

THE EYE

1. Which of these words do you know? Check new words in a dictionary. Write the translation of the words in the table.

aqueous humor	['eɪkwɪəs 'hju:mə]	
canal of Schlemm	[kə'næl əv ʃlem]	
choroid layer	['kɔ:rɔɪd]	
ciliary body	['sɪlɪ(ə)rɪ 'bɒdɪ]	
ciliary muscle	['sɪlɪ(ə)rɪ 'mʌsl]	
circular muscle	['sɜ:kjələ]	
cone	[kəʊn]	
cornea	['kɔ:niə]	
eyeball	['aɪbɔ:l]	
eyelash	['aɪlæʃ]	
eyelid	['aɪlɪd]	
fovea	['fəʊviə]	
iris	['aɪərɪs]	
lacrimal gland	['lækrɪm(ə)l]	
lens	[lenz]	
lysozyme	['lɪsɒzɪm]	
macula lutea	['mækjʊlə'lu:ti,]	
nourishment	['nʌrɪʃmənt]	
oculomotor nerve	['ɒkjʊlə ,məʊtə]	
orbit	['ɔ:bit]	
precise	[prɪ'saɪs]	
pupil	['pjʊ:p(ə)l]	
refracting system	[rɪ'frækt]	
retina	['retɪnə]	
rod	[rɒd]	

sclera	['sklɪrə]	
semisolid	[,sɛmɪ'sɒlɪd]	
socket	['sɒkɪt]	
suspensory ligament	[sə'spen(t)s(ə)rɪ]	
to blink	[blɪŋk]	
to constrict	[kən'strɪkt]	
to contract	[kən'trækt]	
to detach	[dɪ'tæʃ]	
to dilate	[dɪ'lɪt]	
transparent	[træn(t)'spær(ə)nt]	
vitreous humor	['vɪtriəs 'hju:mə]	

2. Read the text.

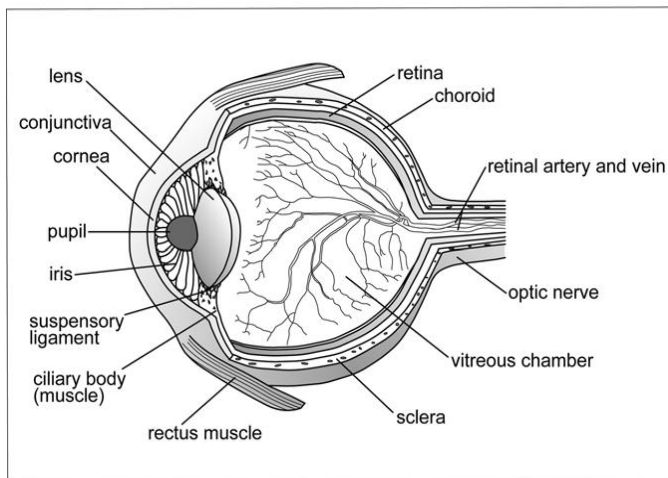
Vision receptors are located in the eye, along with a refracting system that directs light rays to the vision receptors located in the retina. The eyeball is protected by eyelids and lashes. Eyelids are able to open and close over the eye because they are made of skeletal muscle. Eyelashes border the eyelids and keep dust from the eyelids. In addition, there is a thin membrane called the conjunctiva that lines the interior of each eyelid.

Located on the upper outer corner of the eyeball are the lacrimal glands, which produce tears that cleanse the eyes and keep them moist. Tears are taken to the eye's anterior region through small ducts. Blinking spreads the tears and allows them to wash the eye. Composed mostly of water, tears also contain an enzyme called lysozyme, which prevents bacteria from producing on the eye's surface. The orbit is a cavity in the skull that protects and surrounds the eyeball. There are six muscles that extend from the socket to the surface of the eyeball. These six muscles move the eye.

There are three layers in the eyeball. They are the outer sclera, the middle choroid layer, and the inner retina. Composed of fibrous tissue the sclera is the thickest layer. The cornea is located on the anterior of the sclera, and is unique from

the rest of this layer because it is transparent and has no capillaries. This allows it to be the first part of the eye to bend light rays.

The second layer of the eyeball, the choroid layer, is made up of blood vessels. In addition, this layer prevents glare by absorbing a certain amount of light within the eyeball. The outer portion of this layer contains the iris and the ciliary body, a circular muscle that is connected to the lens's edge by suspensory ligaments. Similar to the cornea, the lens is transparent and has no capillaries. The ciliary muscle allows the eye to focus light from objects near and far by changing the shape of the lens.



At the front of the lens there is the circular iris, which is known as the colored portion of the eye. The iris's opening is called the pupil. The pupil's diameter is controlled by two sets of muscle fibers. When the radial fibers contract, the pupil dilates, which is a sympathetic response. The pupil

constricts when the circular fibers contract, which is a parasympathetic response of the oculomotor nerves. This reflexive response is a protective mechanism because it prevents too much intense light from entering the retina. It also allows more precise near vision.

