

Lecture 08 - Deep Back and Suboccipital Region

•**Superficial group of back muscles**

- Trapezius
- Latissimus dorsi
- Levator scapulae
- Rhomboid major
- Rhomboid minor

•**Intermediate group of back muscles**

- Serratus posterior superior
- Serratus posterior inferior

•**Deep group of back muscles**

•**Spinotransversales muscles**

- Splenius capitis
- Splenius cervicis

•**Erector spinae muscles**

- Iliocostalis lumborum
- Iliocostalis thoracis
- Iliocostalis cervicis
- Longissimus thoracis
- Longissimus cervicis
- Longissimus capitis
- Spinalis thoracis
- Spinalis cervicis
- Spinalis capitis – blends with semispinalis capitis (not discussed)

•**Transversospinales muscles**

- Semispinalis thoracis
- Semispinalis cervicis
- Semispinalis capitis
- Multifidus
- Rotatores lumborum
- Rotatores thoracis
- Rotatores cervicis

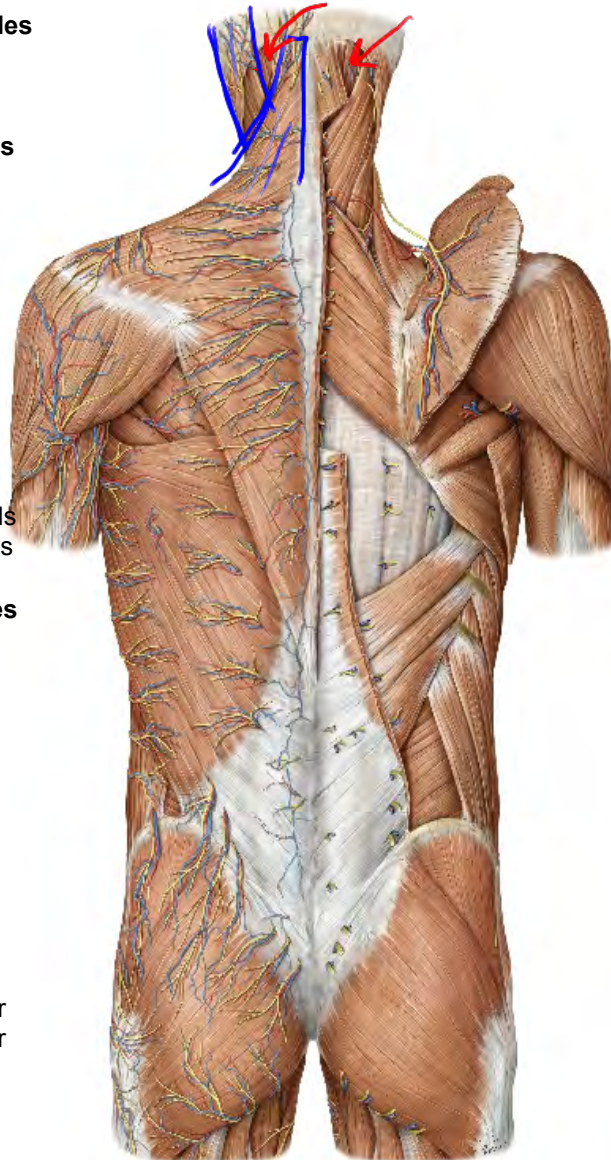
•**Segmental muscles**

- Levatores costarum
- Interspinales
- Intertransversarii

•**Suboccipital muscles**

- Rectus capitis posterior major
- Rectus capitis posterior minor
- Obliquus capitis superior
- Obliquus capitis inferior

