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COURSE TITLE: **GROSS ANATOMY**

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1. **IMPORTANCE OF VASCULATURE IN RELATION TO IMMUNE SYSTEM AND OUTBREAK OF PANDEMIC COVID-19 ON THE HUMAN BODY:**

   A primary purpose and significant role of vasculature is its participation in oxygenating the body that is, it is the function of vessels to transport nutrients to organs/tissues and to transport wastes away from organs/tissues in the blood.

   The immune system is the body's multilevel defence network against potential harmful bacteria, viruses and other organisms. A healthy lifestyle helps one's immune systems 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 corona-virus 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 body system has two types of response; innate and adaptive. The body's natural barriers against disease-causing intruders for –for example, our skin, the mucous and hairs in our nose, and the acid in our stomachs are part of our conate-immune systems. Adaptive community develops over a lifetime of contact with pathogens and vaccines, preparations which help our immune systems to distinguish friends from foe.

   We are advised to wash our hands regularly with soap and water for 20-seconds so that it can kill the viruses that may be our hands, maintain social distancing from anyone coughing or sneezing because they spray small liquid droplets from their mouth or nose which may contain virus and

breathe in the droplets, including the COVID-19 virus of the person coughing has the disease.

A healthy lifestyle – not smoking, drinking little or no alcohol, sleeping well, eating a balanced diet, taking regular moderate exercise and reducing stress-helps our immune systems to be in the best shape possible to tackle pathogens.

Vaccination safety teaches our adaptive immune system to repel a wide range of diseases, and this protect ourselves and others.

2. **SUBSARTORIAL CANAL**

This is an aponeurotic tunnel in the middle third of the thigh, extending from the apex of the femoral triangle to the opening in the adductor magnus, the adductor hiatus.
It can also be known as the Adductor or Hunter's canal.

Boundaries

a) Roof (Anterior): Sartorius (medially) and
Vastus medialis (laterally)
b) Floor (posterior): Adductor longus (above) and
Adductor magnus (below)

NOTE: The roof is created by a powerful fibrous membrane stretching across the anterolateral and posterior borders. The roofing is overlapped by the Sartorius Muscle.

CONTENTS:

a) Femoral artery and its branch descending genicular artery.
It enters the canal at the apex of the femoral triangle, transverses the entire length of the adductor canal, and leaves it by going through the tendinous opening in the adductor magnus.

b) Femoral Vein.

This is located posterior to the femoral artery in the upper part and lateral to the artery of the lower part.

c) **Saphenous Nerve:**
This is the longest cutaneous nerve of the body. It crosses the femoral artery anteriorly from lateral to medial side. It leaves the canal by piercing the fibrous roof.

d) **Nerve to Vastus Media:**
This is the thickest muscular branch of the femoral nerve. It is located lateral to the femoral artery and enters the vastus medialis in the upper part of the canal.

CLINICAL SIGNIFICANCE:

The femoral artery is exposed and ligated in the adductor canal during surgery for aneurysm of the popliteal artery.

After ligation of the femoral artery in the adductor canal, the collateral c circulation is created through arterial anastomosis around the knee joint

3. **EXTRAOCULAR AND INTRAOCULAR MUSCLE WITH THEIR INNERVATIONS**
EXTRAOCULAR MUSCLE
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. They are innervated by lower motor neurons that form three canial nerves; the abducens, the trochlear and the oculomotor.
There are seven extraocular muscles which include the following:

a) **Levator Palpebrace superiors** – attaches the superior tarsal plate of the upper eyelid.
Action: It elevates the eyelid.
Innervation: Oculomotor Nerve (CN III)

b) **Superios Rectus:** Superior part of the superior part of the common tendinious ring and attaches to the inferior and anterior aspect of the sclera.
Action: Elevation
Innervation: Oculomotor Nerve (CN III)

c) Inferior Rectus: Superior part of the inferior part of the common tendinious ring and attaches to the inferior and anterior aspect of the sclera.

Action: Depression

Innervation: Oculomotor Nerve (CN III)

d) Medial Rectus – Medial part of the common tendinious ring and attaches to the anteromedial aspect of the sclera.

Action: Adducts the eyeball

Innervation: Oculomotor Nerve (CN III)

e) Lateral Rectus – Lateral part of the common tendinious ring and attaches to the anterolateral aspect of the sclera

Action: Adducts the eyeball

Innervation: Abducens Nerve (CN VI)

f) Superior oblique – body of the sphenoid bone. Attaches to the sclera of the eye, posterior to the superior rectus.

Action: Depresses, adducts and medially rotates the eyeballs

Innervation: Trochlear Nerve (CN IV)

g) Inferior Oblique – anterior aspect of the orbital floor. Attaches to the sclera of the eye, posterior to the lateral rectus.

Action: Elevates, adducts and laterally rotates the eyeballs

Innervation: Oculomotor Nerve (CN III)

INTROCULAR MUSCLES

These are muscles which are responsible for pupil accommodation and reaction to light. They include; ciliary muscle, the sphincter pupillae and the dilator pupillae.

The ciliary muscles 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. It helps in accommodation. The ciliary ganglion is made up of postsynaptic parasympathetic nerve cell bodies associated with the ophthalmic nerve. The short ciliary nerve originates from the ciliary ganglion and carry parasympathetic and sympathetic fibres to the iris and ciliray body. The long ciliary nerves branch off the nasociliary nerve and carry postsynaptic sympathetic fibres to the dilator pupillae and different fibers from the cornea and iris.

The sphincter pupillae encircles the pupil and is responsible for the constriction of its diameter. The sphincter pupillae is parasympathetically the dilator pupillae is arranged radially and increases the pupillary diameter. The dilator pupillae is sympathetic – stimulated.

NOTE:

Ciliary Muscles – Helps in accommodation

Sphincter Pupillae – constricts pupil

Dilator Pupillae – Dilates pupil