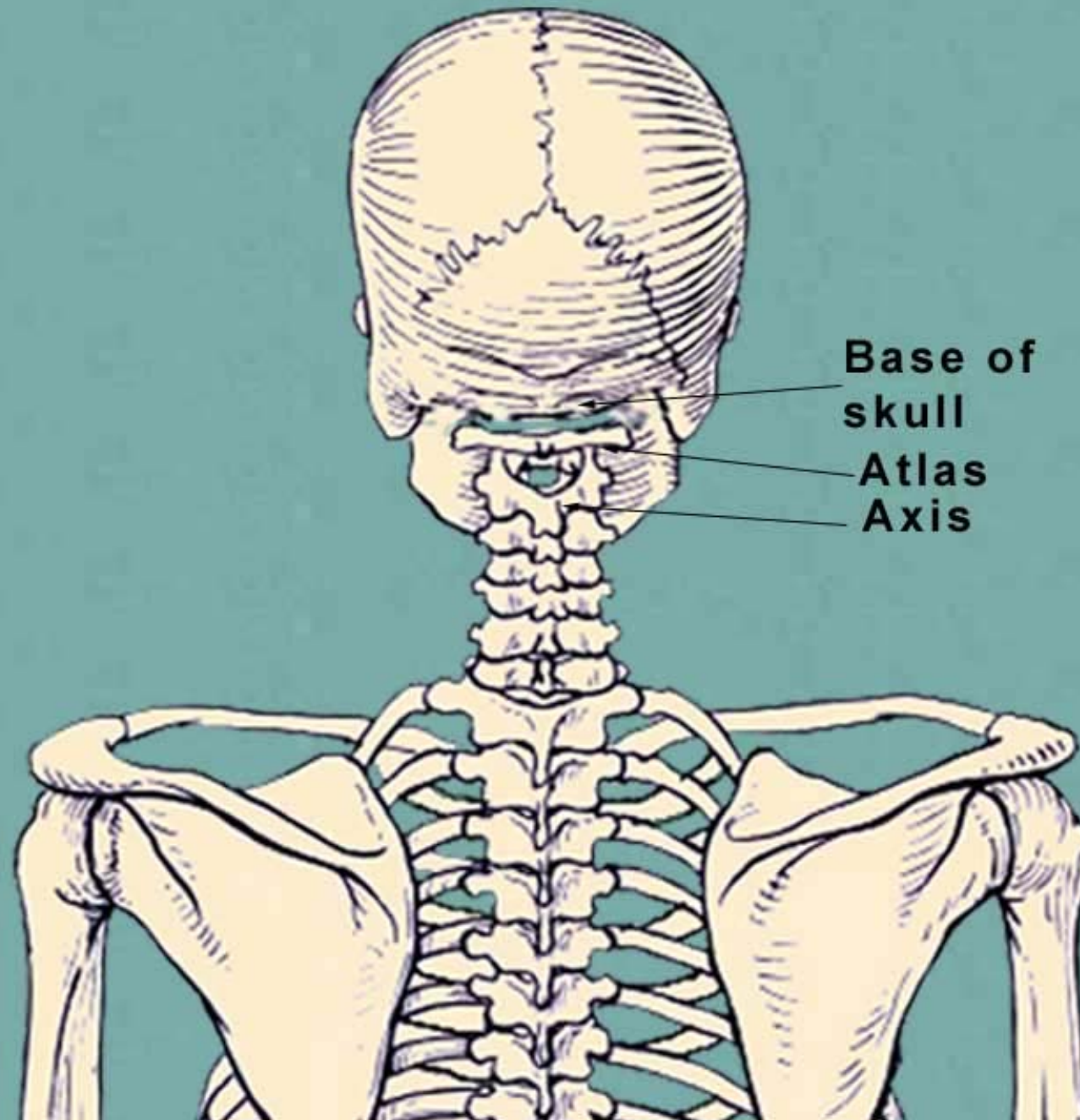


# The Suboccipital Region

## Bones of Suboccipital Triangle



The skeleton of the suboccipital region is shown in the figure to the right. As you can see, the following structures form the background for the other structures in the region: base of skull and superior nuchal line posterior arch of the atlas (C1) and its tubercle and transverse process spine and transverse process of the axis (C2)

The deepest structures in the suboccipital triangle are the 1st cervical nerve and the vertebral artery.

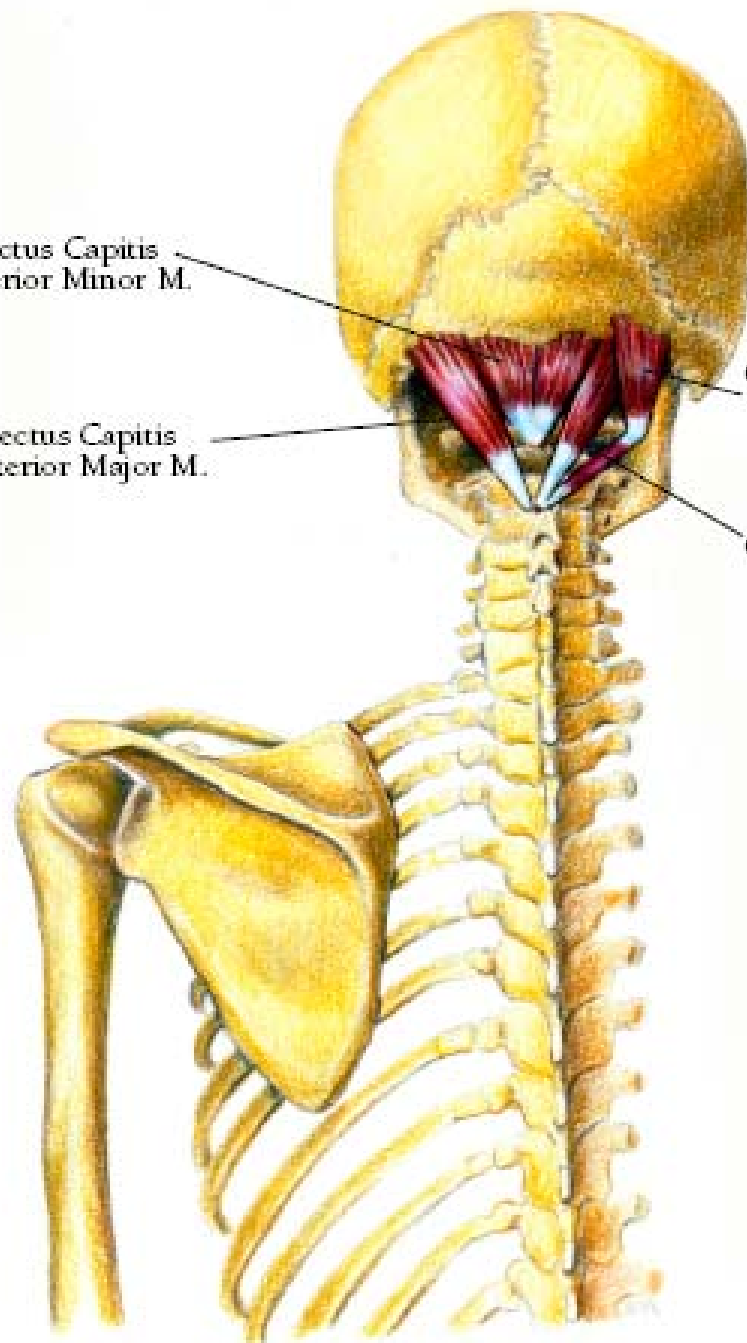
There is a small space located just beneath the base of the skull which includes the atlas and axis (first 2 cervical vertebrae). These bones form the background for describing the suboccipital triangle. The importance of this triangle is probably the fact that the vertebral artery winds through the region and can be prone to excess pressure when a person turns his/her head around to look backward.