Covered previously



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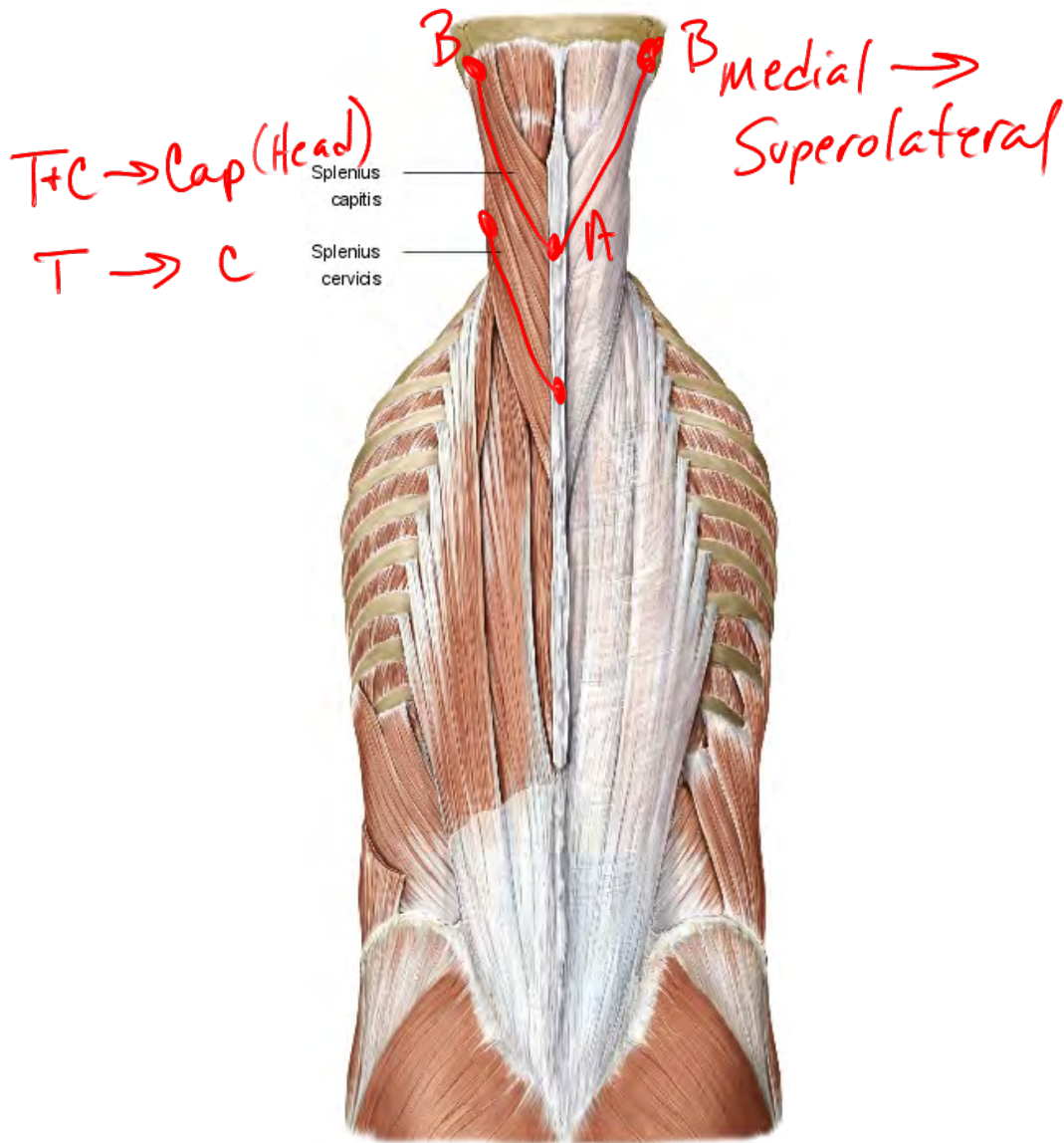
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Lecture 08 - Deep Back and Suboccipital Region

