18/MHS06/042

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1.Discuss the differences between viscerocranium and neurocranium

**Composition of the Skull**

The adult human skull is comprised of twenty-two bones which are divided into two parts of differing embryological origin: the neurocranium and the viscerocranium.

**Neurocranium**

The neurocranium forms the cranial cavity that surrounds and protects the brain and brainstem. The neurocranium is formed from the occipital bone, two temporal bones, two parietal bones, the sphenoid, ethmoid and frontal bones; they are all joined together with sutures.

* The eight bones of the neurocranium form major portions of the skull and protect the brain.
* The neurocranium consists of two temporal bones situated to the base and side of the skull, and two parietal bones that make up the roof of the skull.
* A single occipital bone forms the base of the skull, and the frontal bone forms the forehead.
* The sphenoid and ethmoid bones located to the front of the skull form parts of the orbital sockets and nasal cavity; they also support and protect key organs found in the skull.

**Occipital Bone**

The occipital bone forms the base of the skull at the rear of the cranium. It articulates with the first vertebra of the spinal cord and also contains the foramen magnum, the large opening of the skill through which the spinal cord passes as it enters the vertebral column. The occipital bone borders the parietal bones through the heavily serrated lambdoidal suture, and also the temporal bones through occipitomastoid suture.

**Temporal Bones**

The temporal bones are situated at the base and sides of the skull, lateral to the temporal lobes of the brain. The temporal bones consist of four regions the squamous, mastoid, petrous and tympanic regions.

The squamous region is the largest and most superior region. Inferior to the squamous is the mastoid region, and fused between the squamous and mastoid regions is the petrous region. Finally, the small and inferior tympanic region lies anteriorly to the mastoid.

There are two processes that originate from the temporal bone:

1. The zygomatic process that projects from the lower squamous region and articulates with the zygomatic bone of the cheek.
2. The styloid process projects downwards from the interior of the temporal bone and provides attachment for several muscles associated with the tongue.

The temporal bones have four borders:

1. The occipitomastoid suture separates the occipital bone and mastoid portion of temporal bone.
2. The squamosal suture separates the parietal bone and squama portion of temporal bone.
3. The sphenosquamosal suture separates the sphenoid bone and squama portion of temporal bone.
4. The zygomaticotemporal suture separates the zygomatic bone and zygomatic process of temporal bone.

**Parietal Bones**

The two large parietal bones are connected and make up part of the roof and sides of the human skull. The two bones articulate to form the sagittal suture. In the front, the parietal bones form the coronal suture with the frontal bone, and in the rear, the lambdoid suture is formed by the occipital bone. Finally, the squamosal suture separates the parietal and temporal bones.

**Sphenoid Bone**

The sphenoid bone is situated in the middle of the skull towards the front and forms the rear of the orbit. It has been described as resembling a butterfly due to its wing-like processes. The sphenoid bone is divided into several parts: the body of the bone, two greater wings, two lesser wings, and the pterygoid processes.

The sphenoid bone is one of the most complex in the body due to its interactions with numerous facial bones, ligaments, and muscles. The body that forms the middle of the sphenoid bone articulates with the ethmoid and occipital bone and forms a key part of the nasal cavity; it also contains the sphenoidal sinuses.

The greater wings form the floor of the middle cranial fossa that houses the frontal lobes and pituitary gland, and also the posterior wall of the orbit. The lesser wings project laterally and form the floor of the anterior cranial fossa and the superior orbital fissure through which several key optical nerves pass.

**Ethmoid Bone**

The ethmoid bone is a small bone in the skull that separates the nasal cavity from the brain. It is lightweight due to its spongy, air-filled construction and is located at the roof of the nose and between the two orbits.

The ethmoid bone forms the medial wall of the orbit, the roof of the nasal cavity, and due to its central location it articulates with numerous bones of the viscerocranium. Inside the neurocranium it articulates with the frontal and sphenoid bones.

**Frontal Bone**

The frontal bone forms the front of the skull and is divided into three parts:

1. Squamous: This part is large and flat and forms the main region of the forehead.
2. Orbital: This part lies inferiorly and forms the superior border of the orbit.
3. Nasal: this part is smaller and articulates with the nasal bones and maxilla to contribute to the roof of the nose.

The frontal bone borders two other neurocranial bones—the parietal bones through the coronal sutures and the sphenoid bone through the sphenofrontal suture. It also articulates with the zygomatic and nasal bones and the maxilla.

### The Viserocranium

### The viscerocranium (face) includes these bones: vomer, 2 inferior nasal conchae, 2 nasals, maxilla, mandible, palatine, 2 zygomatics, and 2 lacrimals.

The viscerocranium or facial bones supports the soft tissue of the face. The viscerocranium consists of 14 individual bones that fuse together. However, the hyoid bone, ethmoid bone, and sphenoid bones are sometimes included in the viscerocranium.

### Zygomatic Bones

The two zygomatic bones form the cheeks and contribute to the orbits. They articulate with the frontal, temporal, maxilla, and sphenoid bones.

