

SKELETON OF THE HEAD

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Abstract

This article provides a comprehensive overview of the anatomical structure of the human skull, its main sections and functional significance. The division of the skull into the cranial and facial skeletons, the location and functions of the bones included in these parts are described in detail. The types of joints of the skull bones, their stages of development and their biological and physiological significance in human life are also analyzed. The article highlights the role of the skull in protecting the brain and sensory organs, its participation in the processes of chewing, breathing and speech formation. This material serves as a theoretical resource for students studying anatomy, teachers and students of medicine and biology.

Keywords: Skull, cranium, skeleton of the brain, facial skeleton, skull bones, brain, sensory organs, jaw bones, sutures, bone development, anatomical structure, human skeleton.

Introduction

The skull skeleton is one of the most important and complex structures of the human body. It not only protects the brain and sensory organs from external influences, but also determines the appearance of a person, and is directly involved in such vital processes as chewing food, breathing, and speech formation. Therefore, the study of the skull skeleton is considered one of the main and necessary sections of anatomy. The complexity of the structure of the skull skeleton is manifested in the fact that it consists of many bones and their strong, precise connection with each other.

The skull skeleton is called “cranium” in Latin and consists of the part where the brain is located and the bones that form the facial structure. In an adult, the skull skeleton consists of a total of twenty-two main bones, most of which are connected to each other by immovable sutures. Together, these bones create a strong protective shell for the brain and determine the anatomical shape of the face [1].

The skull skeleton is anatomically and functionally divided into two large parts. The first part is the skeleton of the brain, which provides the location and protection of the brain. The second part is the facial skeleton, which forms the external appearance of the face and forms the initial departments of the digestive and respiratory systems. This division helps to better understand the functions of the skull skeleton.

The cranial skeleton occupies the upper and back of the head. Its main function is to protect the brain from external shocks, pressure, and other harmful effects. The cranial skeleton consists of eight bones, which are divided into odd and even bones. Together, these bones form the cavity in which the brain is located - the cranial vault.

One of the key components of the cranial skeleton is the frontal bone, which occupies the anterior region of the skull and forms the anatomical structure of the forehead. This bone contributes significantly to the protection of the frontal lobes of the brain and plays an essential role in shaping the upper boundaries of the orbital cavities that house the eyes. In addition to its external features, the inner surface of the frontal bone displays distinct impressions of cerebral gyri and vascular grooves. These markings reflect the close anatomical relationship between the frontal bone and the brain, as well as the presence of blood vessels supplying the cranial contents. Through its position and structural characteristics, the frontal bone serves both protective and supportive functions within the cranial skeleton, ensuring the safety of neural tissues while maintaining the overall shape of the head.

The occipital bones form the top and sides of the head. They are paired and connected to each other and to other bones by special sutures. These bones are important in ensuring the strength of the skull. The occipital bone forms the back and lower part of the head. It contains the large foramen magnum, through which the spinal cord connects to the brain. This is extremely important for the central nervous system.

The temporal bones are located on the sides of the head, and the organs of hearing are located in this bone. In addition, the temporal bone is connected to the lower jaw bone, forming the only movable joint involved in the chewing process. The main bone and the ethmoid bone are located in the central part of the skull skeleton and are connected to many other bones. They play an important role in the formation of the brain, nasal cavity and eye sockets.

The facial skeleton forms the front part of the skull skeleton and determines the appearance of the face. This part consists of fourteen bones that are directly involved in the processes of chewing food, breathing and speech. One of the most important bones of the facial skeleton is the maxilla. This bone is the basis for the upper teeth, and also participates in the formation of the nasal cavity and eye sockets.

The lower jaw is the only movable bone in the facial skeleton, which plays an important role in chewing food and speech. Due to its mobility, a person can open and close his mouth and grind food. The cheekbones, on the other hand, give the face a unique shape and form the side walls of the eye sockets.

The nasal bones form the bridge of the nose and serve as an important anatomical support during breathing.

The small bones that make up the facial skeleton are also important. For example, the lacrimal bones form the tear ducts and provide moisture to the eyes. The palatine bones form the upper part of the oral cavity and participate in the beginning of the digestive process. The lower nasal concha help to warm and clean the air we breathe.

The bones of the skull skeleton are connected mainly by immobile joints - sutures. These sutures increase the strength of the bones and create reliable protection for the brain. Only the lower jaw bone is connected by a movable joint, providing functional movement. Therefore, the skull skeleton is considered both strong and functional at the same time.

The development of the skull skeleton begins in the embryonic period. In newborns, the bones of the skull are not fully developed, and between them there are soft areas - the cranium. This



structure facilitates the birth process and creates favorable conditions for the rapid growth of the child's brain. Over time, the cranium ossifies, and the skull skeleton is fully formed [5].

In conclusion, the skeleton of the head represents one of the most complex and essential components of the human body. It not only serves as a strong protective framework for the brain and vital sensory organs but also plays a crucial role in shaping the facial structure and supporting functions such as chewing, breathing, speech, and vision. The skull provides stability and structural support while allowing for the precise functioning of neurological and physiological systems. A comprehensive study of the skull's anatomy enhances our understanding of how the human body operates as an integrated system and contributes to the prevention of injuries, diagnosis of medical conditions, and maintenance of overall health. Therefore, knowledge of the head skeleton is fundamental for both medical practice and the promotion of a healthy lifestyle.

References

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