Rectus Capitis  
Posterior Minor M.

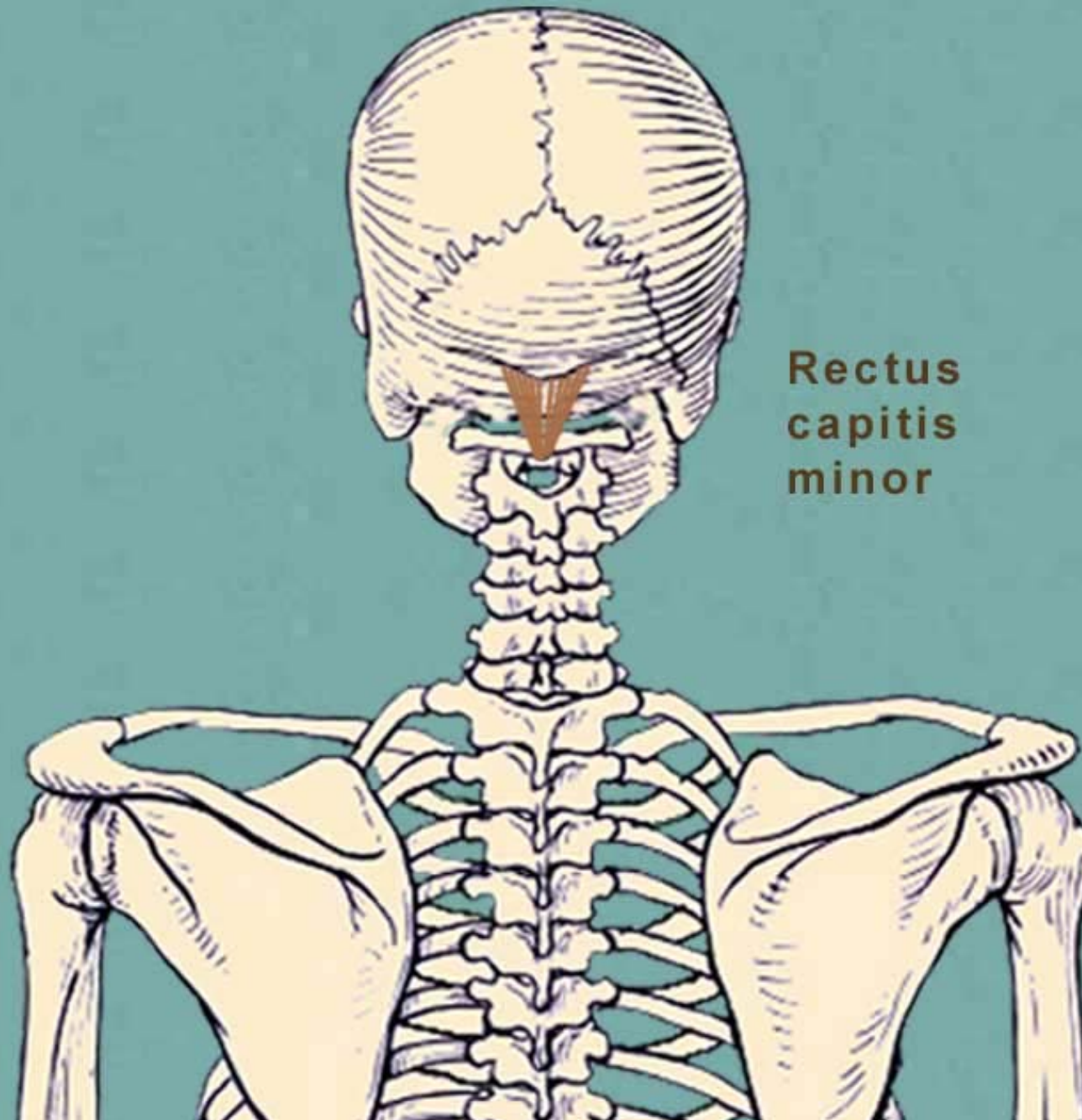
Rectus Capitis  
Posterior Major M.

Obliquus Capitis  
Superior M.

Obliquus Capitis  
Inferior M.