**Deep Group of Back Muscles**

- Spinotransversales muscles

Muscle	Proximal Attachment	Distal Attachment	Action	Innervation
X .Splenius capitis m.	Nuchal ligament, spinous processes of C7-T4 vertebrae	Mastoid process and occipital bone	Acting alone: laterally bends and rotates the head (same side) Acting together: extend the head and neck	Segmentally innervated by dorsal rami of the middle and lower cervical spinal nn.
X .Splenius cervicis m.	Spinous processes of T3-T6	Transverse processes of C1-C3		



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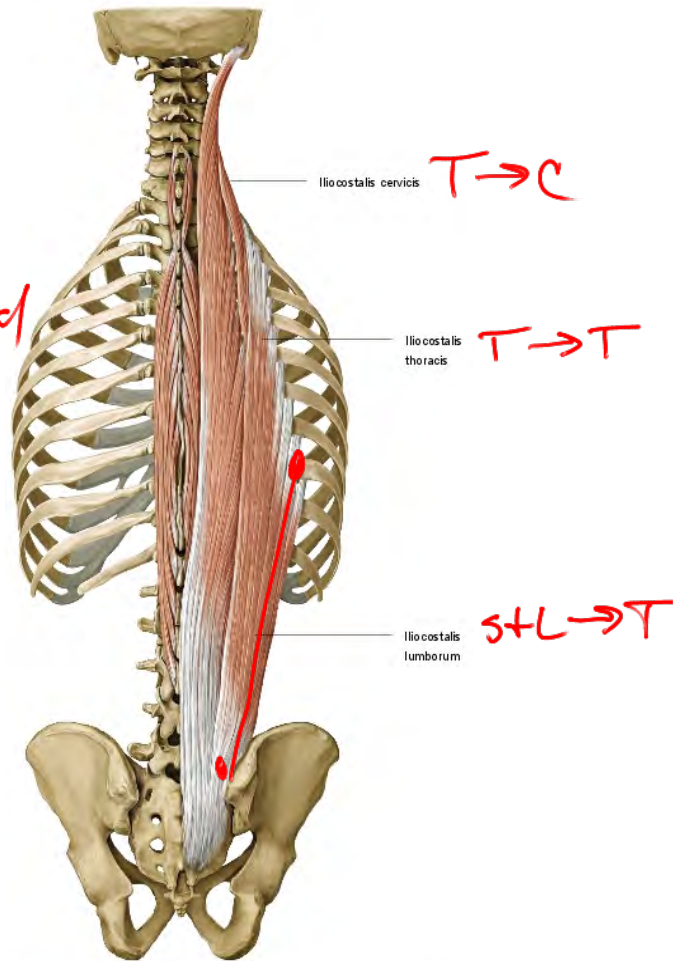
**Deep Group of Back Muscles**

- Erector Spinae Muscles (Iliocostalis)

Muscle	Proximal Attachment	Distal Attachment	Action	Innervation
<b>Erector spinae group</b>				
<b>Iliocostalis m. (lateral)</b>				
Iliocostalis lumborum	Iliac crest and sacrospinal aponeurosis	Thoracolumbar fascia and ribs 7-12	Bilateral-extend the vertebral column Unilateral-lateral flexion of the vertebral column and rotation to same side	Segmentally innervated by dorsal primary rami of spinal nn.
Iliocostalis thoracis	Ribs 6-12	Ribs 1-6 and transverse process of C7 vertebra		
Iliocostalis cervicis	Ribs 3-6	Transverse processes of C4-C6 vertebrae		

