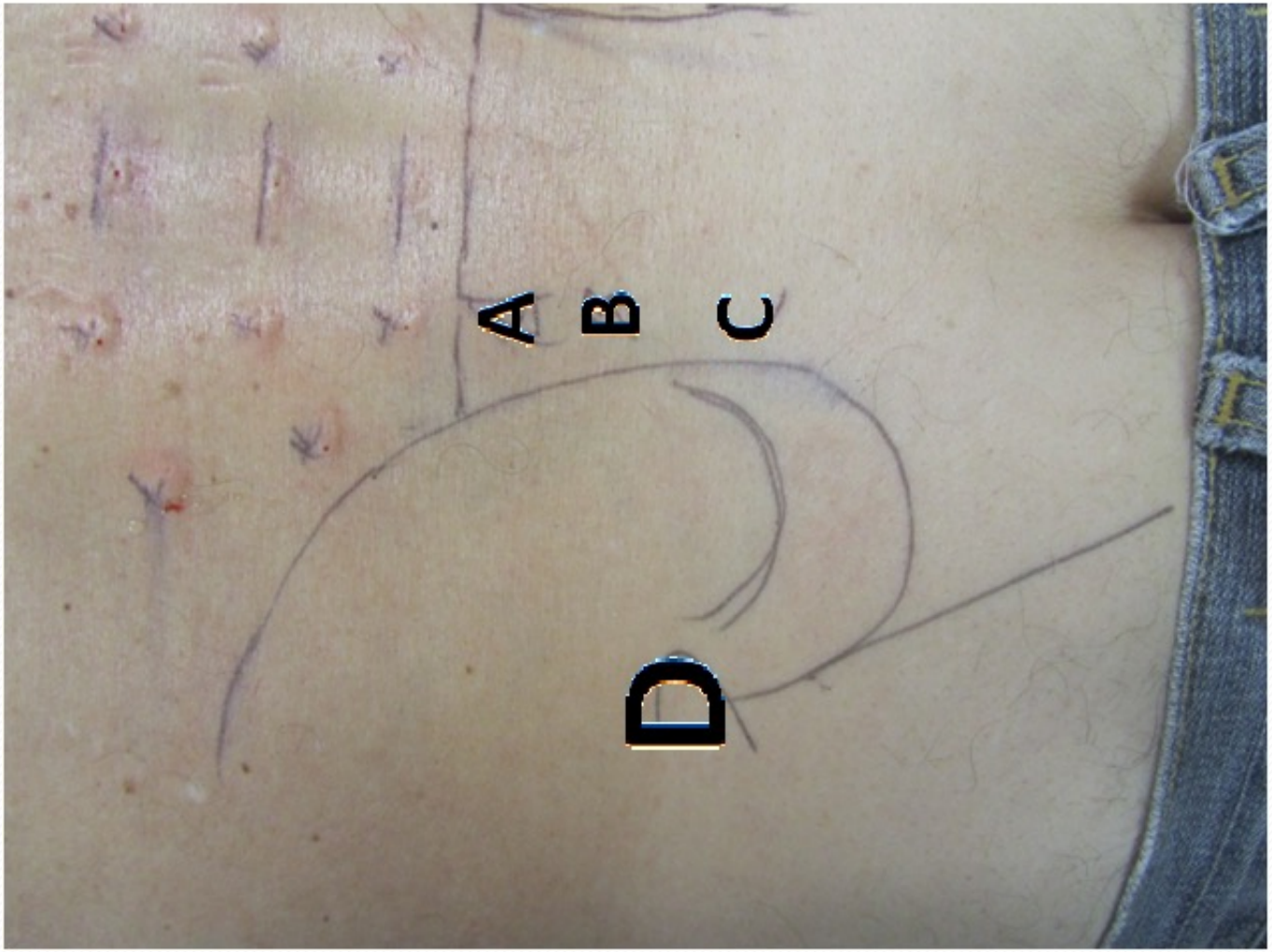
Skeletal Model and Overlay

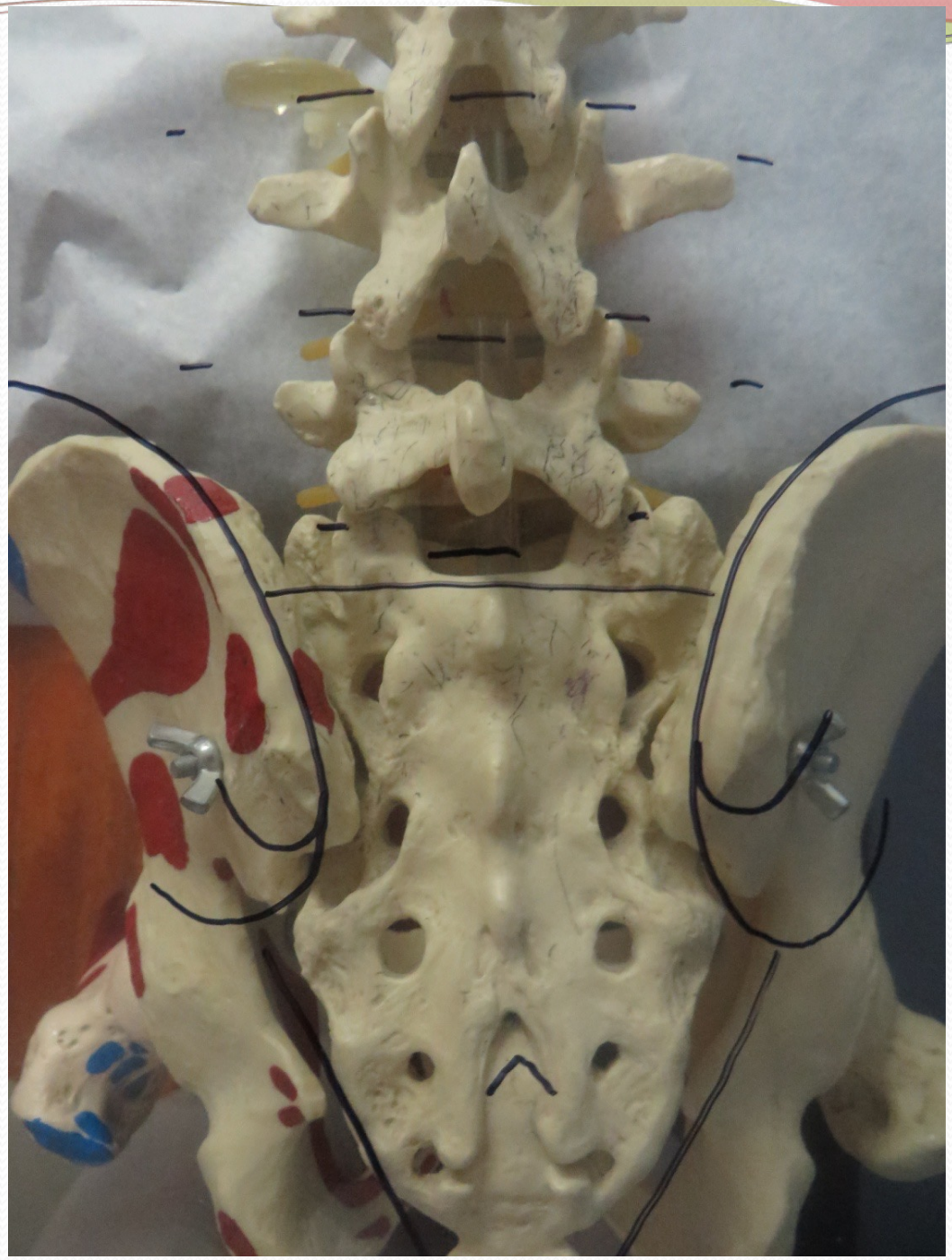


Hackett's Points

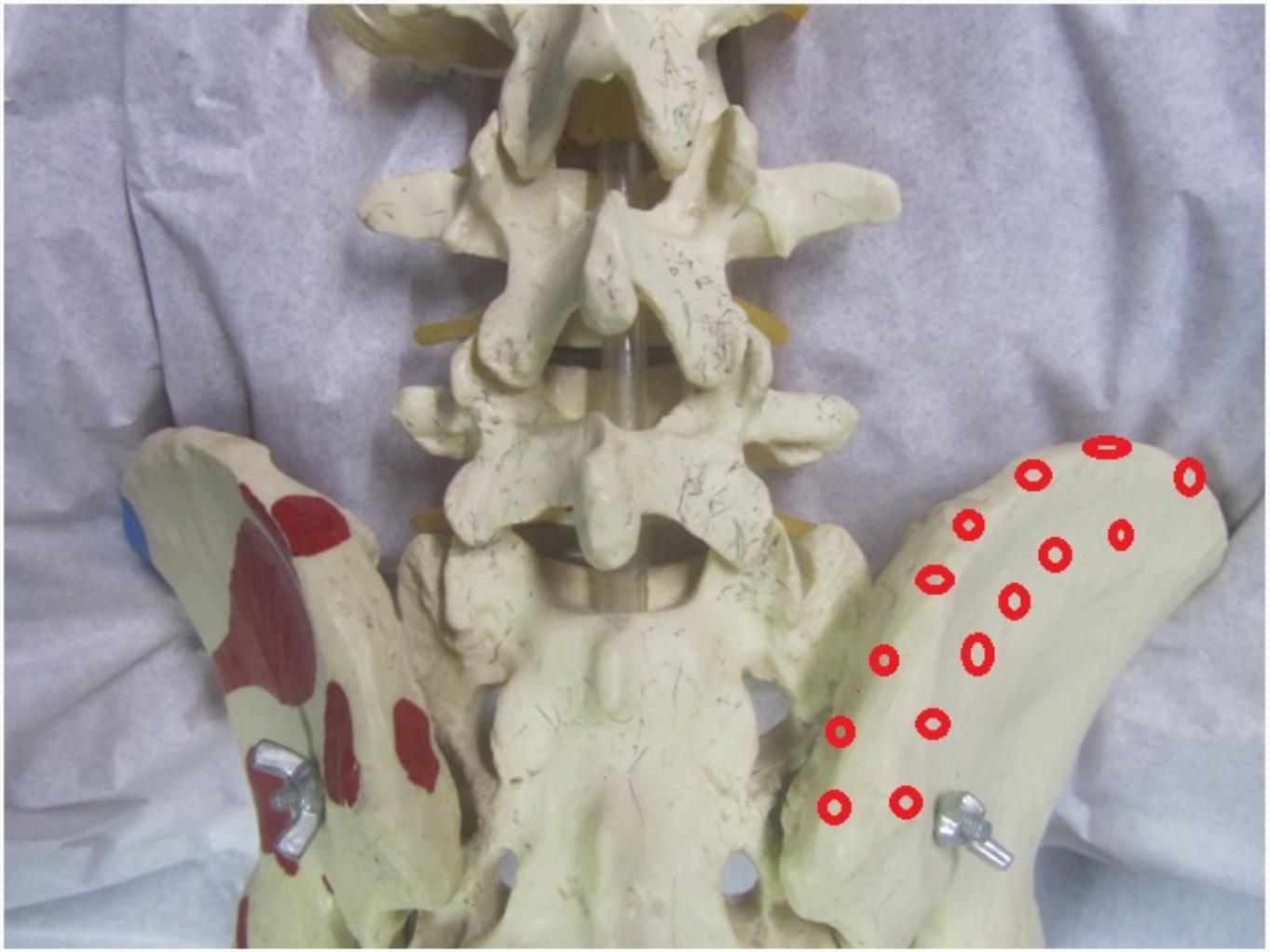


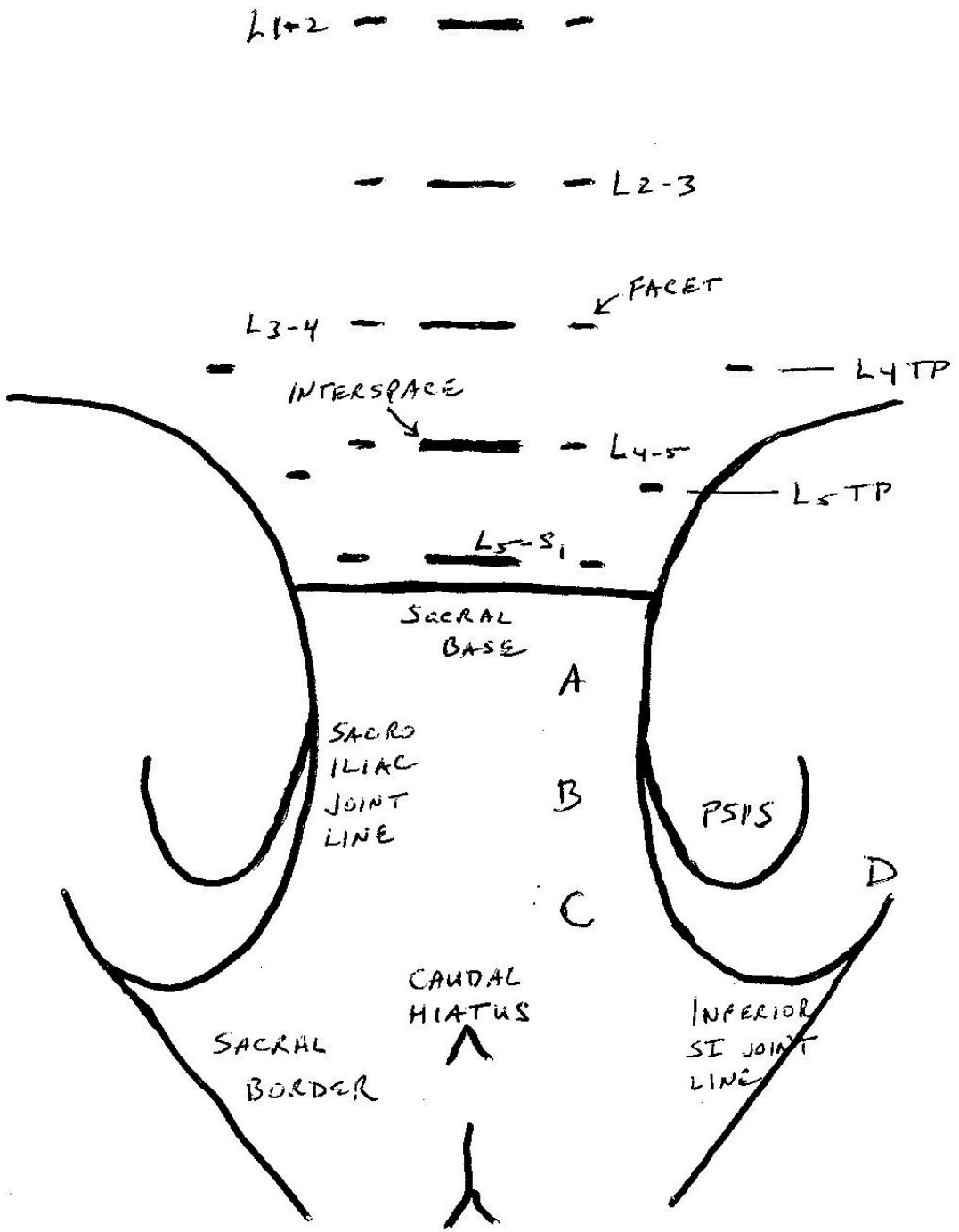
Hackett's A,B,C and D





ILIAC CREST




L1-2
L2-3
L3-4
FACET
L4 TP
INTERSPACE
L4-5
L5 TP
L5-S1
SACRAL BASE
A
SACRO ILIAC JOINT LINE
B
PSIS
C
D
CAUDAL HIATUS
SACRAL BORDER
INFERIOR SI JOINT LINE

