Name; JacksonAbara Emmanuella Odegwa

Department;Nursing

Matric No;18/MHS07/027

Course code;ANA 210

Course Title;Gross Anatomy

The importance of vasculature in relation to immune system and outbreak of Pandemic Covid-19 on the human body

Until a vaccine is available, our immune systems will need to adapt unaided to COVID-19.The immune system is the body's multi-level defence network against potentially harmful bacteria, viruses and other organisms.

A healthy lifestyle helps one's immune system to be in the best shape possible to tackle pathogens, but it's better to stop them entering the body in the first place. The coronavirus pandemic has turned the world's attention to the immune system, the body's defence force against disease-causing bacteria, viruses and other organisms that we touch, ingest and inhale every day.

The system has two types of response: innate and adaptive.The body's natural barriers against disease-causing intruders for example, our skin, the mucous and hairs in our nose, and the acid in our stomachs are part of our innate immune systems.

Adaptive immunity develops over a lifetime of contact with pathogens and vaccines, preparations which help our immune systems to distinguish friend from foe.

The World Health Organization's (WHO) recommended basic protective measures against COVID-19 are frequent handwashing with soap and water, or cleaning hands with an alcohol-based rub; maintaining social distancing; avoiding touching your eyes, nose and mouth; and covering your nose and mouth with a bent elbow or tissue when you cough or sneeze.

These simple actions are vital to slowing the spread of a new disease like the coronavirus – to which nearly everyone is susceptible, but particularly older people and those with underlying health conditions.

Subsartorial canal is an important area in the lower limb, discuss

The adductor canal (Hunter's canal, subsartorial canal) is a narrow conical tunnel located in the thigh. It is approximately 15cm long, extending from the apex of the femoral triangle to the adductor hiatus of the adductor magnus. The canal serves as a passageway from structures moving between the anterior thigh and posterior leg.

The adductor canal is bordered by muscular structures:

- Anteromedial: Sartorius.
- Lateral: Vastus medialis.
- Posterior: Adductor longus and adductor magnus.

The adductor canal runs from the apex of the femoral triangle to the adductor hiatus – a gap between the adductor and hamstring attachments of the adductor magnus muscle.

The adductor canal serves as a passageway for structures moving between the anterior thigh and posterior leg. It transmits the femoral artery, femoral vein (posterior to the artery), nerve to the vastus medialis and the saphenous nerve – the largest cutaneous branch of the femoral nerve. As the femoral artery and vein exit the canal, they are called the popliteal artery and vein respectively.

Describe the Extraocular and intraocular Muscles with their nerve supply.

The extraocular muscles are located within the orbit, but are extrinsic and separate from the eyeball itself. They act to control the movements of the eyeball and the superior eyelid.

There are seven extraocular muscles – the levator palpebrae superioris, superior rectus, inferior rectus, medial rectus, lateral rectus, inferior oblique and superior oblique.

Functionally, they can be divided into two groups:

- Responsible for eye movement – Recti and oblique muscles.
- Responsible for superior eyelid movement – Levator palpebrae superioris.

Recti Muscles

There are four recti muscles; superior rectus, inferior rectus, medial rectus and lateral rectus. These muscles characteristically originate from the common tendinous ring. This is a ring of fibrous tissue, which surrounds the optic canal at the back of the orbit. From their origin, the muscles pass anteriorly to attach to the sclera of the eyeball.

The name recti is derived from the latin for 'straight' – this represents the fact that the recti muscles have a direct path from origin to attachment. This is in contrast with the oblique eye muscles, which have an angular approach to the eyeball.

Superior Rectus

- **Attachments**: Originates from the superior part of the common tendinous ring, and attaches to the superior and anterior aspect of the sclera.
- **Actions**: Main movement is elevation. Also contributes to adduction and medial rotation of the eyeball.
- **Innervation**: Oculomotor nerve (CN III).

Inferior Rectus

- **Attachments**: Originates from the inferior part of the common tendinous ring, and attaches to the inferior and anterior aspect of the sclera.
- **Actions**: Main movement is depression. Also contributes to adduction and lateral rotation of the eyeball.
- **Innervation**: Oculomotor nerve (CN III).

Medial Rectus

- **Attachments**: Originates from the medial part of the common tendinous ring, and attaches to the anteromedial aspect of the sclera.
- **Actions**: Adducts the eyeball.
- **Innervation**: Oculomotor nerve (CN III).

Lateral Rectus

- **Attachments**: Originates from the lateral part of the common tendinous ring, and attaches to the anterolateral aspect of the sclera.
- **Actions**: Abducts the eyeball.

- **Innervation**: Abducens nerve (CN VI).

Oblique Muscles

There are two oblique muscles – the superior and inferior obliques. Unlike the recti group of muscles, they do not originate from the common tendinous ring.From their origin, the oblique muscles take an angular approach to the eyeball (in contrast to the straight approach of the recti muscles). They attach to the posterior surface of the sclera.

Superior Oblique

- **Attachments**: Originates from the body of the sphenoid bone. Its tendon passes through a trochlea and then attaches to the sclera of the eye, posterior to the superior rectus.
- **Actions**: Depresses, abducts and medially rotates the eyeball.
- **Innervation**: Trochlear nerve (CN IV).

Inferior Oblique

- **Attachments**: Originates from the anterior aspect of the orbital floor. Attaches to the sclera of the eye, posterior to the lateral rectus
- **Actions**: Elevates, abducts and laterally rotates the eyeball.
- **Innervation**: Oculomotor nerve (CN III).

Intraocular muscles

The intraocular muscles include the ciliary muscle, the sphincter pupillae, and the dilator pupillae. The ciliary muscle is a smooth muscle ring that controls accommodation by altering the shape of the lens, as well as controlling the flow of aqueous humor into Schlemm's canal. The ciliary muscle is attached to the zonular fibers which suspend the lens. Upon contraction of the ciliary muscle, the tension on the lens is lessened which causes it to adopt a more spherical shape to focus on near objects. Relaxation of the ciliary muscle has the opposite effect, optimising distant focus.

The sphincter pupillae and dilator pupillae are also composed of smooth muscle. The sphincter pupillae encircles the pupil and is responsible for the constriction of its diameter, while the dilator muscle is arranged radially and increases the pupillary diameter.

There are three primary axes of ocular movements: vertical, transverse, and anteroposterior. Rotation around the vertical axis results in either adduction (medial movement) or abduction (lateral movement) of the eye. Rotation around the transverse axis causes elevation (superior motion) or depression (inferior motion). The anteroposterior axis enables movement of the superior pole of the eye medially (intorsion) or laterally (extorsion). The rotations around the anteroposterior axis allow the eye to adjust to tilting of the head. The medial rectus muscle is responsible for medial rotation around the vertical axis, and the lateral rectus lateral rotation.

The superior rectus muscle primarily elevates the eye and contributes to adduction and intorsion. The inferior rectus depresses and laterally rotates the eye and contributes to adduction and extorsion. The superior oblique abducts, depresses, and medially rotates the eye, while the inferior oblique abducts, elevates, and laterally rotates the eye.

The primary retractor of the upper eyelid is the levator palpebrae superioris, which is a skeletal muscle. The superior tarsal muscle (Müller's muscle) is comprised of smooth muscle and also contributes to the elevation of the upper eyelid. In the lower eyelid, the retractors are the capsulopalpebral fascia and the inferior tarsal muscle. The orbicularis oculi is the main protractor (closure) of the eyelids. It is a flat, ringlike band of skeletal muscle surrounding the anterior orbit composed of three parts: the orbital portion, the palpebral portion, and the lacrimal portion.