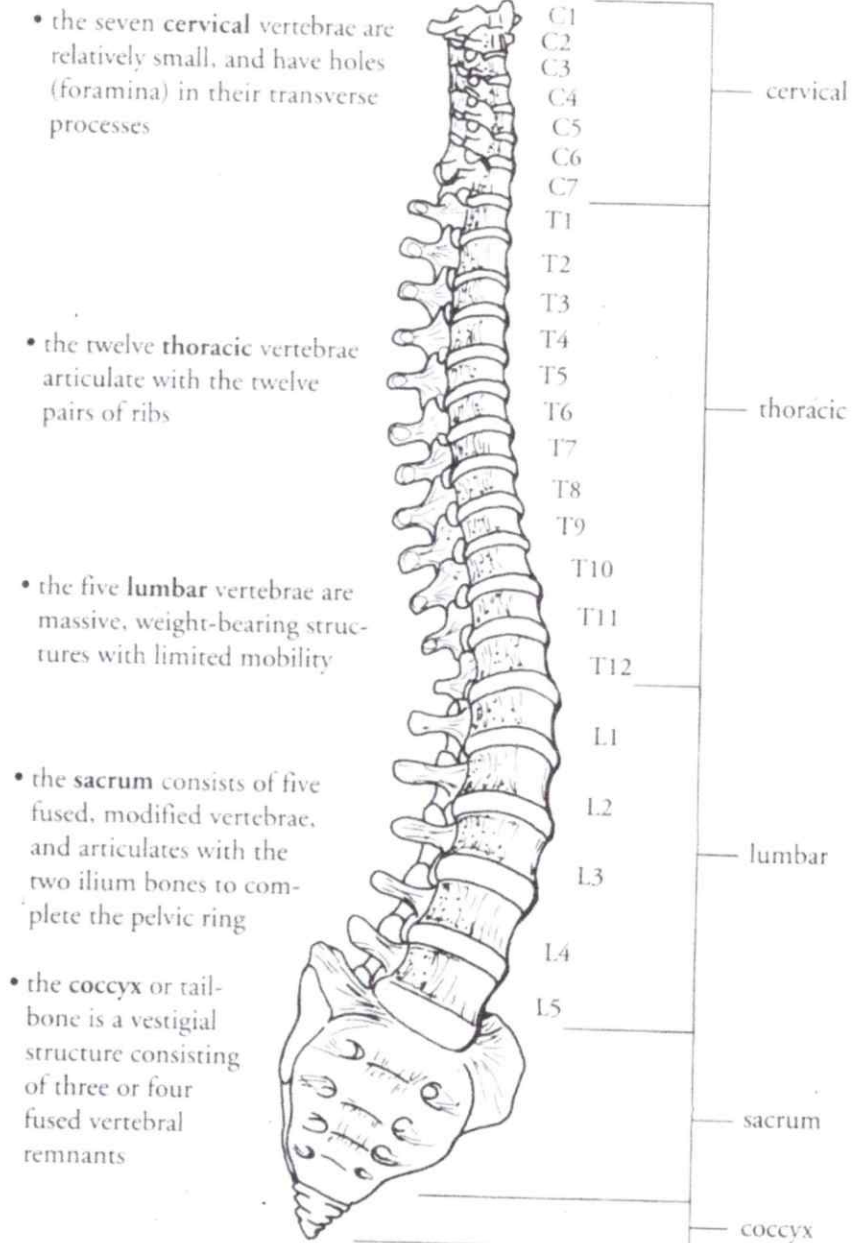
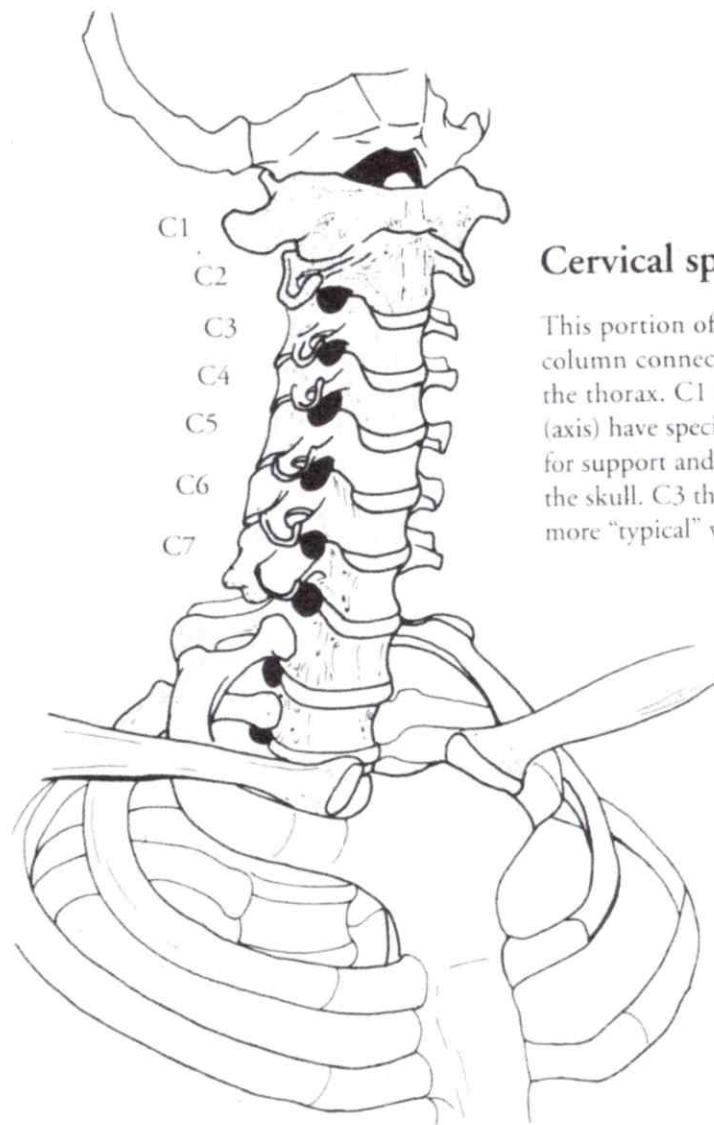