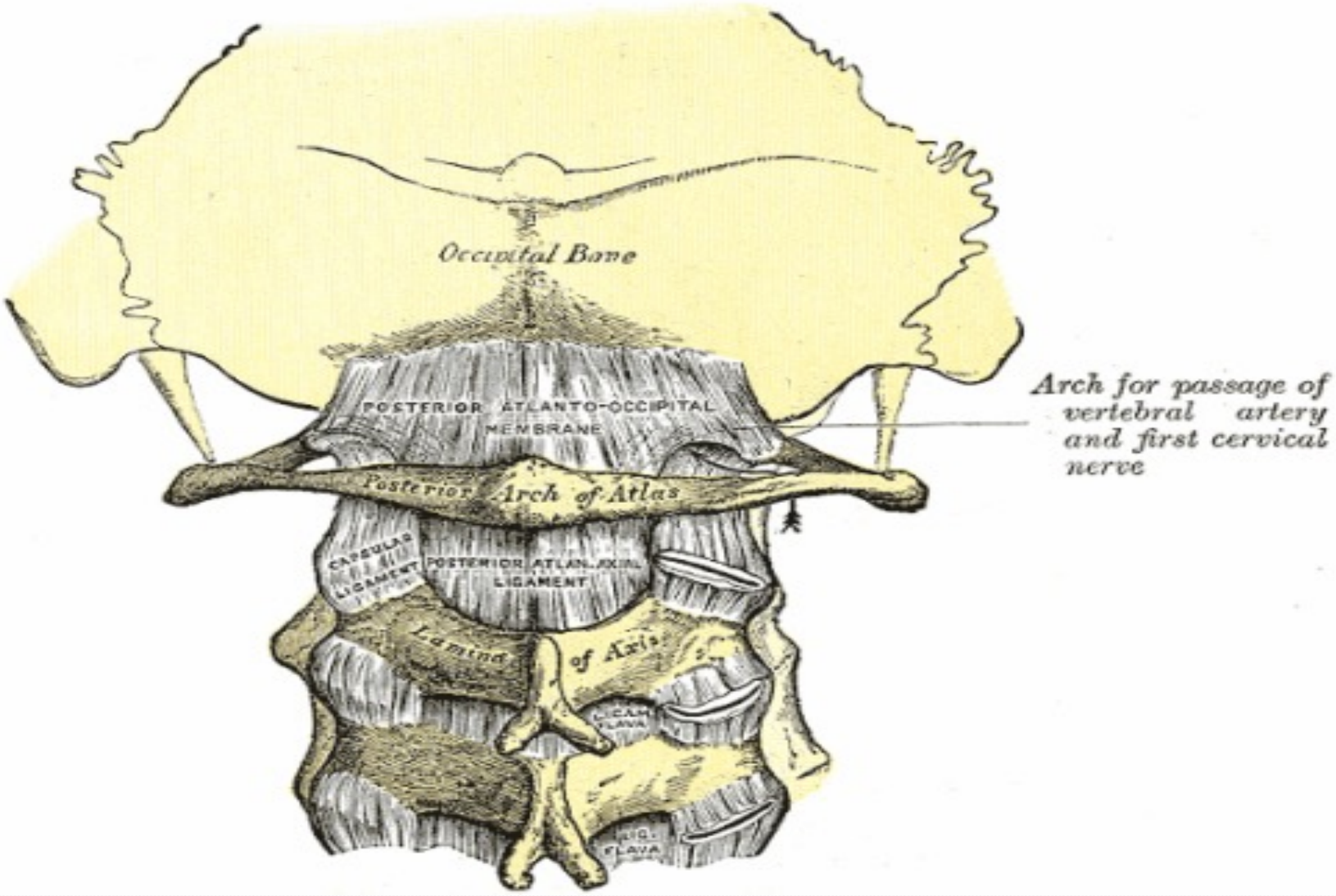
Head/neck/thoracic/ribs

- Head-TMJ, Posterior Occipital Muscles
- Cervical Spine
- Thoracic Spine
- Ribs

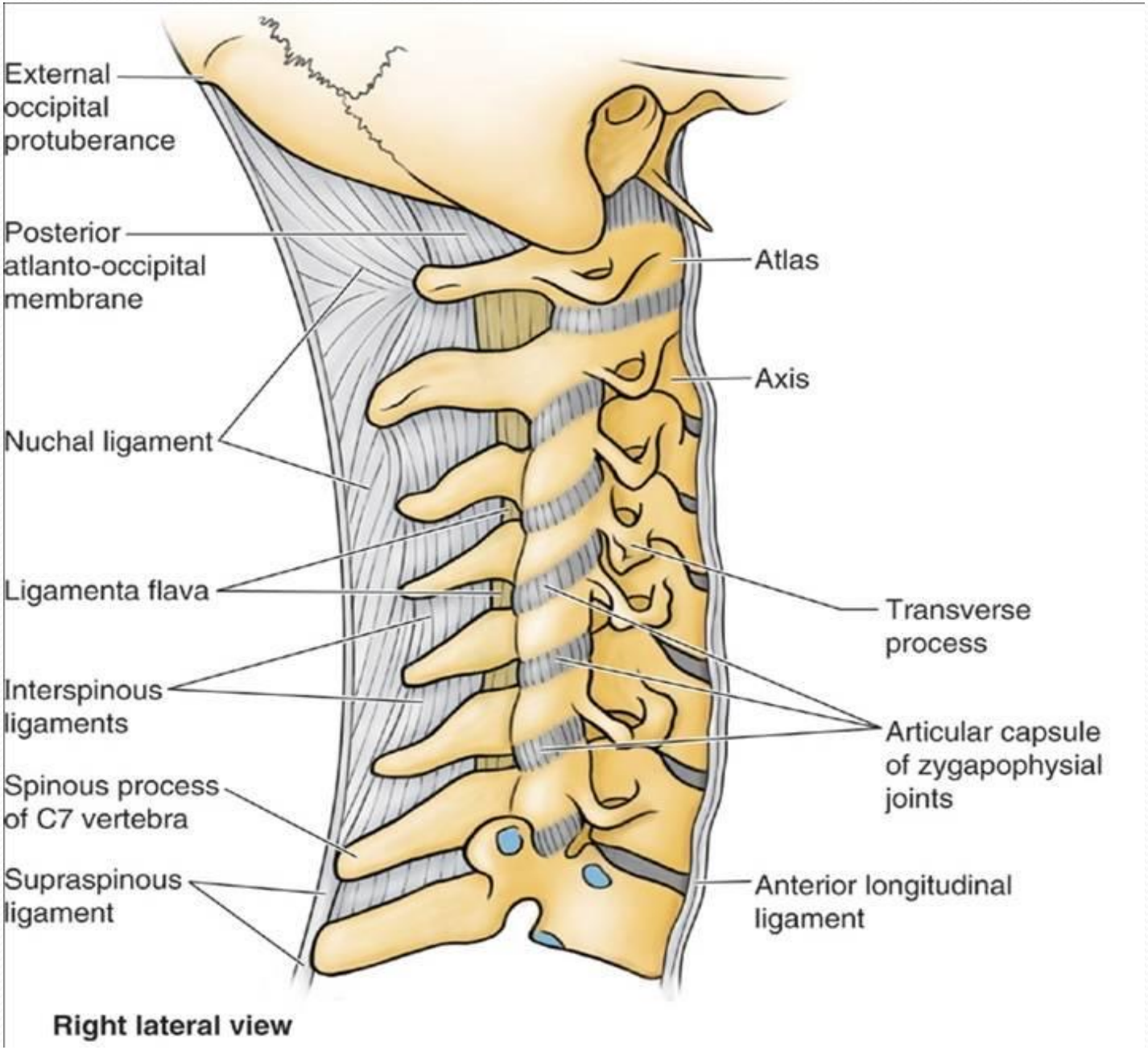
Physical examination

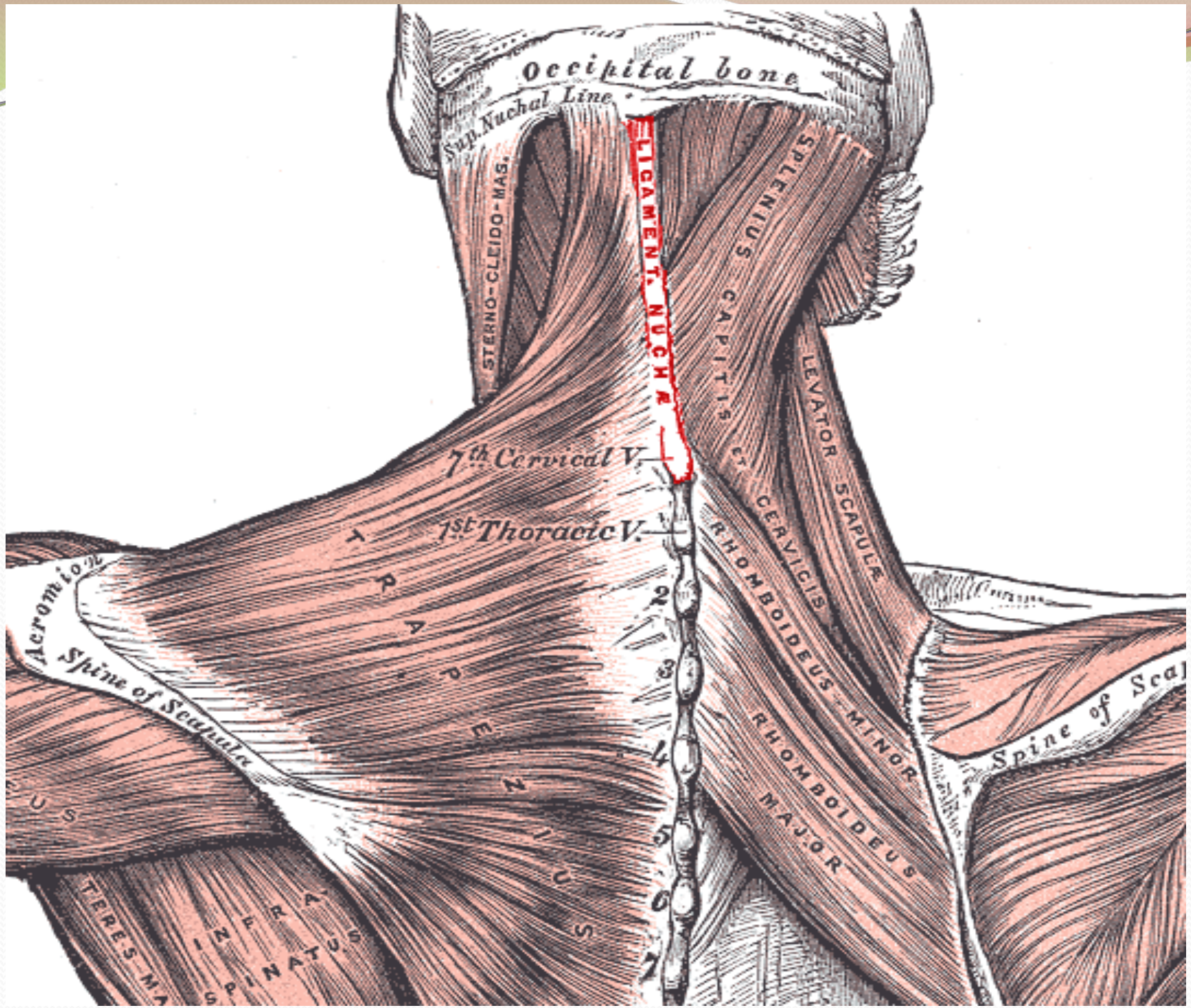
- Joint-by-Joint Musculoskeletal Physical Exam: Spine-Lumbar https://www.youtube.com/watch?v=DTXiijzI154&index=3&list=PLijalQObzAG7giwNTjHPusirYphK6Now9
- Joint-by-Joint Musculoskeletal Physical Exam: Shoulder and Neck https://www.youtube.com/watch?v=f9kYF8KoHSs&list=PLijalQObzAG7giwNTjHPusirYphK6Now9&index=4

