

The Hyoid Bone

The hyoid bone, located posterior to the mandible, is unique because it does not articulate with any other bone in the human body – all of our other bones have some point of articulation with another bone. This situation leads directly to questions about the origin and function of the hyoid bone. Its uniqueness also underlines its very important function for and relates to the uniqueness of humans among animals.

The hyoid bone developed from the second pharyngeal arch of an ancestral fish – that is from bones that functioned as part of the gills and allowed the flow of water over the gills, etc. The pharyngeal arches still function this way in fish. But in tetrapods (4-limbed animals), some of these bones became the middle ear bones used in hearing (we will look at these bones later when we consider hearing as a special sense) in the development of tetrapods.

In tetrapods, the hyoid bone takes on a variety of shapes. In humans, the hyoid bone is a point of attachment for ligaments and muscles of the tongue and pharynx. This arrangement allows for human speech in all its variety (along with the flexibility of our lips, the placement of our pharynx, and brain development). This is why the hyoid bone is so important and important for you to know.

Further, the hyoid bone is also a tell-tale sign of strangling used in forensics. When a person is strangled the hyoid becomes highly compressed; it might not break but its shape changes. This distortion indicates strangling.

Until recently, no hyoid bones were found in anthropological finds of human ancestors or related hominids because this bone is easily lost and not likely to be maintained in fossil or other remains. The lack of such finds has made it difficult to assess when humans or related species might have developed speech. In 1989, however, a Neanderthal specimen was found which had a hyoid bone essentially the same as that of modern humans. This places the development of human-like speech back to 300,000 years ago. (see Arensburg B, Tillier AM, Vandermeersch B, Duday H, Schepartz LA, Rak Y. 1989. A middle Palaeolithic human hyoid bone, *Nature* 338: 758-760.).