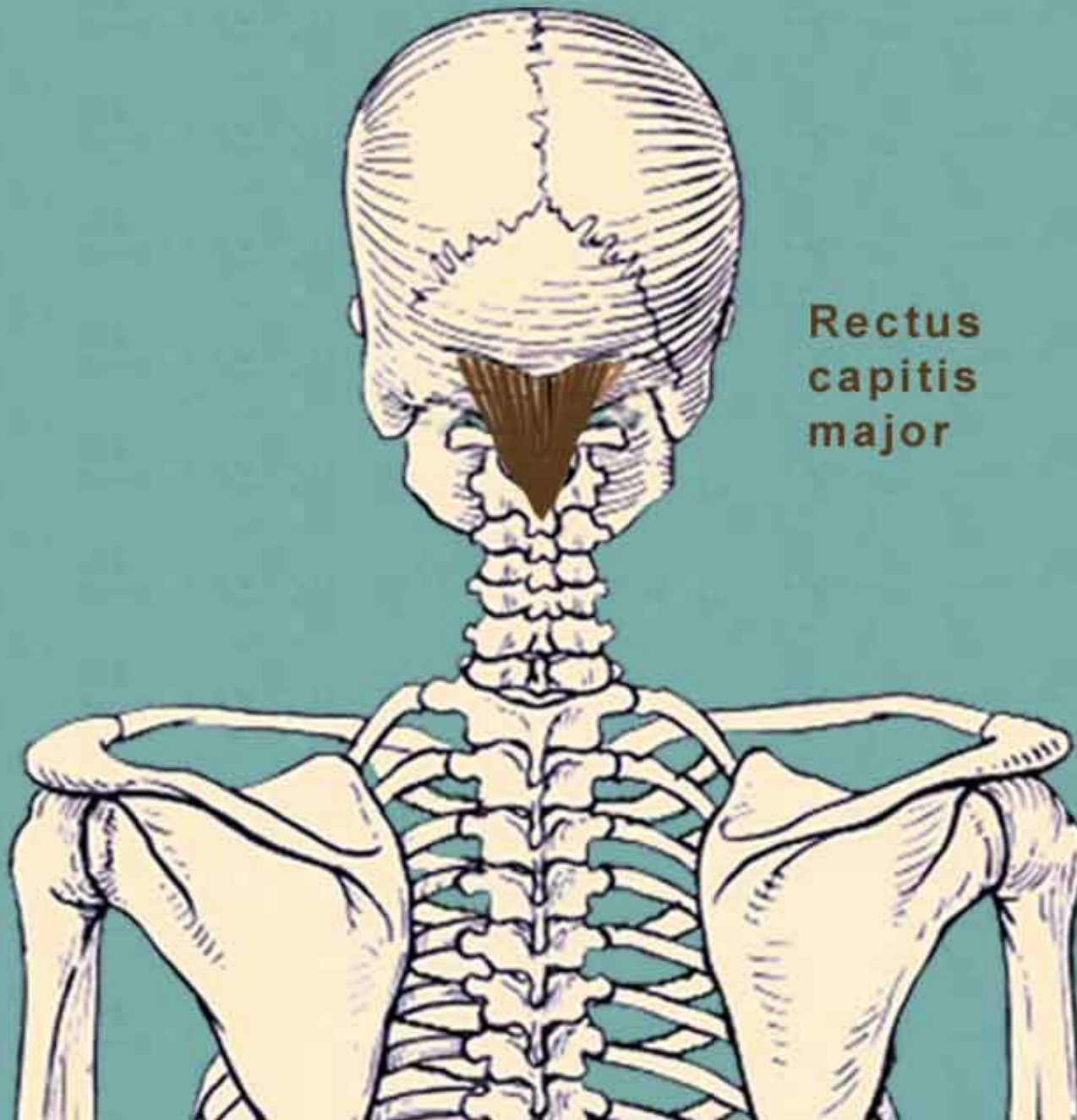
## Muscles of suboccipital triangle



The rectus capitis minor arises from the tubercle on the posterior arch of the atlas and rises to attach to the medial 1/3 of the superior nuchal line and the skull beneath.

