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NUMBR 1 ;

THE HISTOLOGICAL IMPORTANCE OF THE EYE IN RELATION TO THE CELLULAR FUNCTIONS

- Fibroustunica (Or external layer)

a) Sclera: it is a dense irregular connective tissue that supports eye shape, protects the delicate internal structures and extrinsic eye muscles attachment site.

b) Cornea: it has two layers of epithelium with organized connective tissue in between which protects the anterior surface of the eye and refracts (bends) incoming light.

2) Vascular Tunica (Or middle Layer):

a) Choroid:it is made up of Areolar connective tissues which are highly vascularized which supplies nourishment to the retina and aids in pigment absorption of extraneous light.

b) Ciliary Body: it is mad e up of ciliary smooth muscles and processes covered with secretory epithelium which supports this structure by holding suspensory ligament that attach to the lens and change lens shape for far and near vision (i.e. rod and cones function), it also secrets aqueous humor in the epithelium.

c) Iris: it has two layers of smooth muscles (Sphincter and dilator papillae) and connective tissues with a central pupil which aids in controlling the pupil diameter and thus controls the amount of light entering the eye.

3) Retina (Or internal layer):

a)Pigmented layer: It is made up of pigmented epithelium cells which aids in absorbs extraneous light and provides vitamin A for photoreceptor cells.

b) Neural layer: It consists of Photoreceptors, bipolar neurons, ganglion cells and supporting Muller cells which aids this structures by detecting incoming light rays (light rays are converted to nerve signal and transmitted to the brain)

NUMBER 2

THE LAYERS OF THE RETINA THAT IS PENETRATED BY THE CORON AVIRUS

 The retina is a thin layer of tissue that lines the back of the eye on the inside .

It is located near the optic nerve .Its purpose is to revive light into the neural signals, and send these neural signals to the brain for them to be visually recognized.

The retina is divided into ten layers (which are all penetrated by the coronavirus)and they are ;

-THE INTERNAL LIMITING MEMBRANE ;

This membrane forms the innermost boundry of the retina .The outer retinal surface of this membrane is uneven and made of muller cells covered by basement membrane . It serves as the inter face between the vitreous body and the renal nerve fiber layer.

-THE NERVE FIBER LAYER ;

This membrane consist of ganglion cell axons .Its course runs parallel to the retinal surface . The fibers proceed to the optic disc ,then turn at a right angle and exit the eye through the lamina cribrosa as the optic nerve.The fibers are generally unmyelinated within the retina.

-THE GANGLION CELL LAYER;

This layer contains retinal gablion cells ,which is a type of neuron that recives that recives visual information from photoreceptors via two inter mediate neuron types bipolar cells and retina amacine cells.

-THE INNER PLEXIFORM LAYER;

This layer is made up of dence reticulum of fibrils formed by interlaced dendrites of retinal ganglion cell cells and also cells of the inner nuclear layer .

-THE NUCLEAR LAYER ;

This layer houses the perikary and nuclei of bipolar cells ,horizontal cells, amacrine cells and muller cells .The bipolar cells located here function vertically to modulate brightness and colour in formation.

-THE OUTER PLEXFORM LAYER ;

This consist of dense network of synspses in between dendrites of the horizontal cells from the inner nuclear layer ,and photoreceptorcell inner segments from the outer nuclear layer .

-THE OUTER NUCLEAR LAYER ;

This is one of the layers of the vertibrate retina (which is the most accessible part of the central nervous system ) and it is known as the light detecting portion of the eye .

-THE EXTERNAL LIMITING MEMBRANE;

This is one of the most distinct of the ten layer of the retina ,due to the fact that it posseces a network like structure and is situated at the bases of the rods and cones(which are photoreceptors that are found on the outermost layer of the retina ).

-THE PHOTORECEPTOR LAYER ;

This is the layer with the highest level of photo receptors.

-THE RETINA PIGMENTED EPITHELIUM(RPE);

This is a single layer of epithelial cells lining the posterior segment of the eye .it is located between the light-sensing photoreceptir cells and the choriocapillaris (this is an extensive anastomosing capillary system derived from the chorodial vessels and lies completely within Bruch’s) in cunjunction with the endothelium of the retinal vessels the RPE layer also forms the blood-retinal barrier membrane