### Lacrimal Bones

The two lacrimal bones form the medial wall of the orbit and articulate with the frontal, ethmoid, maxilla, and inferior nasal conchae. The lacrimal bones are the two smallest bones located in the face.

### Nasal Bones

The two slender nasal bones located in the midline of the face fuse to form the bridge of the noise and also articulate with the frontal, ethmoid and maxilla bones. The inferior nasal conchae are located within the nasal cavity. They are spongy and curled in shape; their primary function is to increase the surface area of the nasal cavity, which also increases the amount of air that contacts the mucous membranes and cilia of the nose, thus filtering, warming, and humidifying the air before it enters the lungs. At the base of the nasal cavity is the small vomer bone which forms the nasal septum.

### Maxilla Bones

The maxilla bones fuse in the midline and form the upper jaw. They provide the bed for the upper teeth, the floor of the nose, and the base of the orbits. The maxilla articulates with the zygomatic, nasal, lacrimal, and palatine bones.

### Palatine Bones

The palatine bones fuse in the midline to form the palatine, located at the back of the nasal cavity that forms the roof of the mouth and the floor of the orbit.

### The Mandible

Finally, the mandible forms the lower jaw of the skull. The joint between the mandible and the temporal bones of the neurocranium, known as the temporomandibular joint, forms the only non-sutured joint in the skull.

2. Femoral triangle is a special area of the thigh, Discuss.

a)provides easy access to a major artery, coronary angioplasty  and peripheral angioplasty is often performed by entering the femoral artery at the femoral triangle. Heavy bleeding in the leg can be stopped by applying pressure to points in the femoral triangle. Another clinical significance of the femoral triangle is that the femoral artery is positioned at the midinguinal point (midpoint between the pubic symphysis and the anterior superior iliac spine); medial to it lies the femoral vein. Thus the femoral vein, once located, allows for femoral venipuncture. Femoral venopuncture is useful when there are no superficial veins that can be aspirated in a patient, in the case of collapsed veins in other parts of body (e.g. arms). The positive pulsation of the femoral artery signifies that the heart is beating and also blood is flowing to the lower extremity

b)It is also necessary to appreciate clinically that this is a case where the nerve is more lateral than the vein. In most other cases the nerve (relative to its associated artery and vein) would be the deepest or more medial followed by the artery and then the vein. But in this case it is the opposite. This must be remembered when venous or arterial samples are required from the femoral vessels

c)This area contains the superficial and deep basins of the inguinal lymph nodes, and is the location targeted in an inguinal lymphadenectomy. The basins are separated by the fascia lata. For patients with palpable nodal disease, removal of the superficial and deep basins are recommended. In a patient with a positive sentinel lymph node biopsy, generally only the superficial nodes are removed, unless Cloquet's node (the most superior of the deep nodes) is clinically positive

3. Describe all the muscles of the lower limb that participates during 1/metre social distancing at the period of Covid

1. The gluteus maximus extends the hip, while the gluteus medius and minimus are involved in hip rotation and abduction (moving hip out from the midline).
2. The adductor group (adductor brevis, longus, and magnus along with petineus and gracilis) moves the femur towards the midline from an abducted position.
3. The iliopsoas group of muscles (iliacus and psoas major) is responsible for hip flexion.
4. The lateral rotator group of muscles (externus and internus obturators, the piriformis, the superior and inferior gemelli, and the quadratus femoris) turns the anterior surface of the femur outward. This motion is aided by the gluteus maximus and the adductor magnus.

4.What does corona virus affect in the body with your understanding of Gross Anatomy.

Viruses work by hijacking cells in the body. They enter host cells and reproduce. They can then spread to new cells around the body.

Coronaviruses mostly affect the respiratory system, which is a group of organs and tissues that allow the body to breathe.

Respiratory illnesses affect different parts of this respiratory system, such as the lungs. A coronavirus typically infects the lining of the throat, airways, and lungs.

Early symptoms of coronavirus may include coughing or shortness of breath. In some cases, it can cause severe damage to the lungs.

For example, some people might develop acute repiratory distress syndrome, leading to severe breathing difficulties.

Usually, the immune system will identify and respond to coronavirus early by sending special proteins, or antibodies, to fight the infection.

The immune response to infection has side effects for the body, including fever. During an infection, white blood cells release pyrogens, a substance that causes fever.

A temperature of greater than [100.4°F](https://www.clinicalcorrelations.org/2019/06/18/the-definition-of-a-fever/) from an oral thermometer indicates a fever.

Sometimes other symptoms will occur alongside a fever, including:

* runny nose
* head and body aches
* difficulty sleeping
* sore throat
* sweats
* chills

These symptoms will usually last until the body fights off the coronavirus.

Symptoms might not show up straightaway. For example, people with COVID-19 may get symptoms

Coronavirus can also damage the heart, liver, or kidneys. In some people, it will affect the blood and immune system. For example, COVID-19 can cause heart, renal, or multiple organ failure, resulting in death.

Some people are more at risk of severe complications than others. The risk can increase for those with an underlying health condition, such as:

* heart disease
* diabetes
* lung disease

Older adults are also at risk of severe illness from coronavirus. Other groups at risk include:

* people with HIV
* pregnant women
* people with asthma