Action: extend the skull

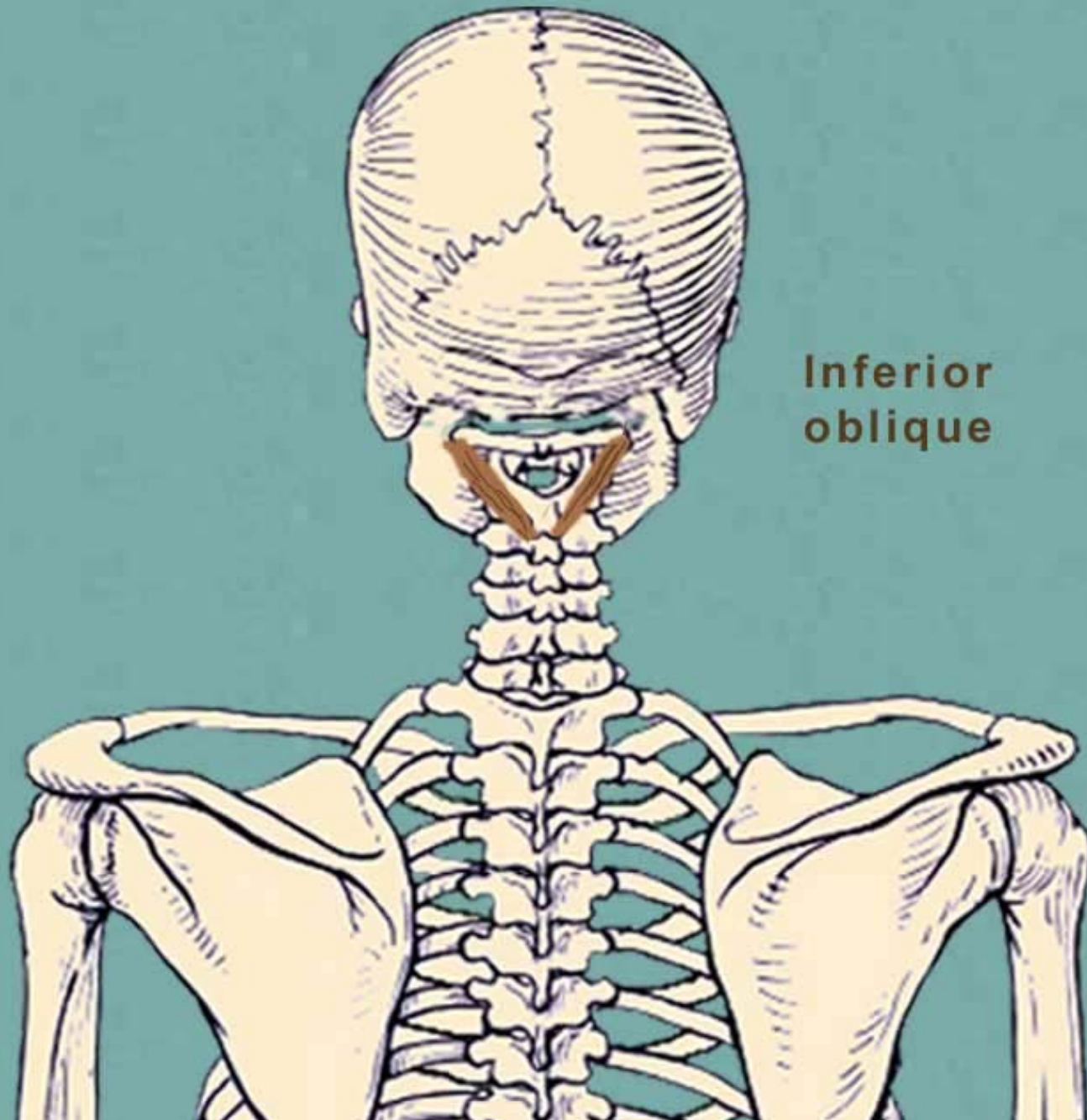
## Muscles of suboccipital triangle





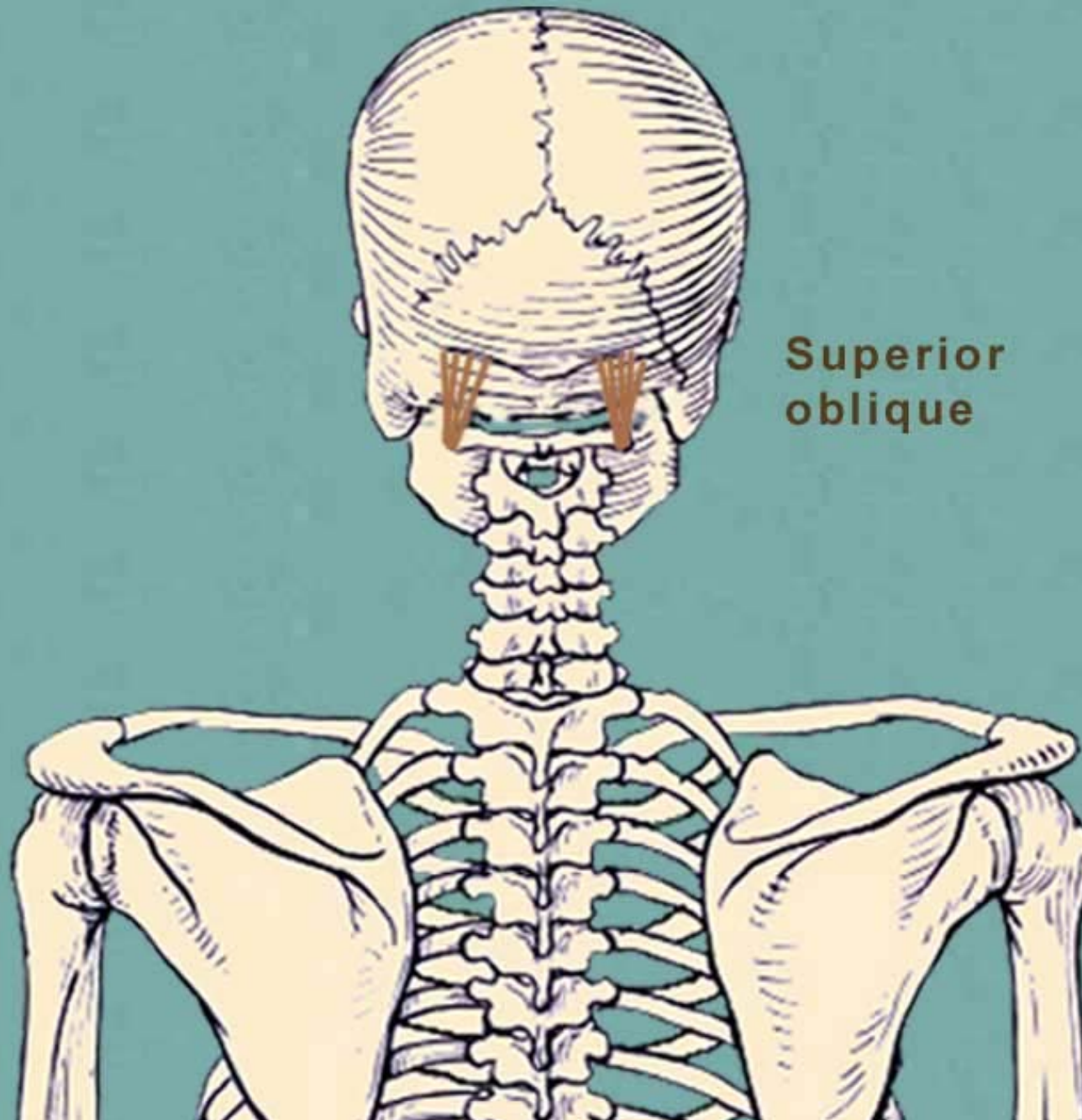
The rectus capitis major muscle arises from the spinous process of the axis and passes upwards to attach to most of the superior nuchal line. It overlies the rectus capitis minor. This muscle forms the upper and medial wall of the suboccipital triangle.  
Action: extension of skull

## Muscles of suboccipital triangle



As you can see, the inferior oblique muscle arises from the spine of the axis and passes upward and laterally to attach to the transverse process of the atlas. This muscle forms the lower lateral border of the suboccipital triangle. Action: turns the face towards the same side.