Vertebral column

We see obvious changes in size and shape of vertebrae as we examine the backbone from top to bottom:

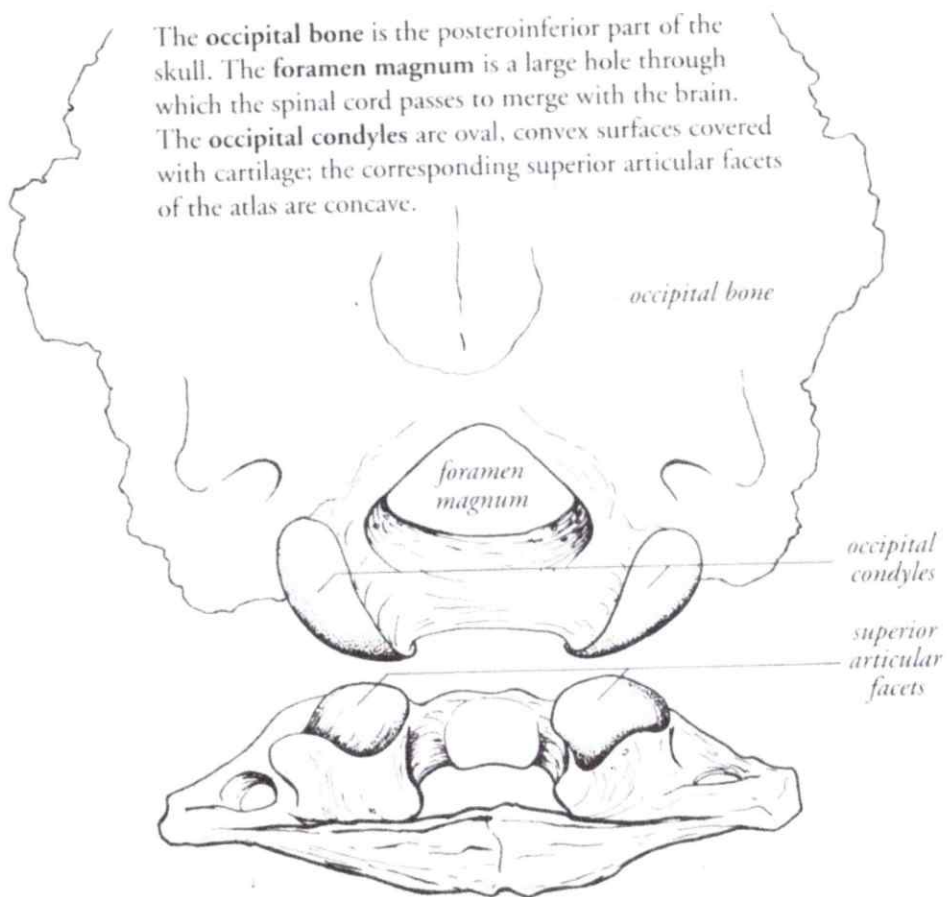




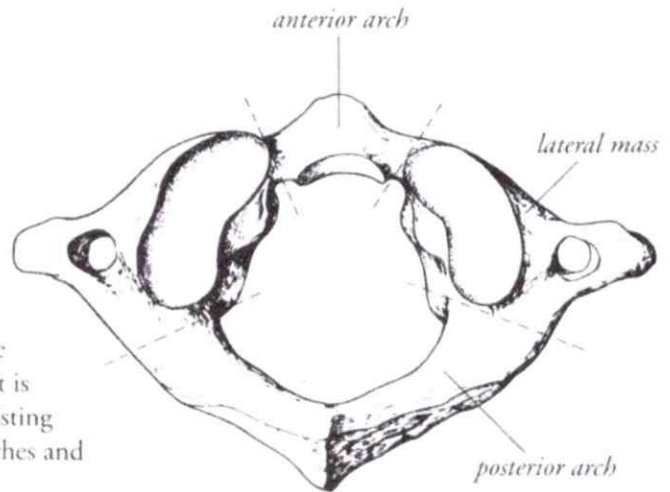
Cervical spine

This portion of the vertebral column connects the head to the thorax. C1 (atlas) and C2 (axis) have special modifications for support and movements of the skull. C3 through C7 are more "typical" vertebrae.

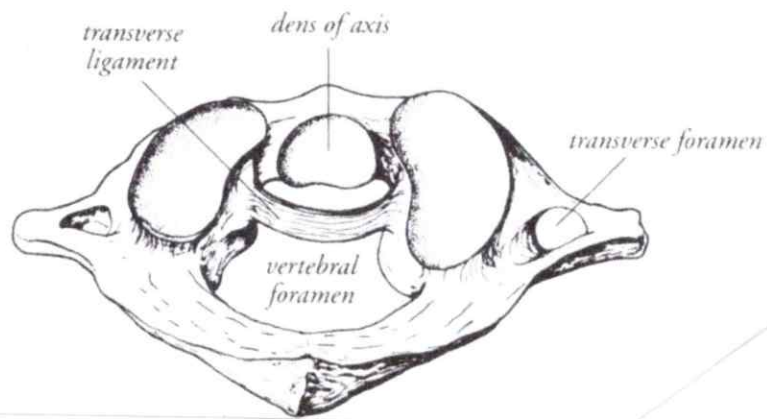
