**COURSE: GROSS ANATOMY II**

**COURSE CODE: MLS 208**

**NAME: OJO OGOFOLUWA MODUPE**

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**GROSS ANATOMY ASSIGNMENT**

1. Discuss the differences between viscerocranium and neurocranium.
2. Femoral area is a special area of the thigh, discuss.
3. Describe all the muscles of the lower limb that participates during 1 metre social distancing at the period of COVID-19.
4. What does corona virus affect in the body with your understanding of gross anatomy

**Question 1: Discuss the differences between viscerocranium and neurocranium.**

1. The neurocranium forms the cranial cavity that surrounds and protects the brain and brainstem thus it can also be referred to as the brain box or cranial cavity .it is divided into roof (calvarium) and base (cranial base). 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.
2. The viscerocranium bones form the anterior and lower regions of the skull and include the mandible, which attaches through the only truly motile joint found in the skull thus it can also be referred to as facial skeleton. The facial skeleton contains the vomer, two nasal conchae, two nasal bones, two maxilla, the mandible, two palatine bones, two zygomatic bones, and two lacrimal bones

The bones of the viscerocranium includes:

- **Nasal bones**- which form the bridge of the nose.

- **Maxillae** - the large anterior bilateral bones of the viscerocranium, which provide attachment for several muscles of facial expression

- **Zygomatic bones** - more commonly known as the 'cheek bones'

- **Lacrimal bones** - small paired bones posterior to the maxillae which form the nasolacrimal ducts.

- **Ethmoid bone** - the irregular shaped bone, which contributes to several bony structures of the nasal cavity.

- **Vomer**- a flat, vertical bone which forms a portion of the nasal septum, posterior to the perpendicular plate of the ethmoid bone.

or wall of the orbit

- **Palatine bones**, which form the the posterior portion of the hard palate.

-  **Mandible**- This is referred to as the 'jaw' bone, which houses the teeth of the mandibular dental arch.

While the neurocranium bones includes;

- **Sphenoid bone** - the 'keystone' to the cranium as a whole. It contributes to several bony landmarks and surfaces of the cranium e.g. posteri  the cranium can be subdivided into a roof (known as the calvarium), and a base

**- Calvarium**: Comprised of the frontal, occipital and two parietal bones.

- **Cranial base**: Comprised of six bones – the frontal, sphenoid, ethmoid, occipital, parietal and temporal bones. These bones are important as they provide an articulation point for the 1st cervical vertebra (atlas), as well as the facial bones and the mandible (jaw bone).

**Question 2: Femoral area is a special area of the thigh. Discuss**.

### Femoral area consists of the femoral triangle which is an anatomical region of the upper third of the [thigh](https://en.wikipedia.org/wiki/Thigh). It is a subfascial space which appears as a triangular depression below The femoral triangle contains some of the major neurovascular structures of the lower limb. Its contents (lateral to medial) are:

The [inguinal ligament](https://en.wikipedia.org/wiki/Inguinal_ligament) when the thigh is flexed, abducted and laterally rotated.

The femoral triangle is bounded;

* [Superiorly](https://en.wikipedia.org/wiki/Anatomical_terms_of_location) (also known as the base) by the [inguinal ligament](https://en.wikipedia.org/wiki/Inguinal_ligament).
* [Medially](https://en.wikipedia.org/wiki/Anatomical_terms_of_location) by the medial border of the [adductor longus](https://en.wikipedia.org/wiki/Adductor_longus) muscle. (Sometimes the femoral triangle is considered to be smaller hence the medial border being at the lateral border of the adductor longus muscle.)
* [laterally](https://en.wikipedia.org/wiki/Anatomical_terms_of_location) by the medial border of the [sartorius](https://en.wikipedia.org/wiki/Sartorius_muscle) muscle.
* Femoral nerve – Innervates the anterior compartment of the thigh, and provides sensory branches for the leg and foot.
* Femoral artery – Responsible for the majority of the arterial supply to the lower limb.
* Femoral vein – The great saphenous vein drains into the femoral vein within the triangle.
* Femoral canal – A structure which contains deep lymph nodes and vessels.
* Femoral sheath; In the femoral triangle, the contents (excluding the femoral nerve) are enclosed in a wrapping of fascia called the femoral sheath. The sheath is funnel-shaped, and best described as a sleeve of fascia extending towards the apex of the femoral triangle, where it fuses with the adventitia of the vessels. It is continuous superiorly with the transversalis fascia and iliac fascia of the [abdomen](https://www.kenhub.com/en/library/anatomy/regions-of-the-abdomen).