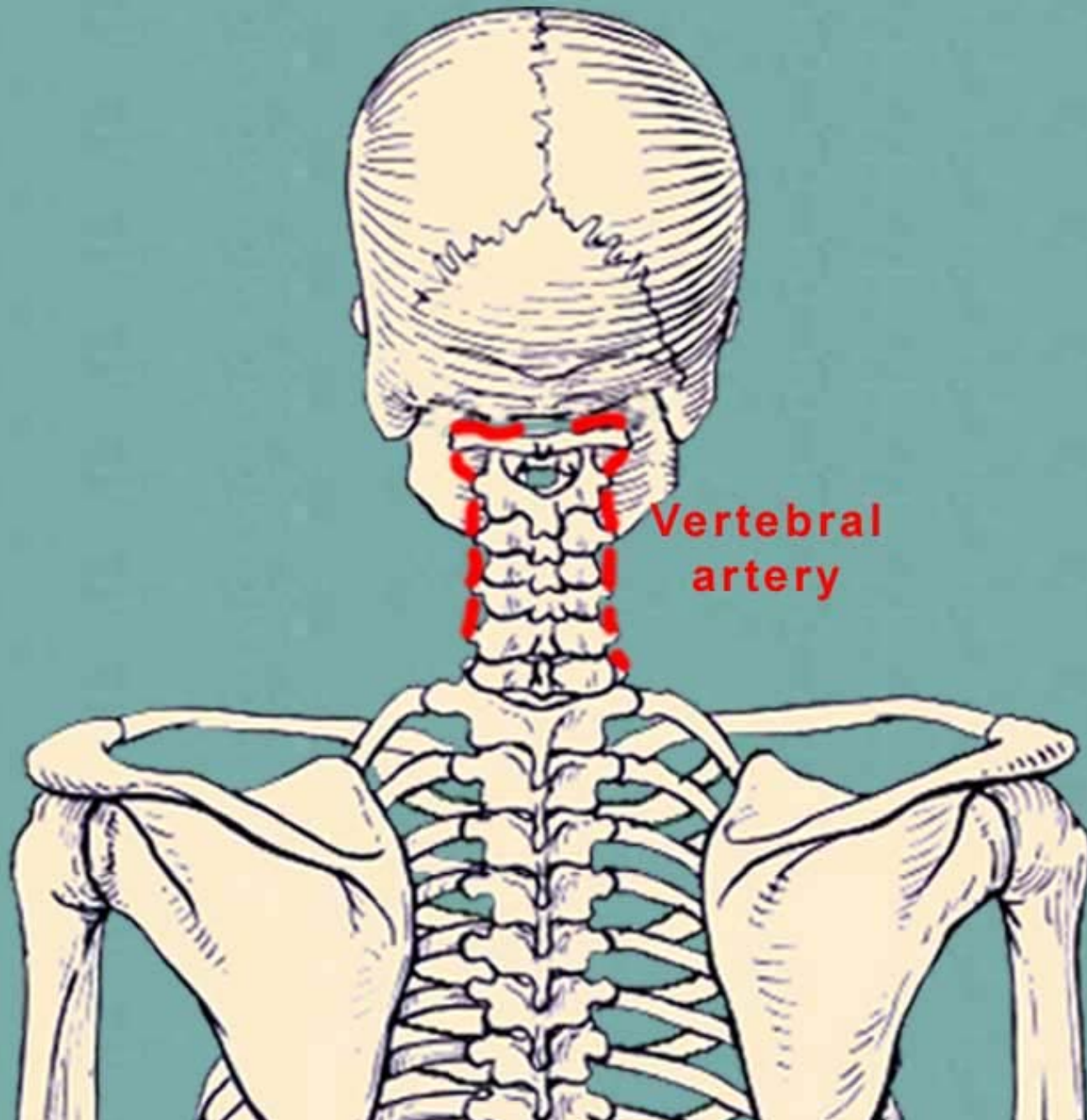
## Muscles of suboccipital triangle



The superior rectus oblique arises from the transverse process of the atlas and passes upward to the lateral part of the superior nuchal line. It forms the upper and lateral border of the suboccipital triangle.

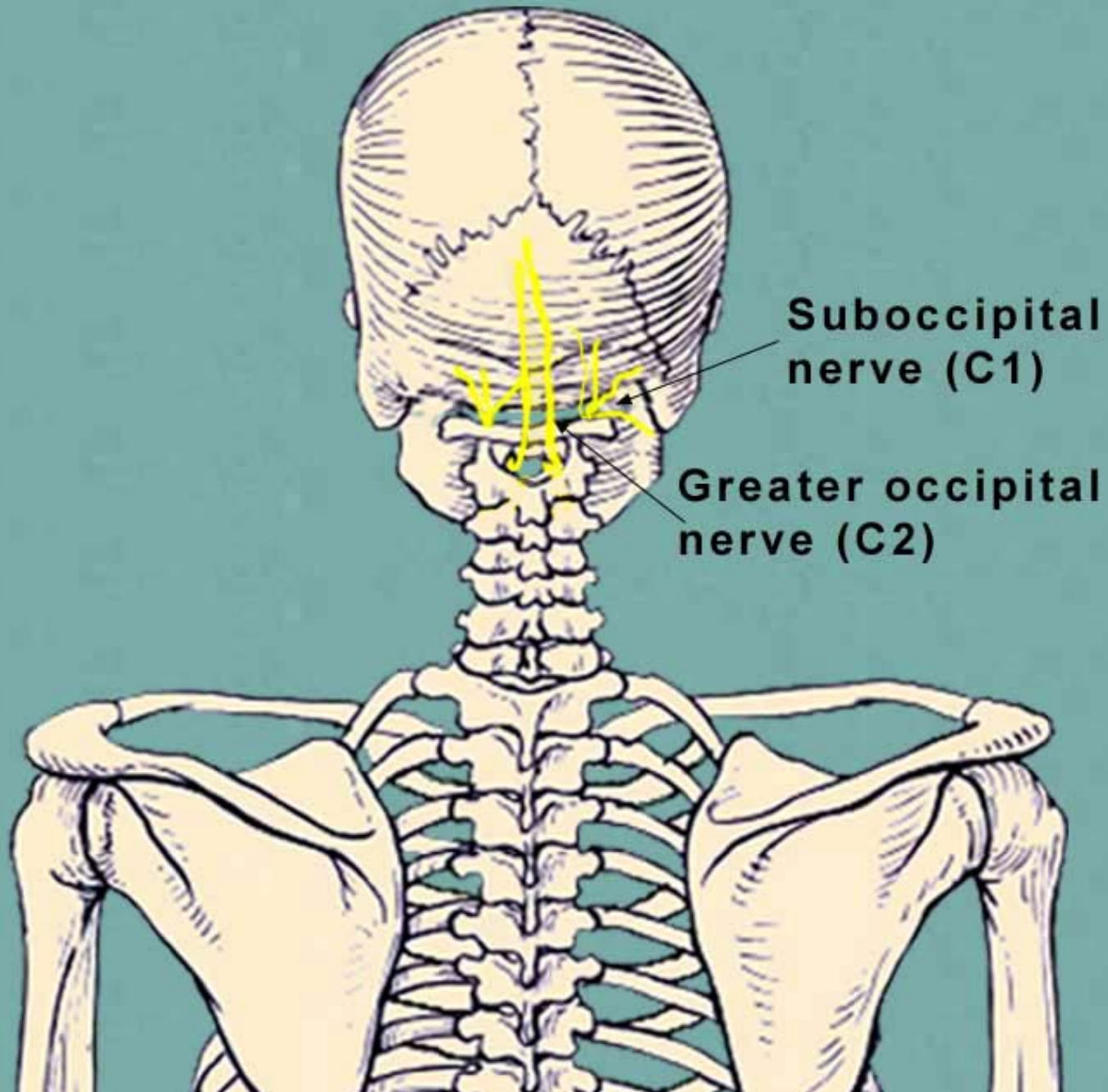
Action: bends the head backwards and to the same side.

## Artery of suboccipital triangle



The vertebral artery is one of the first branches of the subclavian artery as it passes through the neck. From its origin, it enters the foramen in the transverse process of the 6th cervical vertebra and passes upward through all foramina transversaria until it reaches the top of the posterior arch of the atlas. At this point it lies in a groove there and then enters the cranial cavity through the foramen magnum. One of its primary supplies is the visual cortex in the occipital lobe of the cerebrum.