The **occipital bone** is the posteroinferior part of the skull. The **foramen magnum** is a large hole through which the spinal cord passes to merge with the brain. The **occipital condyles** are oval, convex surfaces covered with cartilage; the corresponding superior articular facets of the atlas are concave.



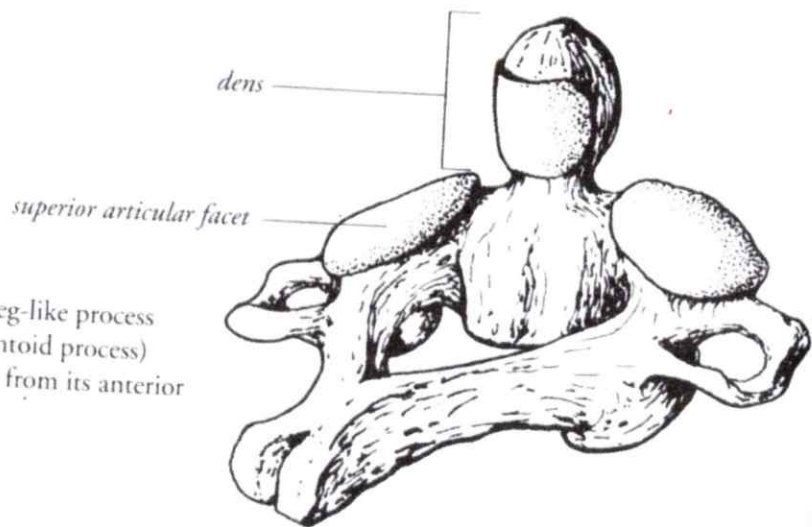
C1, the **atlas**, is greatly modified for articulation with the occipital region of the skull. It does not have a body or spinous process. It is essentially a bony ring consisting of anterior and posterior arches and two lateral masses.