Clinical significance:

The femoral pulse can be palpated through the skin in the femoral triangle. The pulse can be located on the medial aspect of the proximal thigh at the mid-inguinal point. The artery can be used for drawing arterial blood when the pressure in the radial and ulnar [arteries in the upper limb](https://www.kenhub.com/en/library/anatomy/neurovasculature-of-the-upper-limb) is too low to locate the arteries.

The femoral vein is frequently used to obtain access to the right side of the [heart](https://www.kenhub.com/en/library/anatomy/heart) through the [inferior vena cava](https://www.kenhub.com/en/library/anatomy/inferior-vena-cava). This approach is commonly used when repairing a patent foramen ovale, a congenital heart defect involving the persistence of an embryological opening between the [right and left atria](https://www.kenhub.com/en/library/anatomy/the-atria-of-the-heart).

in cardiology, catheterization of the femoral artery provides access to the arch of the [aorta](https://www.kenhub.com/en/library/anatomy/aorta) through the descending and abdominal aorta. This approach is used to obtain access to the ascending aorta for [aortic valve](https://www.kenhub.com/en/library/anatomy/heart-valves) replacements, as well as to the [coronary arteries](https://www.kenhub.com/en/library/anatomy/blood-supply-of-the-heart) for angiography and angioplasty procedures. The left side of the [heart](https://www.kenhub.com/en/library/anatomy/heart) is also easily accessible by this approach.

The proximal opening of the femoral canal, the femoral ring, is a weak point in the lower abdominal wall. This is the site where femoral hernias occur. Femoral hernias are the protrusion of some of the abdominal viscera, usually part of the [small intestine](https://www.kenhub.com/en/library/anatomy/the-small-intestine), into the femoral triangle

**Question 3: Describe all the muscles of the lower limb that participates during 1 metre social distancing at the period of COVID-19.**

* **Iliopsoas and rectus femoris** – keeps the thigh flexed at the hip, resisting gravity as it tries to pull the lower extremity down. Flexes the thigh at the hip, driving the knee forwards.
* **Quadriceps femoris** – extends the leg at the knee, positioning the foot for landing. It maintains the extended position of the knee. There are four heads of the Quadriceps femoris: rectus femoris, vastus lateralis, vastus medialis, vastus intermedius
* **Hamstring muscles** –  flexes the leg at the knee joint. extends the thigh at the hip.

- **Gluteus** **minimus, gluteus medius and tensor fascia lata** – abduct the lower limb. Their contraction keeps the pelvis level by counteracting the imbalance created from having most of the body-we

**- Posterior compartment of the leg** – plantarflexes the ankle. The prime movers include gastrocnemius, soleus and tibialis posterior.

Anterior compartment of the leg – maintains ankle dorsiflexion so that the heel is in place for landing. ight on one leg.

**Question 4: What does corona virus affect in the body with your understanding of gross anatomy**

Coronaviruses typically affect the respiratory system, causing symptoms such as coughing and shortness of breath. It begins infecting epithelial cells in the lining of the lung. A protein on the receptors of the virus can attach to a host cell's receptors and penetrate the cell. Inside the host cell, the virus begins to replicate until it kills the cell.

This first takes place in the upper respiratory tract, which includes the nose, mouth, larynx and bronchi.

The severe cases and critical cases are due to the virus going down the windpipe and entering the lower respiratory tract, where it seems to prefer growing.

As the virus continues to replicate and journeys further down the windpipe and into the lung, it can cause more respiratory problems like bronchitis and pneumonia

Pneumonia is characterized by shortness of breath combined with a cough and affects tiny air sacs in the lungs, called alveoli. The alveoli are where oxygen and carbon dioxide are exchanged.

When pneumonia occurs, the thin layer of alveolar cells is damaged by the virus. The body reacts by sending immune cells to the lung to fight it off.

And that results in the linings becoming thicker than normal. As they thicken more and more, they essentially choke off the little air pocket, which is what is needed in the as oxygen in the blood.

The restriction of oxygen to the bloodstream deprives other major organs of oxygen including the liver, kidney and brain. Furthermore if the lung is damaged and not enough oxygen is supplied to the rest of the body, respiratory failure could lead to organ failure and eventual death.