## Nerves of suboccipital triangle

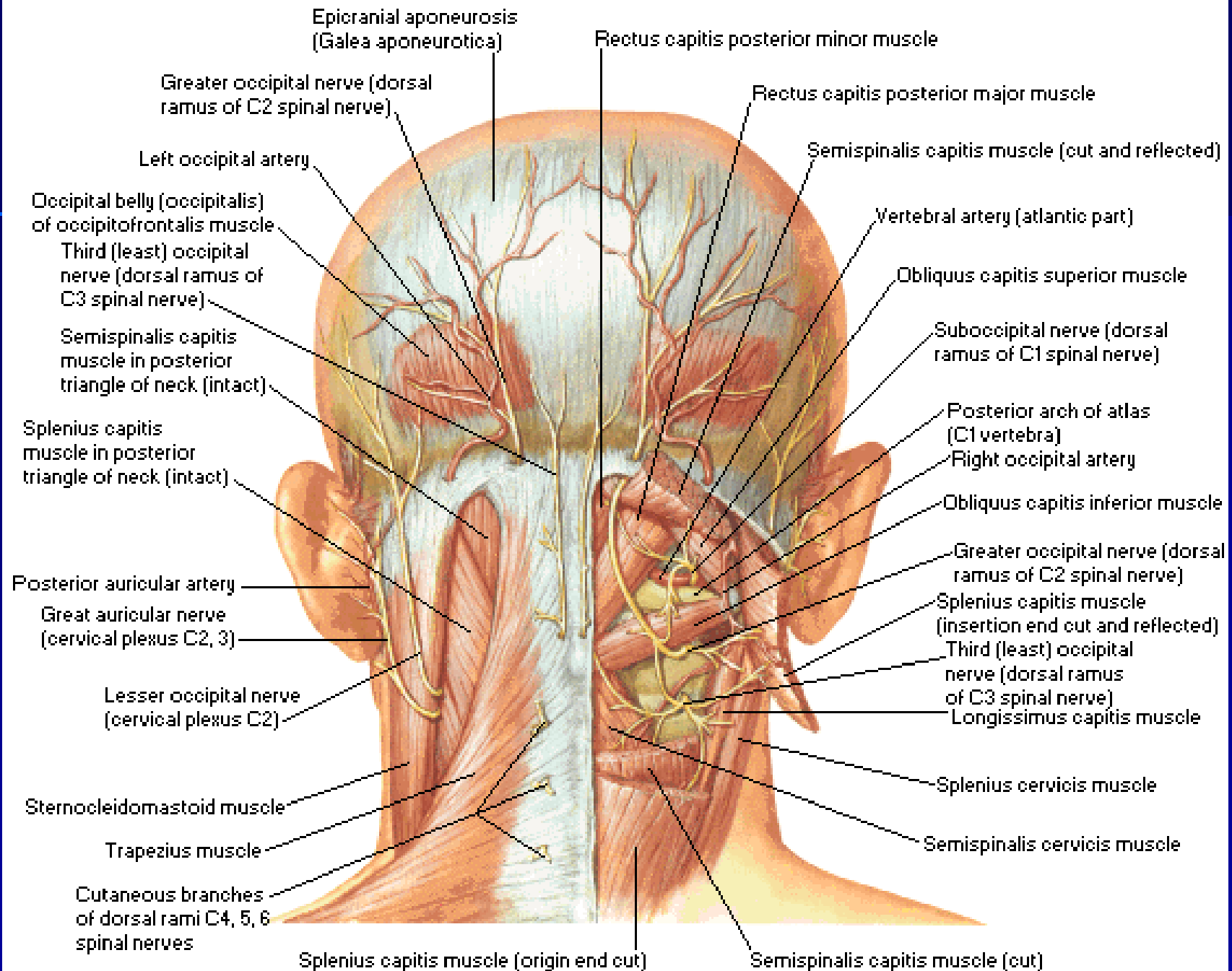


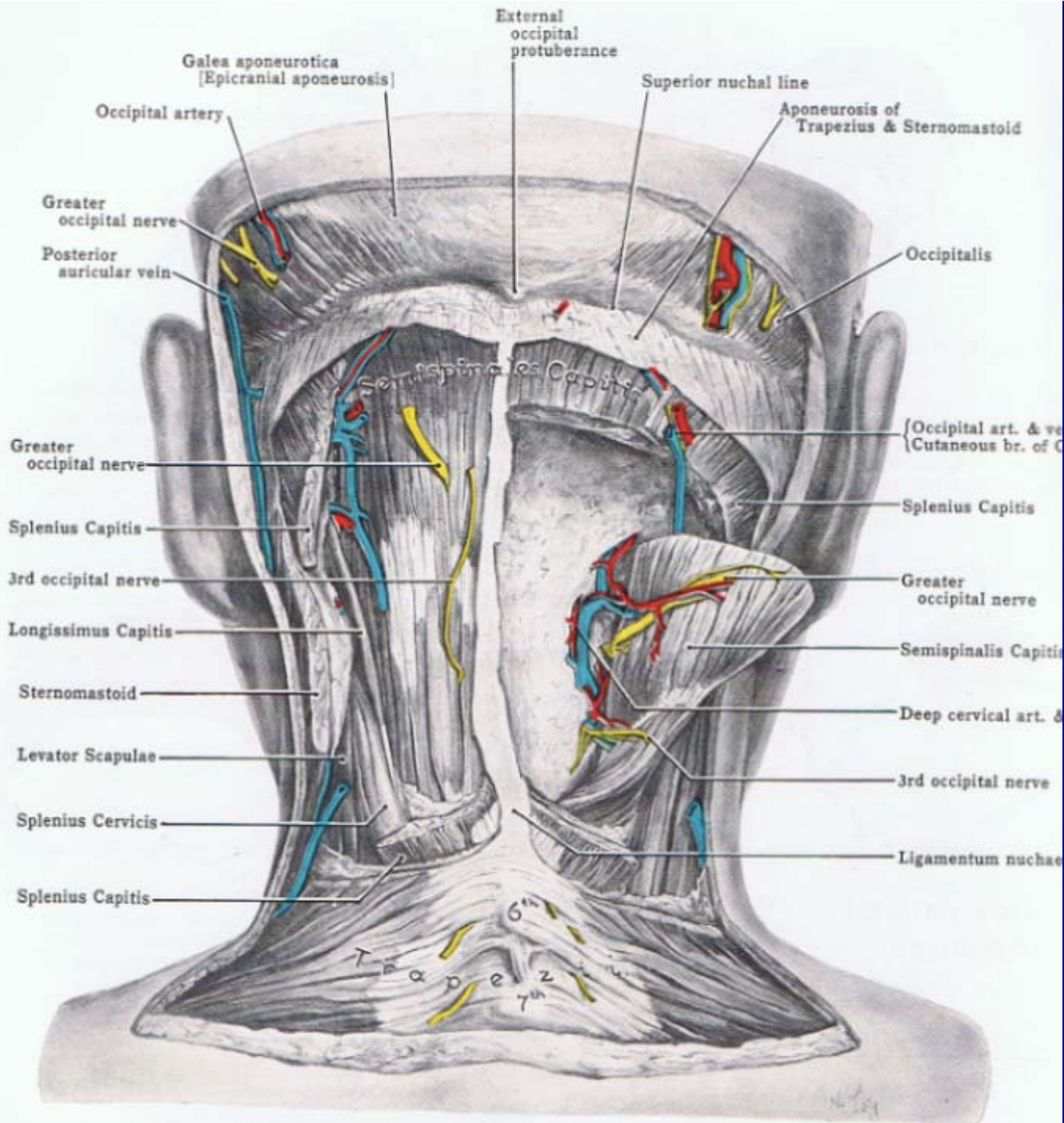


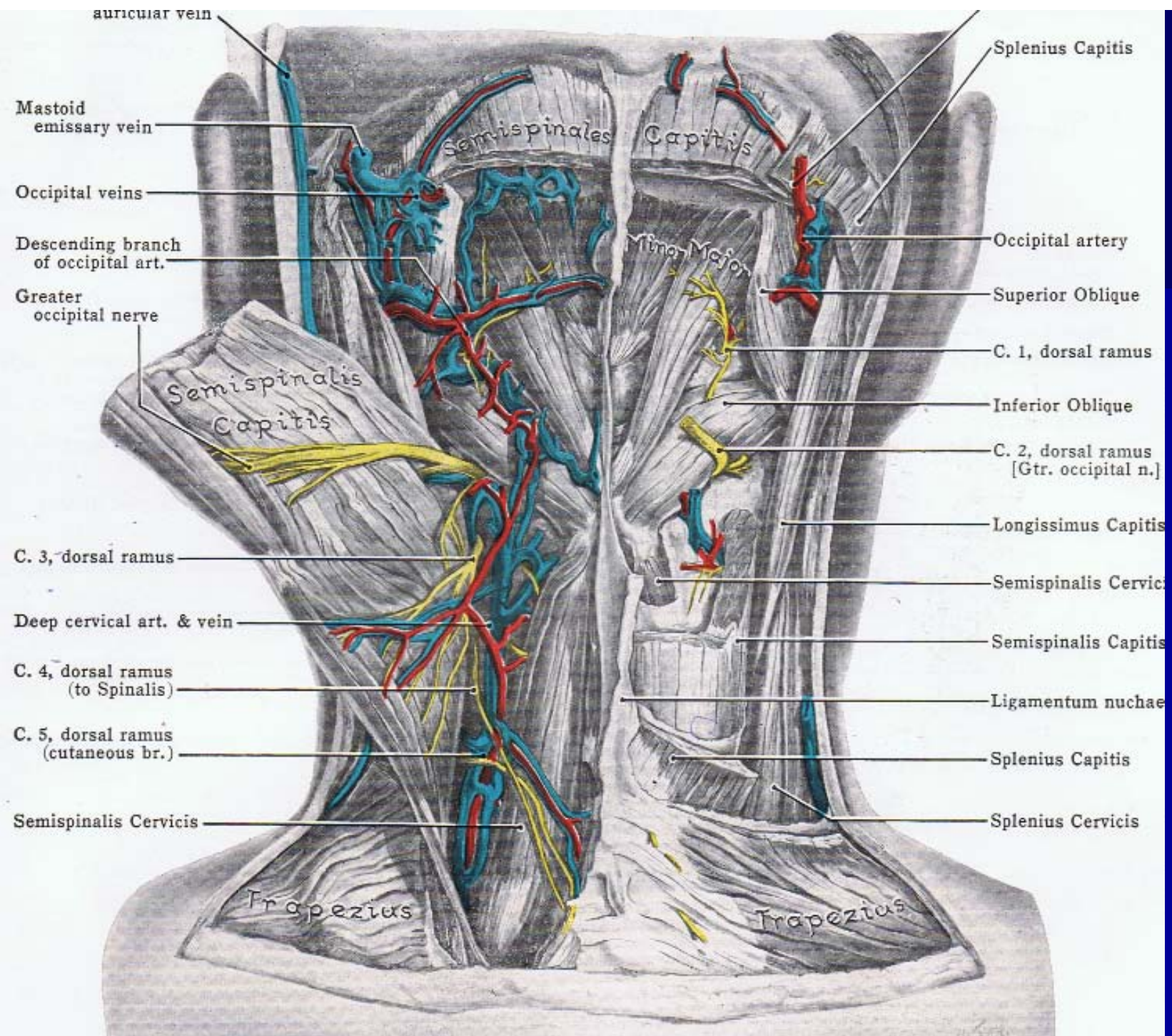
There are 2 nerves in the suboccipital region. The first cervical nerve arises from the spinal cord as a motor nerve and passes above the posterior arch of the atlas but deep to the