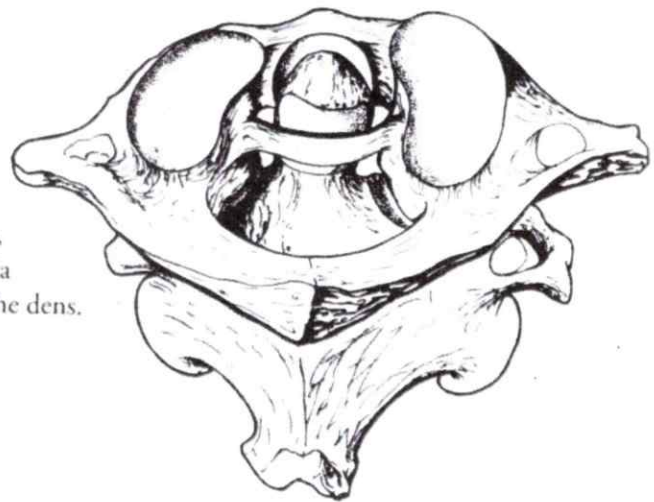
The transverse processes, containing the transverse foramina, project from the sides of the lateral masses. A transverse ligament connects the two lateral masses and divides the large central cavity into a posterior portion (the vertebral foramen, for passage of the spinal cord) and smaller anterior portion (which accommodates the dens of the axis).

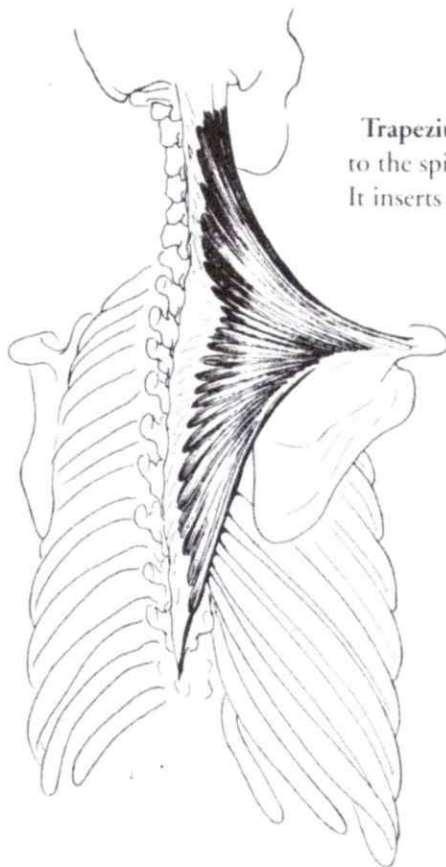


C2, the axis, has a peg-like process called the **dens** (odontoid process) projecting superiorly from its anterior side.



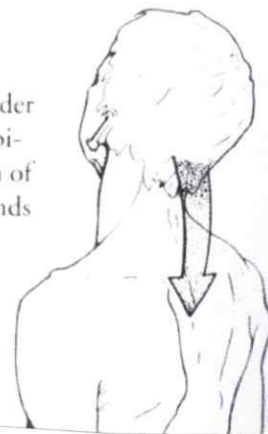
Considerable movement, especially rotation, is possible. The dens fits anteriorly against the anterior arch of C1, and posteriorly against an "articular surface" of the transverse ligament of C1. Thus, the pivot joint of C1-C2 consists of a ring-like structure rotating around the dens.