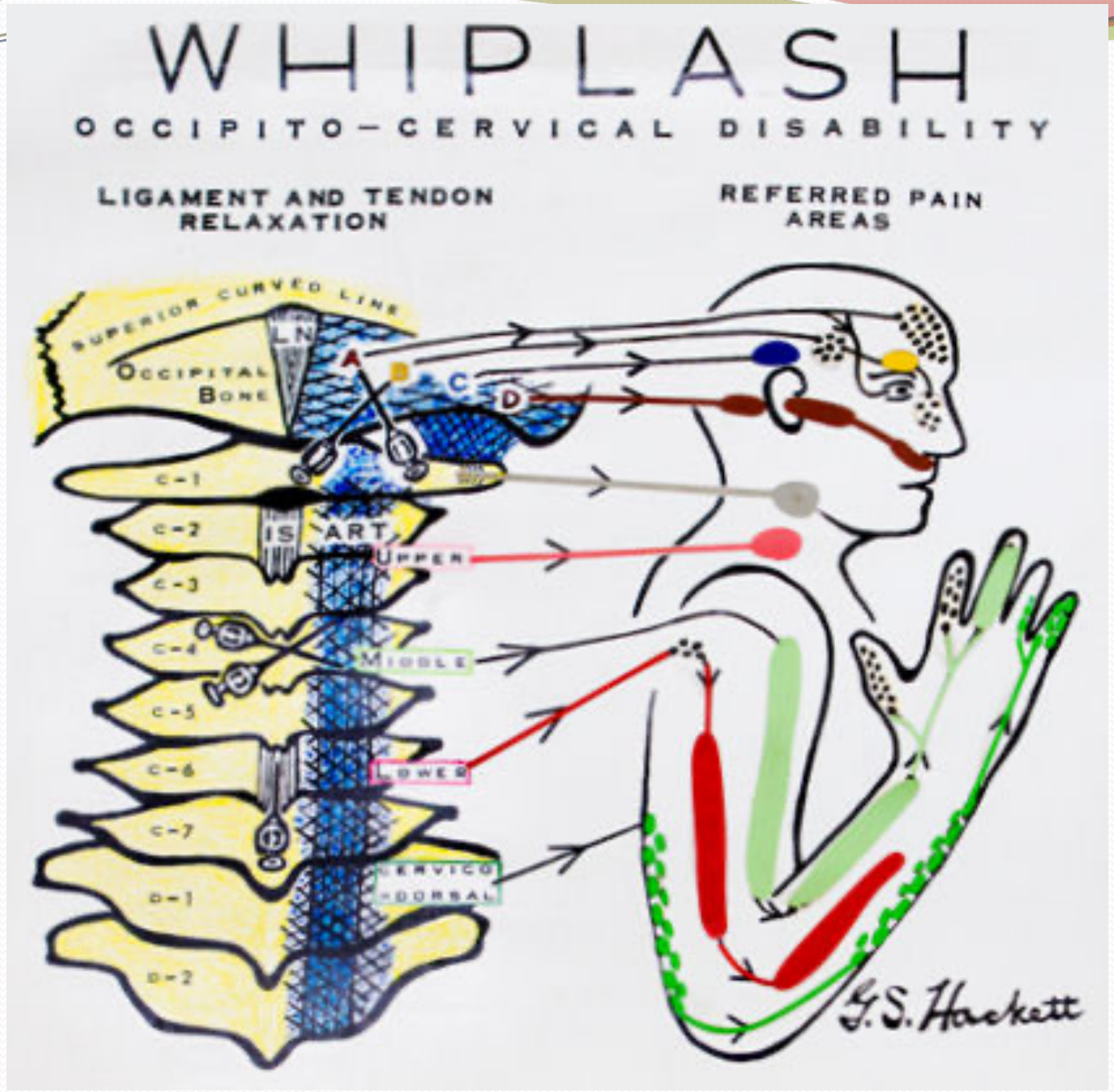
Posterior occiput/upper cervical



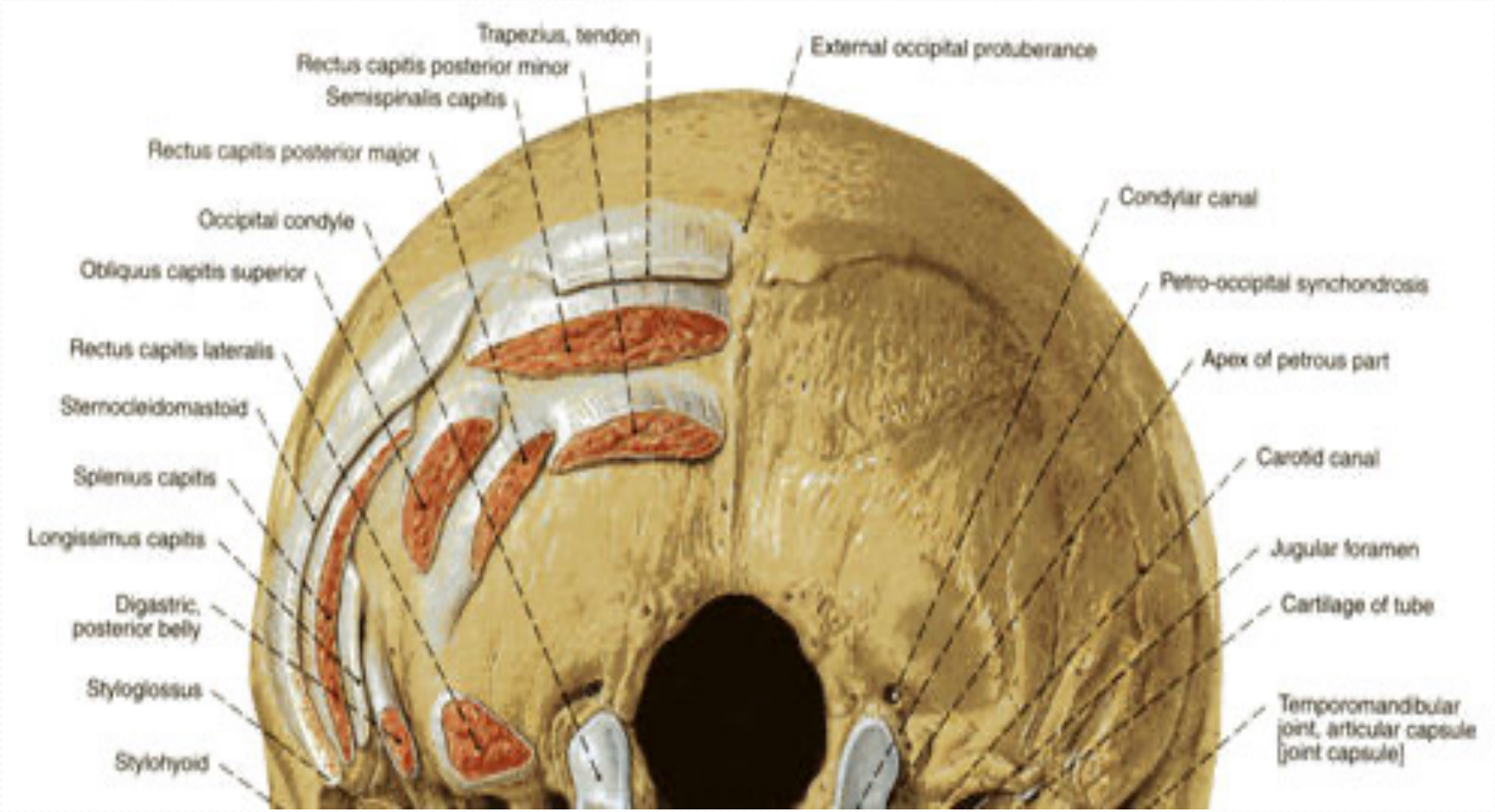
Cervical right lateral view



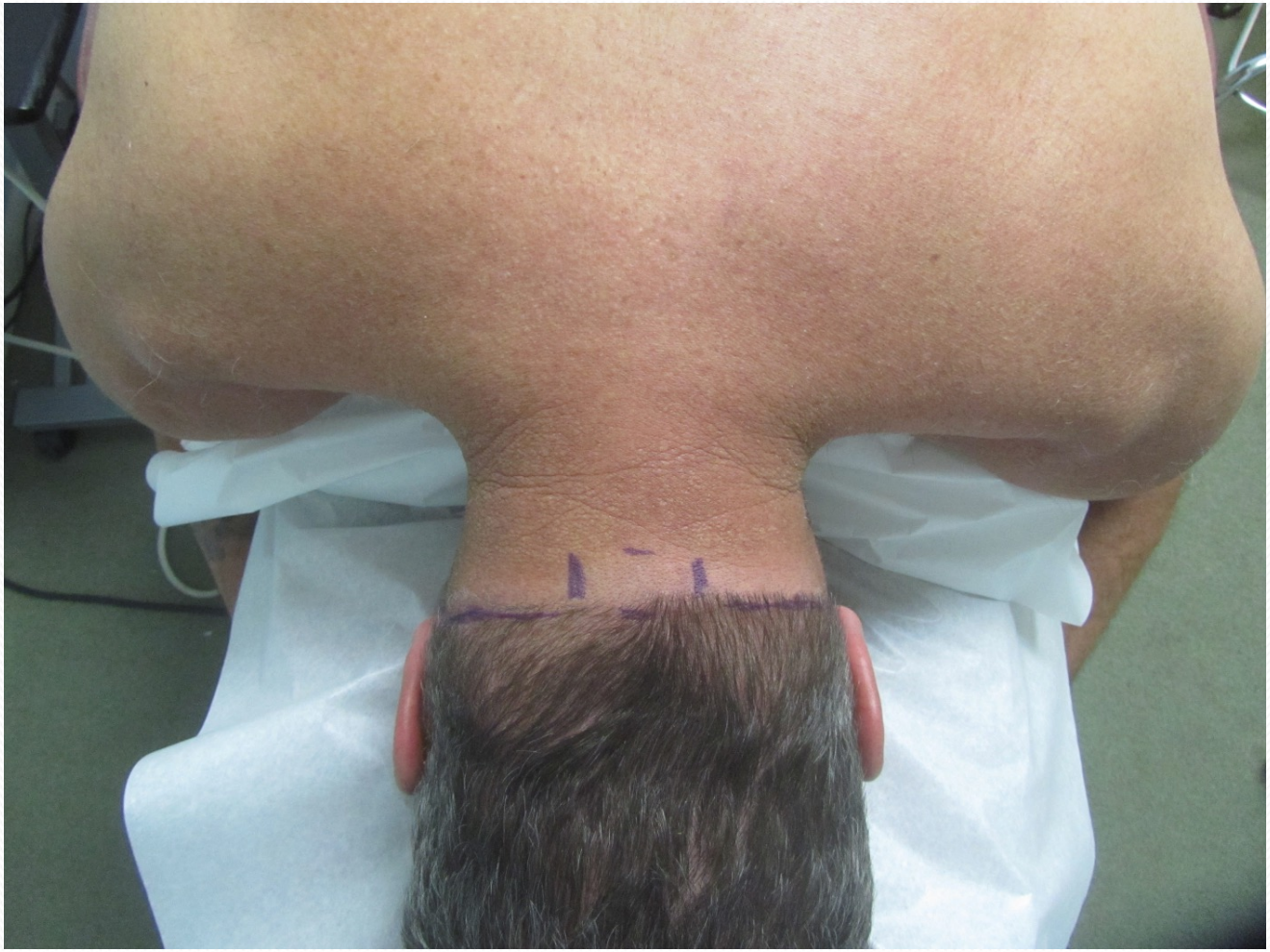

Occipital bone
Sup. Nuchal Line
STERNO-CLEIDO-MAS.
LIGAMENT. NUCHÆ
SPLENIUS CAPITIS ET CERVICIS
LEVATOR SCAPULÆ
7th Cervical V.
1st Thoracic V.
TRAPEZIUS
RHOMBOIDEUS MINOR
RHOMBOIDEUS MAJOR
Acromion
Spine of Scapula
Spine of Scap
INFRA SPINATUS
TERES MA
1
2
3
4
5
6
7


WHIPLASH
OCCIPITO-CERVICAL DISABILITY
LIGAMENT AND TENDON RELAXATION
REFERRED PAIN AREAS
SUPERIOR CURVED LINE
OCCIPITAL BONE
LN
A
B
C
D
C-1
C-2
IS
ART.
UPPER
C-3
C-4
MIDDLE
C-5
C-6
LOWER
C-7
CERVICO-DORSAL
D-1
D-2
G.S. Hackett