Salt = Spinalis  
 Lake = Longissimus  
 Int = Iliocostalis

Medial → Superolateral



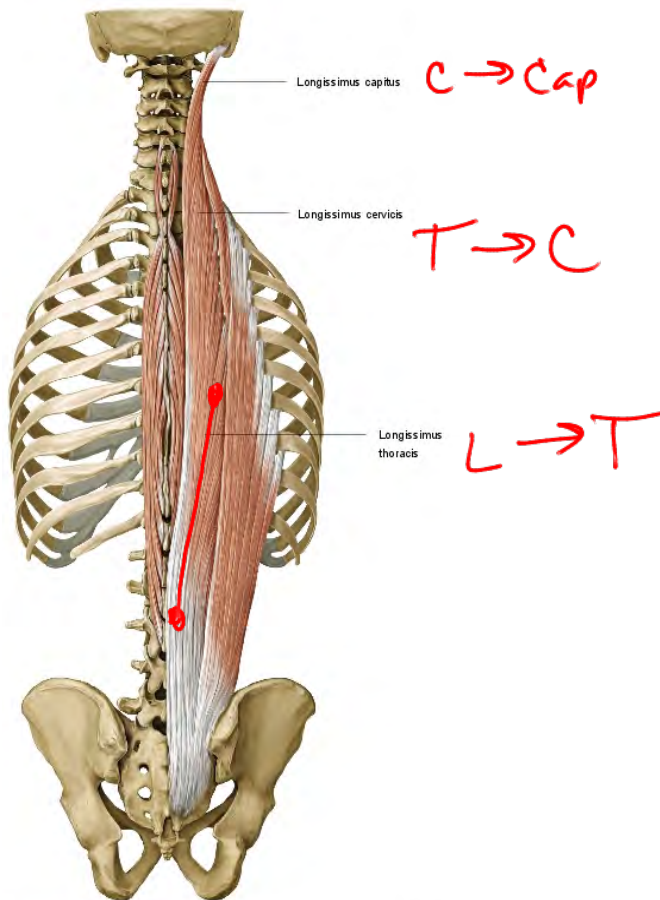
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**Deep Group of Back Muscles**

- Erector Spinae Muscles (Longissimus)

Muscle	Proximal Attachment	Distal Attachment	Action	Innervation
<b>Erector spinae group</b> - series of muscles that extends from the sacrum to the skull				
• Longissimus m. (intermediate)				
• Longissimus thoracis	Blends with iliocostalis; transverse processes of lumbar vertebrae	Transverse processes of thoracic vertebrae and inferior borders of ribs (Lower 10)	Bilateral-extend the vertebral column Unilateral-lateral flexion of the vertebral column and rotation to same side	Segmentally innervated by dorsal primary rami of spinal nn.
• Longissimus cervicis	Transverse processes of T1-T5 vertebrae	Transverse processes of C2-C6 vertebrae		
• Longissimus capitis	Transverse processes of C5-T5 vertebrae	Mastoid process of temporal bone		

Medial →  
Superolateral



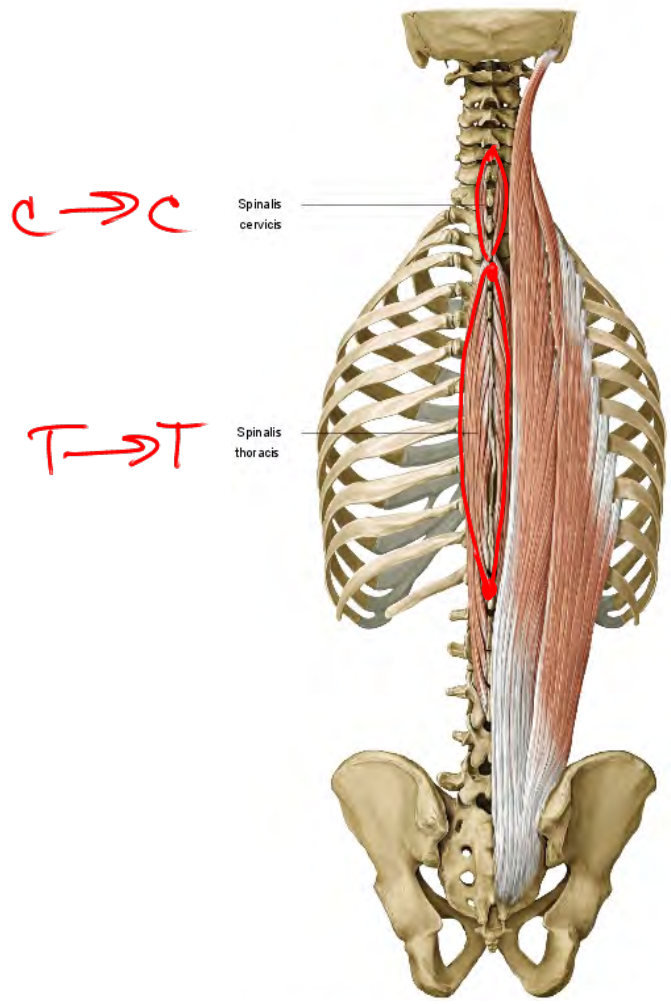
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**Deep Group of Back Muscles**