vertebral artery. It will supply the muscles of the suboccipital triangle.

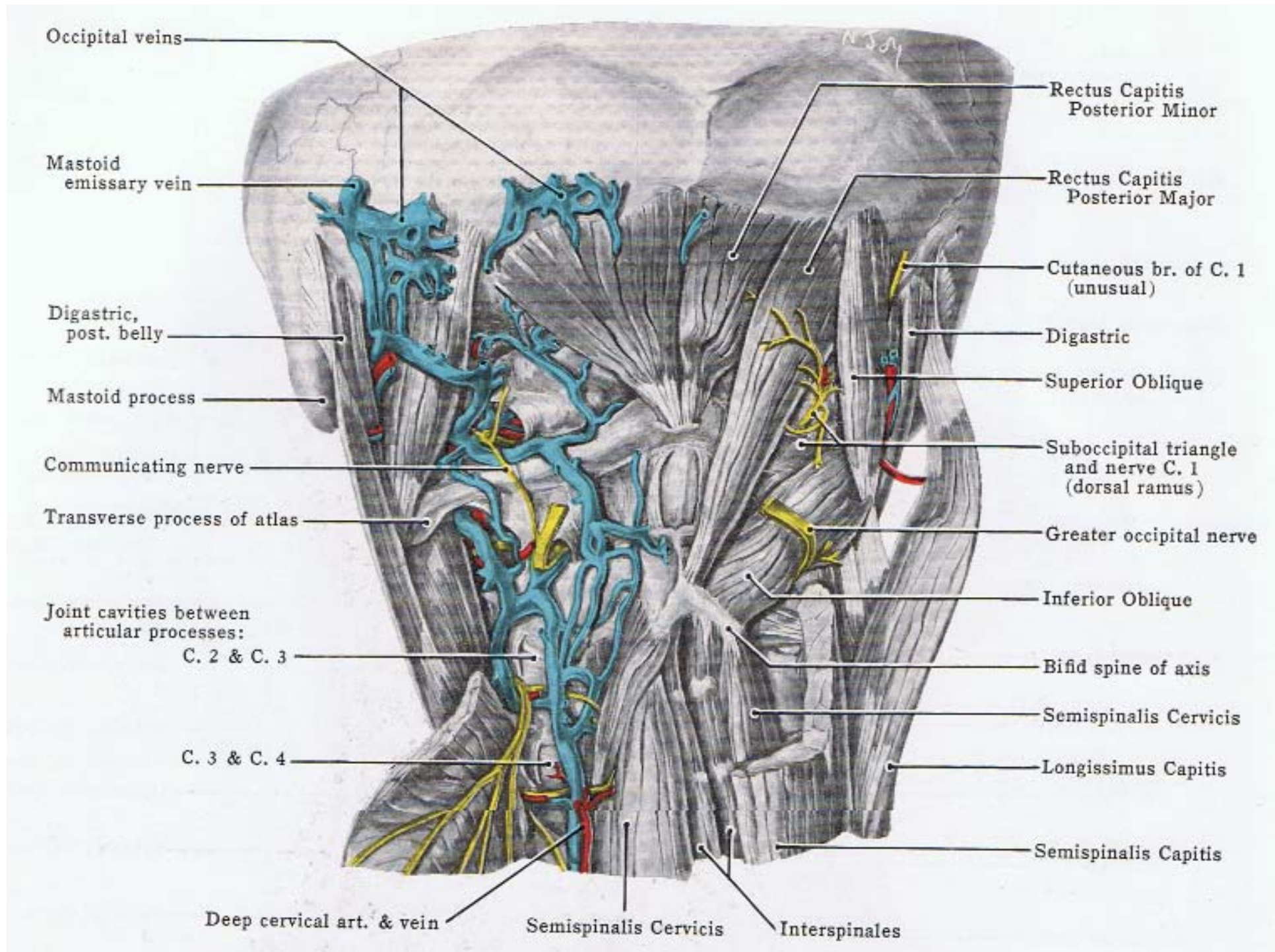
Arising from the 2nd cervical nerve is its posterior primary ramus which travels below the posterior arch of the atlas. It is a fairly large sensory nerve called the greater occipital nerve and supplies the posterior part of the scalp.

