

Vertebral body height

The **lumbar vertebrae** are the five **vertebrae** between the rib cage and the **pelvis**.

They are the largest segments of the **vertebral column** and are characterized by the absence of the foramen transversarium within the **transverse process** (as it is only found in the cervical region), and by the absence of facets on the sides of the body. They are designated L1 to L5, starting at the top. The lumbar vertebrae help support the weight of the body, and permit movement.

Previous studies have demonstrated that the length of the **lumbar spine** is decreasing with **age**. Despite considerable **research** based on **sagittal** measurements, little is known about the changes in the volume of vertebrae. The objective of a study of Miękisiak et al. from **Opole, Lublin, Wrocław, Poland**. was to evaluate the changes in the volume of either column of the spine with age.

Computed tomography scans of 62 asymptomatic subjects, performed for **thoracolumbar** trauma evaluation were used to create virtual **3D** models. At least 10 patients were assigned to every decade of life from third to eight. They used a novel technique to measure the volume of anterior column (AC) and posterior column (PC) per each segment (a total of 310 segments). Midline sagittal images were used to measure **disc height** (DH) and **vertebral body height** (VH).

With age, both DH increases, whereas the VH decreases. The overall length of lumbar segment of the **spine** decreases with age. The volumetric measurements performed on same subjects showed that volume of both AC and PC does not change with age in females. In males, there is a weak but statistically significant correlation between AC volume and age and no change in the volume of PC. The ratio of PC:AC volume does not change with age in women, although it decreases slightly but significantly (in favor of AC) with age in males.

The overall length of **lumbar spine** decreases with age. This process is not a result of mere changes in the volume of either AC or PC ¹⁾.

¹⁾

Miękisiak G, Łątka D, Janusz W, Urbański W, Załuski R, Kubaszewski Ł. The change of volume of the lumbar vertebrae along with aging in asymptomatic population: a preliminary analysis. Acta Bioeng Biomech. 2018;20(4):25-30. PubMed PMID: 30520452.

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