- Erector Spinae Muscles (Spinalis)

Muscle	Proximal Attachment	Distal Attachment	Action	Innervation
<b>Erector spinae group</b> - series of muscles that extends from the sacrum to the skull				
.Spinalis (medial)			Bilateral- <u>extend the vertebral column</u>	Segmentally innervated by dorsal primary rami of spinal nn.
.Spinalis thoracis	Spinous processes of T10-L2 vertebrae	Spinous processes of T1-T8 vertebrae	Unilateral-lateral flexion <u>of the vertebral column</u>	
.Spinalis cervicis	Lower nuchal ligament and C7 spinous process	Spinous process of C2	(minimal rotation)	



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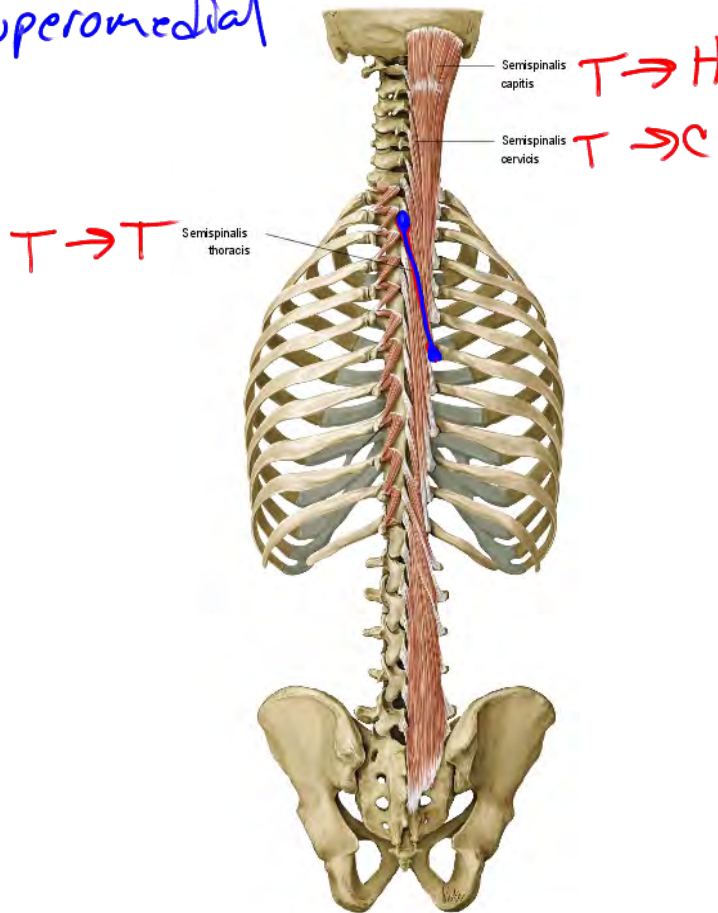
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**Deep Group of Back Muscles**

- Transversospinales Muscles (Semispinalis)