# Suboccipital Triangle

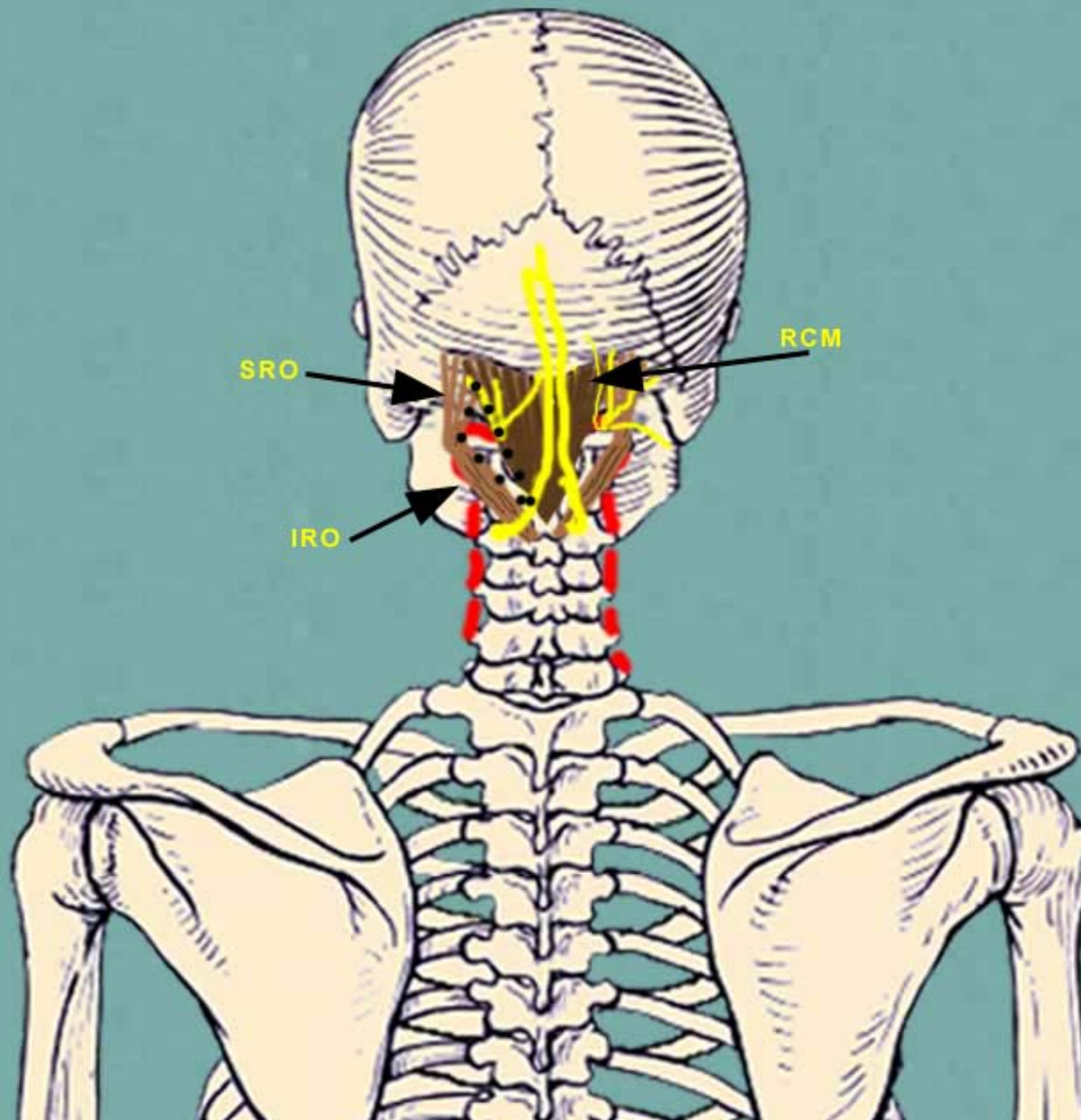








## Structures of the suboccipital triangle



Finally, you can see what the suboccipital triangle like when all of the structures are in place. Note the boundaries of the triangle:

rectus capitis posterior major (medial) (RCM)

inferior rectus oblique (inferior and lateral) (IRO)

superior rectus oblique (super and lateral) (SRO)

The triangle, itself, is represented by the dotted line.

Notice the structures that are located in the depth of the triangle:

posterior arch of the atlas

vertebral artery

C1 (posterior ramus)

All of the muscles of the suboccipital triangle are supplied by branches of the posterior ramus of C1. There apparently is no sensory root to C1.

Since the vertebral artery takes a circuitous course to get to the brain, and it is in a confined region between the base of the skull and the posterior arch of the atlas, it may be compressed when the head is rotated to the left or the right. This is the movement that one uses when backing a car out of a garage or driveway. The vertebral artery is also a common artery for arteriosclerosis to occur with plaque build up and narrowing of the artery. Persons with advanced arteriosclerosis may mention to a doctor that they see spots when they back their car up. When the artery is already narrowed by plaque and further constriction by rotating the head, there is momentary loss of blood supply to the visual cortex. Hence, spots. This suggestion by the patient may alert you to arteriosclerotic disease if it hasn't been identified yet.