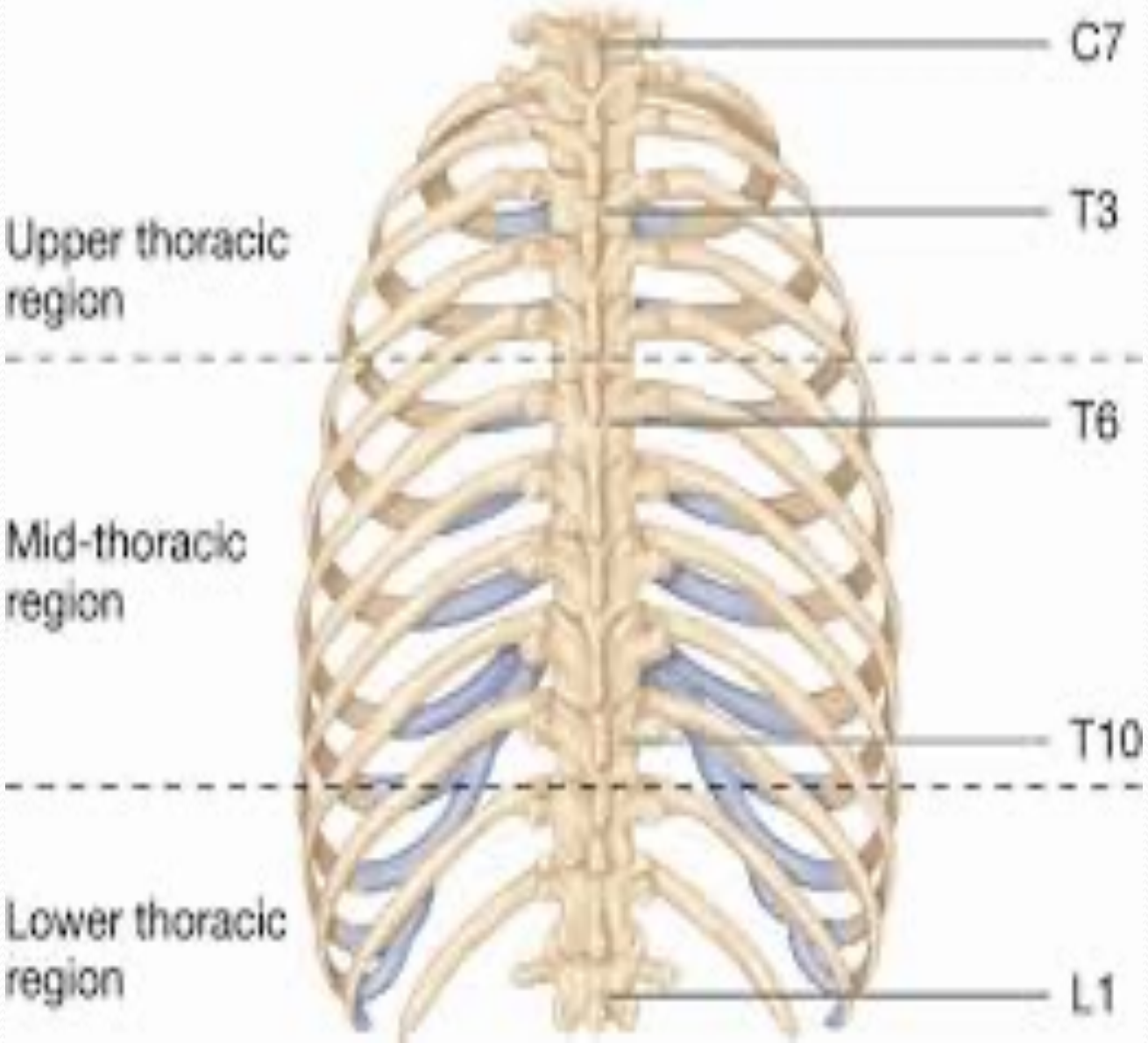
The Rectus Capitus Posterior Minor muscle has been found to have direct fibrous connection with the Dura Mater