Muscle	Proximal Attachment	Distal Attachment	Action	Innervation
Transversospinalis group				
Semispinalis m.				Segmentally innervated by dorsal primary rami of spinal nn.
.Semispinalis thoracis	Transverse processes of T7-T12 vertebrae	Spinous processes of C6-T6 vertebrae	Extend the cervical and thoracic regions of vertebral column and rotates the vertebral column contralaterally	
.Semispinalis cervicis	Transverse processes of T1-T6 vertebrae	Spinous processes of C2-C5 vertebrae	Extends the head, and turns the face towards the opposite side	
.Semispinalis capitis	Transverse processes of C7-T6 vertebrae	Between the superior and inferior nuchal lines on the occipital bone		

Lat-eral → Supero-medial



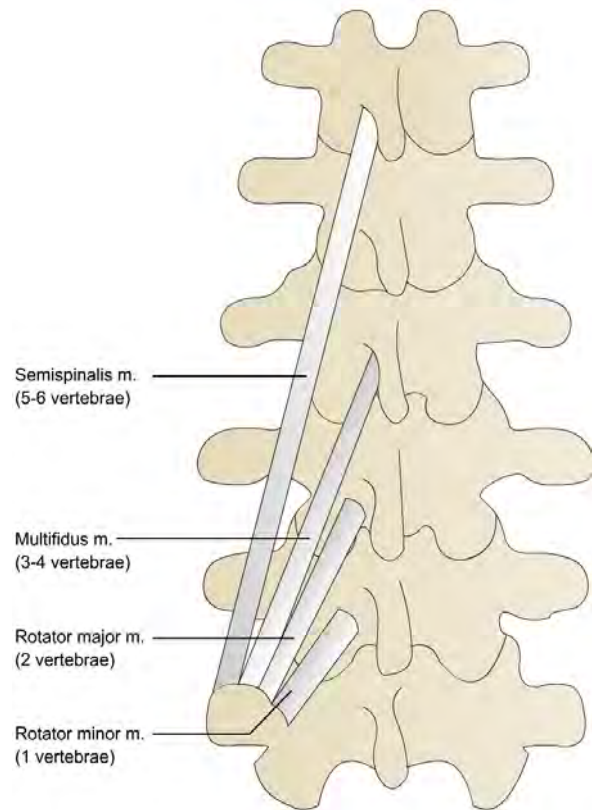
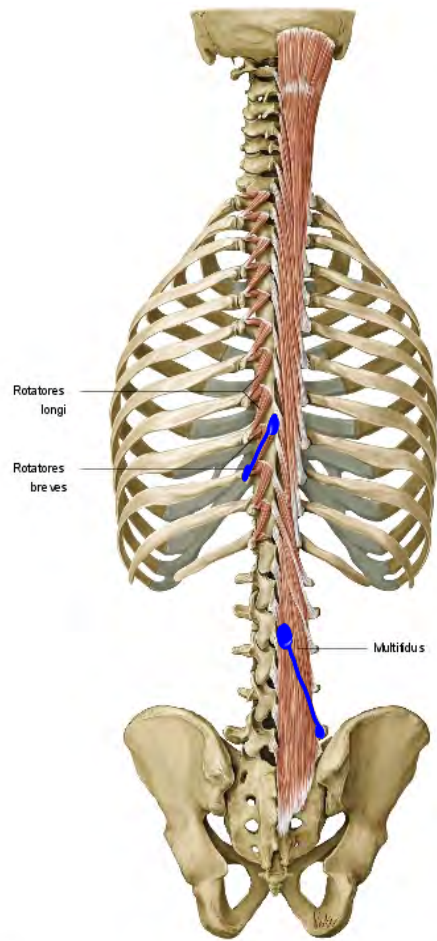
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**Deep Group of Back Muscles**

- Transversospinales Muscles (Multifidus, Rotatores)

