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1. Describe the importance of the vasculature in relations to immune system and outbreak of pandemic covid19 on the human body

## (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

## Other names Coronavirus, COVID, 2019-nCoV, acute respiratory disease, Novel coronavirus pneumonia.

## Common symptoms include fever, cough, and shortness of breath.

##  Other symptoms may include fatigue, muscle pain, diarrhoea, sore throat, loss of smell, and abdominal pain.

## How Does Coronavirus Attack The Body?

## A virus infects your body by entering healthy cells. There, the invader makes copies of itself and multiplies throughout your body.The new coronavirus latches its spiky surface proteins to receptors on healthy cells, especially those in your lungs.Specifically, the viral proteins bust into cells through ACE2 receptors. Once inside, the coronavirus hijacks healthy cells and takes command. Eventually, it kills some of the healthy cells.

## Incubation period

This is when the virus is establishing itself.

Viruses work by getting inside the cells your body is made of and then hijacking them.

The coronavirus, officially called Sars-CoV-2, can invade your body when you breathe it in (after someone coughs nearby) or you touch a contaminated surface and then your face.

It first infects the cells lining your throat, airways and lungs and turns them into "coronavirus factories" that spew out huge numbers of new viruses that go on to infect yet more cells.

At this early stage, you will not be sick and some people may never develop symptoms.

The incubation period, the time between infection and first symptoms appearing, varies widely, but is five days on average.

## After the incubation period

## The virus moves down your respiratory tract. That’s the airway that includes your mouth, nose, throat, and lungs. Your lower airways have more ACE2 receptors than the rest of your respiratory tract. So COVID-19 is more likely to go deeper than viruses like the [common cold](https://www.webmd.com/cold-and-flu/default.htm).

## Your lungs might become inflamed, making it tough for you to [breathe](https://www.webmd.com/lung/how-we-breathe). This can lead to [pneumonia](https://www.webmd.com/lung/understanding-pneumonia-basics), an infection of the tiny air sacs (called alveoli) inside your lungs where your blood exchanges oxygen and carbon dioxide.

## If your doctor does a [CT scan](https://www.webmd.boots.com/a-to-z-guides/what-is-a-ct-scan) of your chest, they’ll probably see shadows or patchy areas called “ground-glass opacity.”

## For most people, the symptoms end with a cough and a fever. More than 8 in 10 cases are mild. But for some, the infection gets more severe. About 5 to 8 days after symptoms begin, they have shortness of breath (known as dyspnea).[Acute respiratory distress syndrome](https://www.webmd.com/lung/ards-acute-respiratory-distress-syndrome) (ARDS) begins a few days later.

## ARDS can cause rapid breathing, a fast [heart rate](https://www.webmd.com/heart-disease/heart-failure/watching-rate-monitor), dizziness, and [sweating](https://www.webmd.com/skin-problems-and-treatments/hyperhidrosis2). It damages the tissues and blood vessels in your alveoli, causing debris to collect inside them. This makes it harder or even impossible for you to breathe.



1. Subsartorial canal is an important area in the lower limb?

Subsartorial canal can also be called the adductor canal or Hunter’s canal.

Subsartorial canal (adductor or Hunter’s canal) serves as a passageway from structures moving between the anterior thigh and posterior leg. It is approximately 15cm long, extending from the apex of the femoral triangle to the adductor hiatus of the adductor magnus.

Importance to the lower limb

The Subsartorial canal (adductor or Hunter’s canal) serves as a passageway for structures moving between the anterior thigh and posterior leg.

It consists of three foramina: superior, anterior and inferior.

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.



Adductor Canal represented in green region.

1. Describe the extraocular and intraocular muscles with their nerves supply

**Extraocular muscles**

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.

The extraocular muscles are the six muscles that control movement of the eye and one muscle that controls eyelid elevation (levator palpebrae). Theses 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.

Nerve supply

The nuclei or bodies of these nerves are found in the brain stem. The nuclei of the abducens and oculomotor nerves are connected. This is important in coordinating the motion of the lateral rectus in one eye and the medial action on the other. In one eye, in two antagonistic muscles, like the lateral and medial recti, contraction of one leads to inhibition of the other. Muscles show small degrees of activity even when resting, keeping the muscles taut. This "[tonic](https://en.wikipedia.org/wiki/Muscle_tone)" activity is brought on by discharges of the motor nerve to the muscle. The extraocular muscles include: the medial, inferior, and superior recti, the inferior oblique, and levator palpebrae muscles, all innervated by the oculomotor nerve (III); the superior oblique muscle, innervated by the trochlear nerve (IV); and the lateral rectus muscle, innervated by the abducens nerve (VI).

**Intraocular muscles (controlling the lens and pupil)**

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.

Nerve supply

The intraocular muscles are innervated by the autonomic systems and include the iris sphincter and the ciliary muscle (innervated by the parasympathetic component of cranial nerve III), and the radial pupillodilator muscles (innervated by the ascending cervical sympathetic system with its long course from spinal segments T1 through T3).