Inferior Nuchal Line and C2 SP



Thorax and ribs



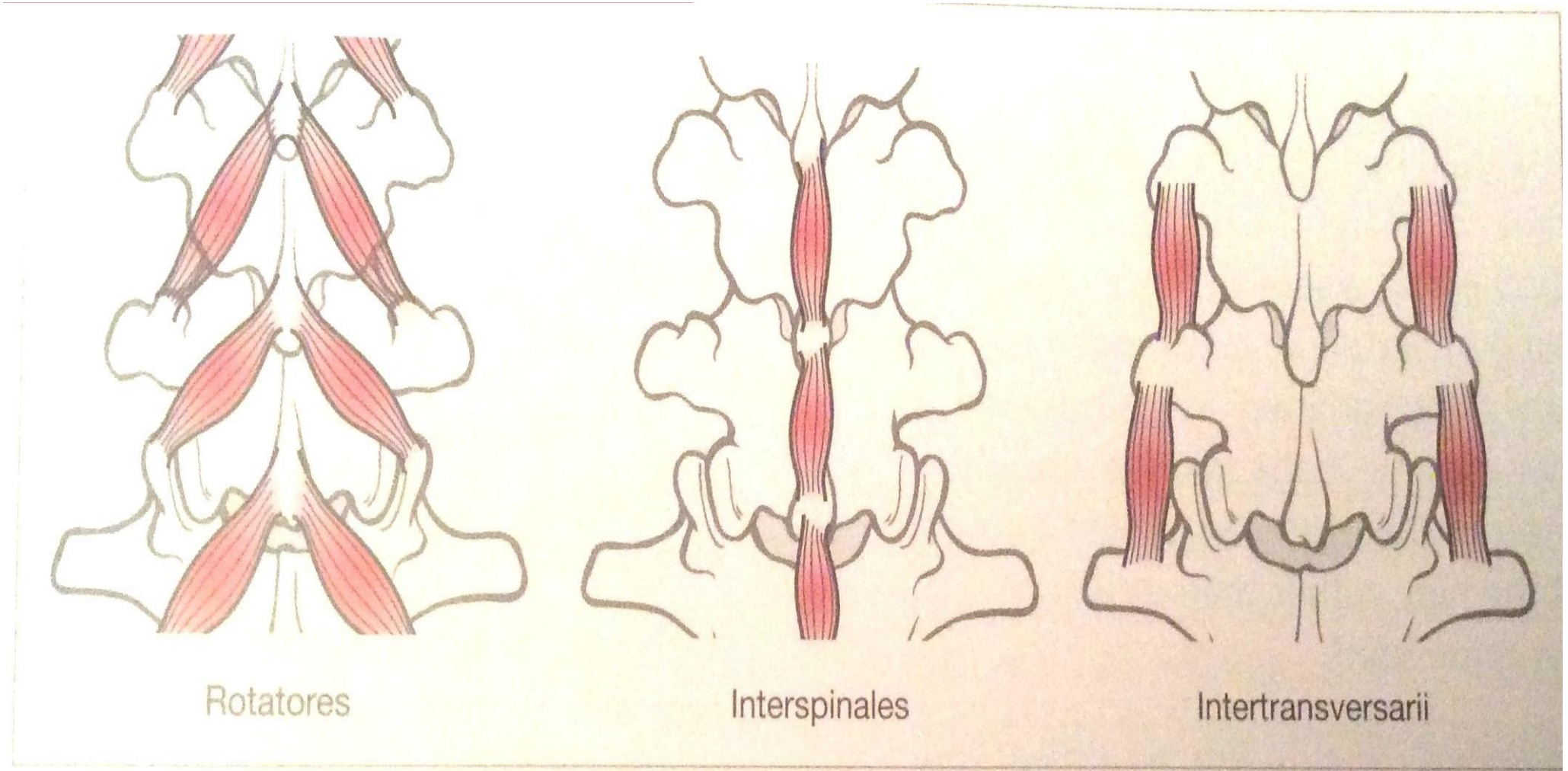
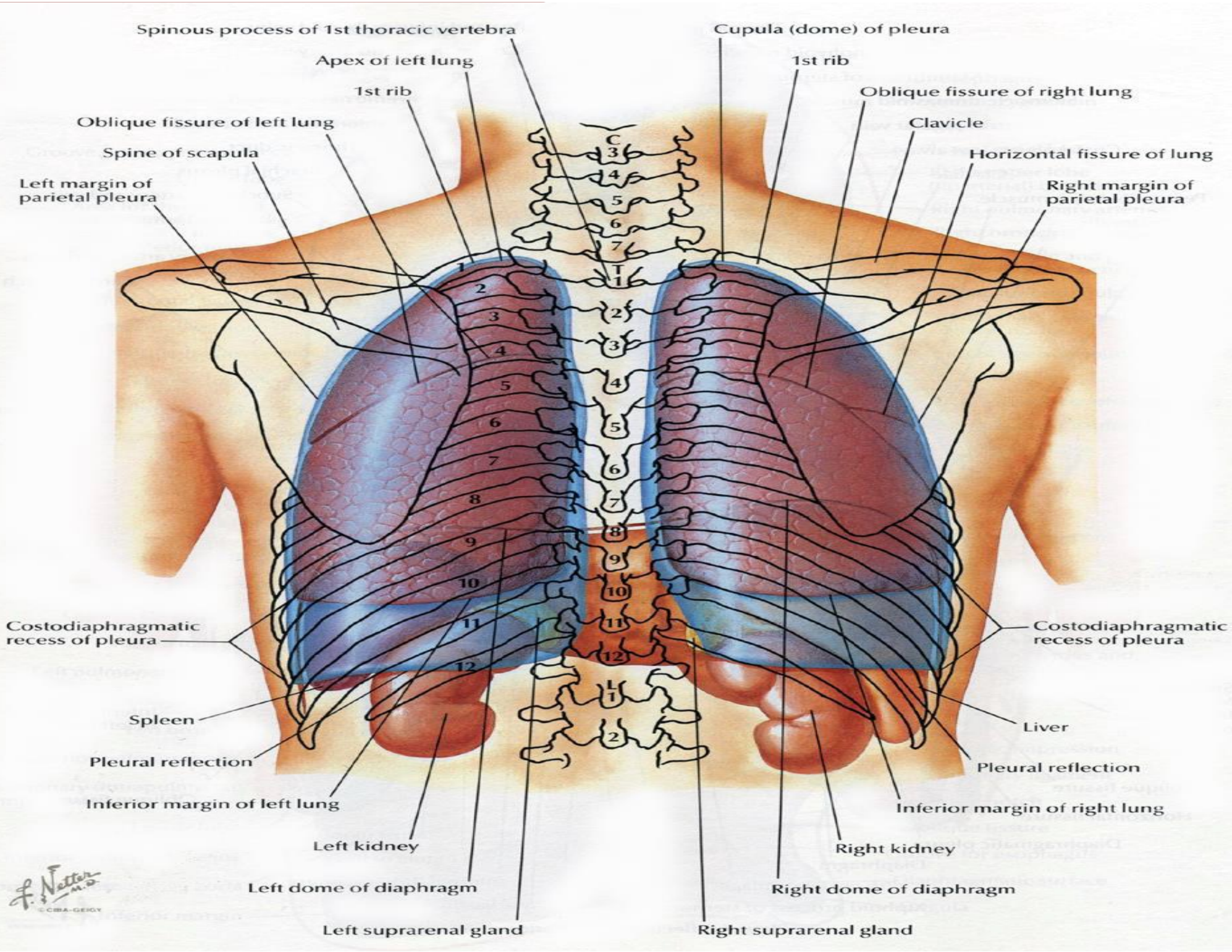


Fig. 3.20 The deepest level of the spinal musculature demonstrates three primary patterns: spinous process to transverse process, spinous process to spinous process, and transverse process to transverse process. The more superficial muscles can be analyzed as ever-longer express versions of these primary locals.


Spinous process of 1st thoracic vertebra
Apex of left lung
1st rib
Oblique fissure of left lung
Spine of scapula
Left margin of parietal pleura
Cupula (dome) of pleura
1st rib
Oblique fissure of right lung
Clavicle
Horizontal fissure of lung
Right margin of parietal pleura
C 3
4
5
6
7
T 1
2
3
4
5
6
7
8
9
10
11
12
L 1
2
Costodiaphragmatic recess of pleura
Costodiaphragmatic recess of pleura
Spleen
Liver
Pleural reflection
Pleural reflection
Inferior margin of left lung
Inferior margin of right lung
Left kidney
Right kidney
Left dome of diaphragm
Right dome of diaphragm
Left suprarenal gland
Right suprarenal gland

Hands on

- Assessment
- Diagnosis-is there a problem appropriate for prolotherapy? Is the patient in a position to heal and respond to prolotherapy?
- Marking/preparation for injections-see handout with example of anatomy marking for injection

Resources/references

- Osteoarthritis: Diagnosis and Treatment KEITH SINUSAS, MD, Middlesex Hospital, Middletown, Connecticut *Am Fam Physician.* 2012 Jan 1;85(1):49-56.
- Diagnostic and Therapeutic Injection of the Hip and Knee http://www.aafp.org/afp/2003/0515/p2147.html
- Musculoskeletal Care http://www.aafp.org/afp/topicModules/viewTopicModule.htm?topicModuleId=17
- Joint-by-Joint Musculoskeletal Physical Exam https://www.youtube.com/playlist?list=PLijalQObzAG7giwNTjHPusirYphK6Now9
- Animated Orthopedic Anatomy Tutorials https://www.youtube.com/playlist?list=PLdFi-NEDUoHcJLwxK7Jn4kbvx-BUEDwPb

Resources/references

- ***Ligament and Tendon Relaxation, Treated by Prolotherapy, G. S. Hackett, G. A. Hemwall and G. A. Montgomery, Gustav A. Hemwall, Oak Park, Ill, 1993***
- ***Principles of Prolotherapy, T. H. Ravin, M. S. Cantieri and G. J. Pasquarello, American Academy of Musculoskeletal Medicine, Boulder, CO, 2008***
- ***Anatomy – A Regional Atlas of the Human Body, C. D. Clemente, Lea & Febriger, Philadephia, PA, 1975***
- T. *Dorman,* ***Whiplash Injuries: Treatment with Prolotherapy and a New Hypothesis, Journal of Orthopaedic Medicine 21[1] (1999), pp. 13–21.***