Muscle	Proximal Attachment	Distal Attachment	Action	Innervation
<b>Transversospinalis group</b>				
.Multifidus <i>* Lumbar</i>	Aponeurosis of the erector spinae muscles, sacrum and transverse processes of lumbar, thoracic and cervical vertebrae	Spinous processes of lumbar, thoracic, and lower cervical vertebrae	Extend the vertebral column and rotates the vertebral column contralaterally	Segmentally innervated by dorsal primary rami of spinal nn.
.Rotatores .Longus .Brevis <i>* Thoracic</i>	Transverse processes of C2 vertebra to the sacrum	Near lamina immediately above vertebra of origin		



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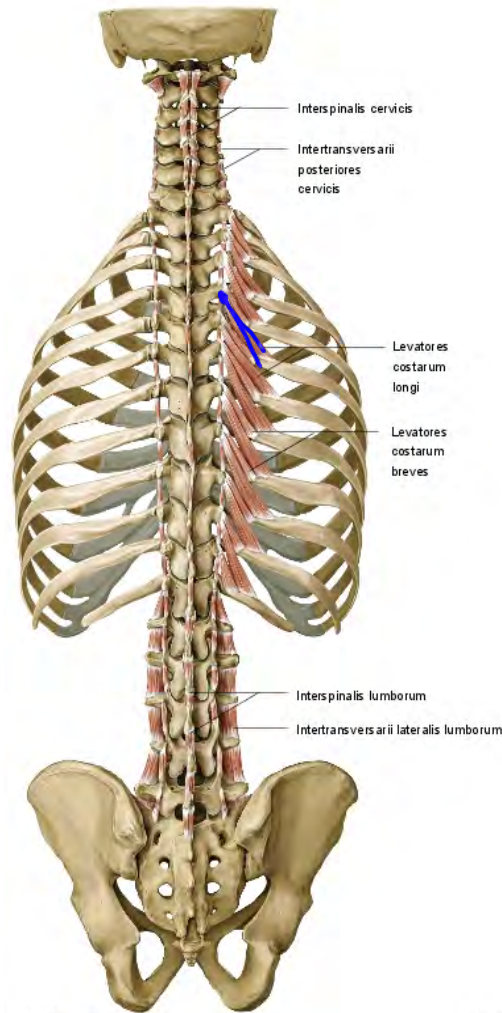
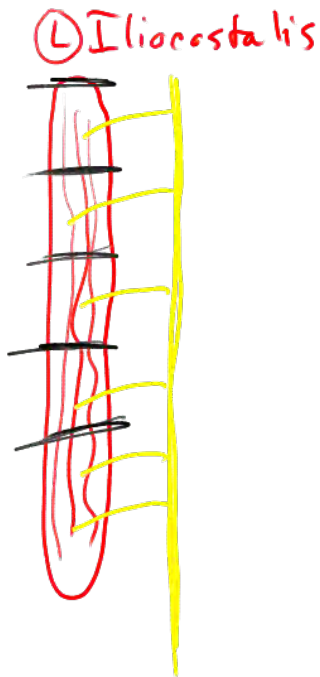
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**Deep Group of Back Muscles**

- Segmental muscles

Muscle	Proximal Attachment	Distal Attachment	Action	Innervation
Segmental group				
→ Interspinalis mm. (paired muscle)	Spinous process above	Spinous process below	Stabilization	Dorsal rami of spinal nn.
→ Intertransversarii mm.	Transverse process above	Transverse process below	Stabilization	
• Levatores costarum mm. • Longus • Brevis	Tips of transverse processes of C7-T11 vertebrae	Pass inferolaterally and insert on a rib	Elevates rib	Dorsal rami of C7-T11 spinal nn.