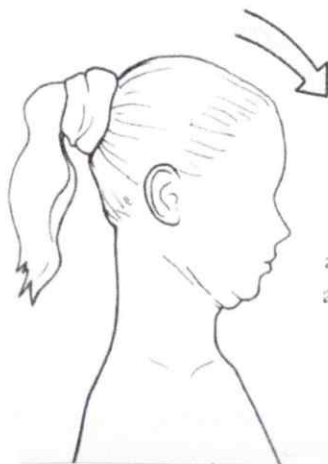
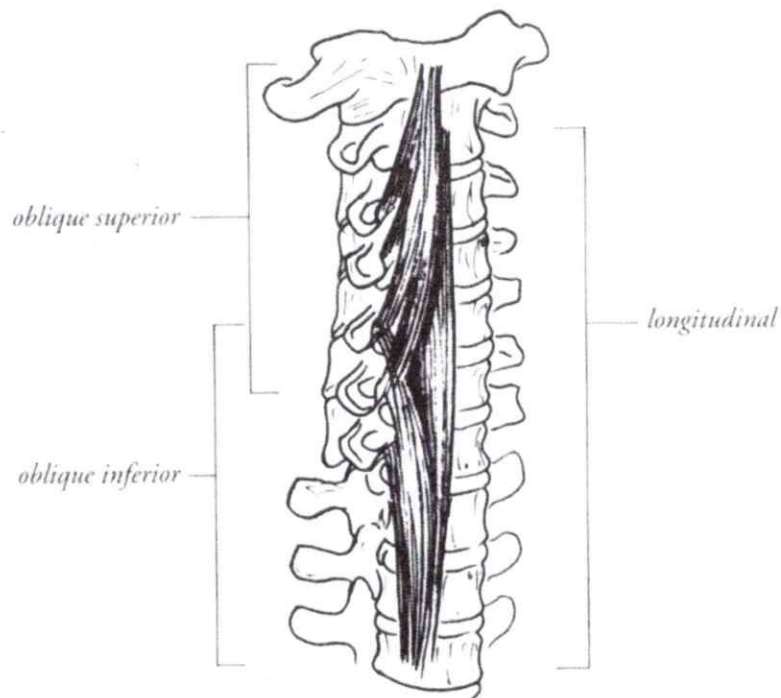
Trapezius also has a broad origin, extending from the occiput to the spinous processes of all cervical and thoracic vertebrae. It inserts on the superior scapula and clavicle.

When these shoulder bones are fixed, bilateral contraction of the trapezius extends the neck.

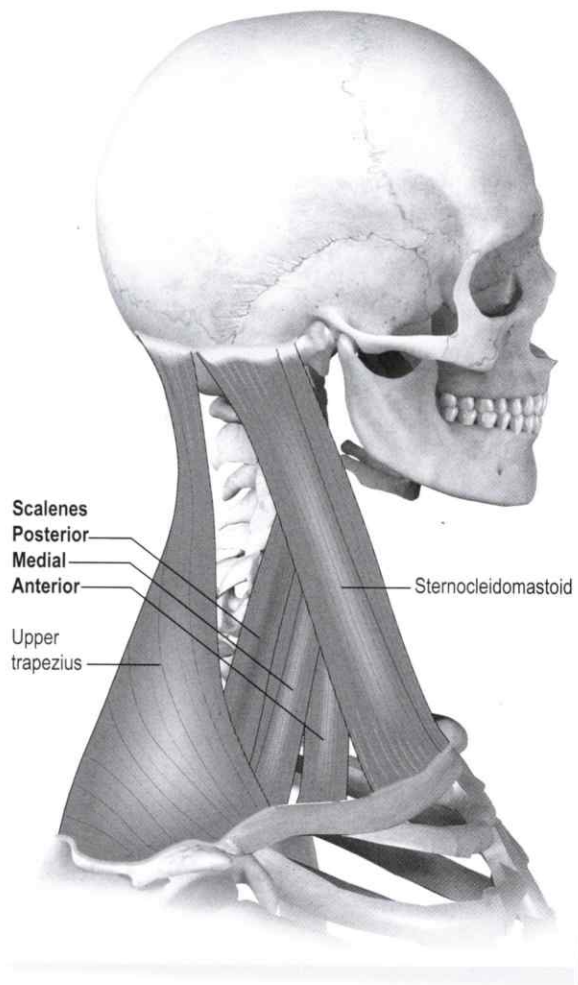


Anterior neck muscles

Longus colli is a deep muscle consisting of three portions. The longitudinal portion runs from the bodies of C2 through T3 to the bodies of C4-C7. The oblique superior portion runs from the anterior arch of C1 to the transverse processes of C3-C6. The oblique inferior portion runs from the bodies of T1-T3 to the transverse processes of C5-C7.



Contracting bilaterally, longus colli flexes the head and straightens the cervical spine. Unilaterally, it assists in sidebending and rotation of the head.



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