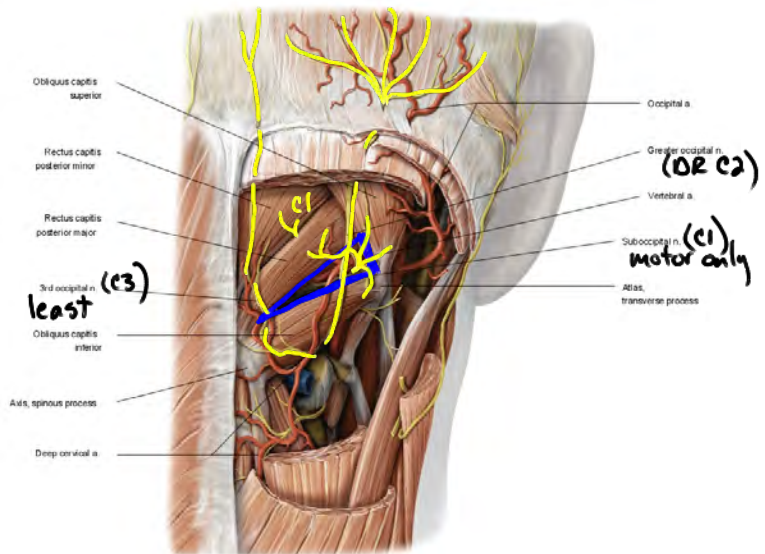
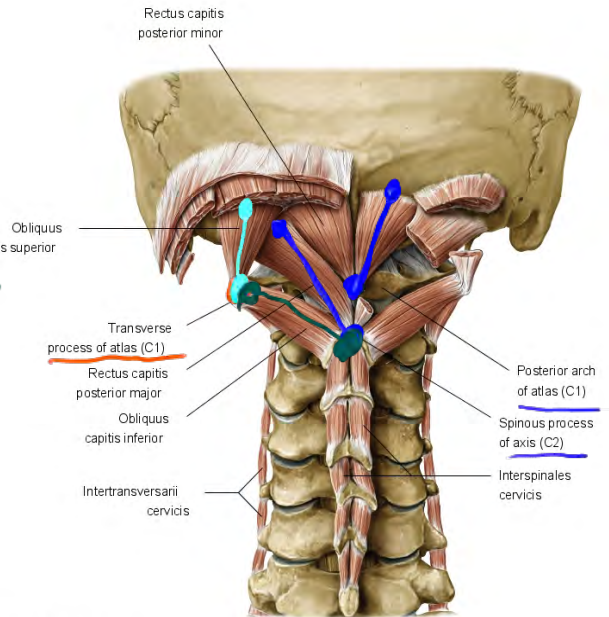




Lecture 08 - Deep Back and Suboccipital Region

**Suboccipital region**

- Superior area of the neck below the occipital region; lies deep to the trapezius and semispinalis mm.
- Muscles
  - Rectus capitis posterior major m.
  - Rectus capitis posterior minor m.
  - Obliquus capitis superior m.
  - Obliquus capitis inferior m.
- Innervation to the suboccipital region
  - Suboccipital n. - dorsal ramus of C1 spinal n.
  - Greater occipital n. - dorsal ramus of C2 spinal n.
  - Dorsal ramus of C3 spinal n.
- Suboccipital triangle
  - Borders
    - Rectus capitis posterior major m.
    - Obliquus capitis superior m.
    - Obliquus capitis inferior m.
  - Contents
    - Vertebral a.
    - Suboccipital n. (dorsal ramus of C1 spinal n.)
- Suboccipital region arteries
  - Occipital
  - Vertebral
  - Deep cervical



## Lecture 08 - Deep Back and Suboccipital Region

<b>Muscle</b>	<b>Proximal Attachment</b>	<b>Distal Attachment</b>	<b>Action</b>	<b>Innervation</b>
<b>Suboccipital group</b>				
Rectus capitis posterior major	Spinous process of C2	Occipital bone	Extension of head and rotation to same side	Dorsal rami C1
Rectus capitis posterior minor	Posterior tubercle of C1	Occipital bone	Extension of head	
Obliquus capitis superior	Transverse process of C1	Occipital bone	Extension of head and lateral flexion to same side	
Obliquus capitis inferior	Spinous process of C2	Transverse process of C1	Rotation of face to same side	