Another important part of the eye's anatomy is the retina, which is located on the interior of the choroid level. The retina houses the visual receptors, called the rods and cones. Whereas rods only detect light, cones detect colors. The macula lutea is abundant with cones and is located in the center of the retina behind the lens. The area known for the best color vision is the fovea, a small depression located in the macula lutea that contains only cones.

Inside the eyeball there are two cavities. Located between the lens and the retina, the larger posterior cavity contains a semisolid substance called vitreous humor. The retina is kept in place by the vitreous humor. However, if the eyeball is injured and the vitreous humor is lost, the retina can become detached. The second cavity, the

anterior cavity, is between the front of the lens and the cornea. This cavity contains the aqueous humor, the eyeball's tissue fluid formed by capillaries in the ciliary body. Aqueous humor flows through the eye's pupil and is absorbed by small veins called the canal of Schlemm, located where the iris and cornea join together. Because the lens and cornea have no capillaries, they need the nourishment from the aqueous humor.

3. Answer the questions.

1. What is the eyeball protected by?
2. What are the functions of tears?
3. How are three layers of the eyeball called?
4. How does the cornea differ from the sclera?
5. What is the choroid layer made up?
6. What does the ciliary muscle allow the eye to do?
7. What cavities are there in the eyeball?
8. Why does the pupil dilate and constrict?
9. What does the retina house?
10. What is vitreous humor and aqueous humor?

4. Say if the statements are true or false. Correct them if it is necessary.

1. The retina is the colored portion of the eye.
2. There are ten muscles which move the eyeball.
3. Lysozyme prevents bacteria from producing.
4. There are many capillaries in the lens and cornea.
5. Eyelids are made of smooth muscles.
6. The retina contains visual receptors called rods and cones.
7. Cones only detect light.
8. The sclera is composed of connective tissue.
9. Inside the eyeball there are two cavities: posterior and anterior ones.
10. Fovea is a small depression in the macula lutea containing only rods.

5. Make up word combinations.

1. vision	a. cavity
2. refracting	b. body
3. lacrimal	c. lutea
4. ciliary	d. system
5. protective	e. nerve
6. posterior	f. gland
7. macula	g. receptor
8. choroid	h. mechanism
9. oculomotor	i. humor
10. aqueous	j. layer

6. Match the following terms with their definitions:

choroid, retina, eyelash, lacrimal gland, oculomotor nerve, macula lutea, pupil, iris, eyelid, lens.

1. The upper and lower folds of skin which cover the eye when closed.
2. Short curved hairs growing on the edges of the eyelids, serving to protect the eyes from dust.
3. The area at the back of your eye containing cells that are sensitive to light. It receives the image that you see and then sends the image to your brain.
4. The compound gland that secretes tears and lubricates the surface of the eye and the conjunctiva of the eyelid.
5. The pigmented vascular layer of the eyeball between the retina and the sclera.
6. A flat, coloured, ring-shaped membrane behind the cornea of the eye, with an adjustable circular opening in the centre.
7. The transparent elastic structure behind the iris by which light is focused onto the retina of the eye.
8. The dark circular opening in the center of the iris of the eye, varying in size to regulate the amount of light reaching the retina.

9. The third cranial nerve, which supplies most of the eye muscles.
10. A small yellowish oval-shaped spot, rich in cones, near the centre of the retina of the eye, where vision is especially sharp.

7. Fill in the gaps.

1. The retina is kept in place by the _____ humor.
2. A _____ system directs light rays to the vision receptors.
3. The retina is located on the interior of the _____ layer.
4. A thin membrane called _____ lines the interior of each eyelid.
5. The orbit is a _____ in the skull.
6. _____ glands produce tears.
7. _____ is located in the centre of the retina and contains cones.
8. The lens is _____ and has no capillaries.
9. The vitreous humor is _____ substance.
10. The retina becomes _____ when vitreous humor is lost.

8. Match the diseases and their definitions.

1. blepharitis	a. the lens becomes opaque
2. conjunctivitis	b. inflammation of the iris
3. hypertensive retinopathy	c. poor vision due to either no transmission or poor transmission of the visual image to the brain
4. cataract	d. the eyes do not point in the same direction
5. iritis	e. distant objects appear blurred
6. retinal detachment	f. inflammation of the conjunctiva
7. strabismus	g. inflammation of eyelids and eyelashes
8. scleritis	h. burst blood vessels, due to long-term high blood pressure
9. myopia	i. the retina separates from the choroid, leading to blurred and distorted vision
10. amblyopia	j. a painful inflammation of the sclera

9. Underline the symptoms of eye diseases.

Breathlessness, dryness, diarrhea, fracture, burning, palpitations, redness, pressure behind the eye, tremor, itching, peripheral oedema, discharge, tinnitus, numbness, blurred vision, paralysis, dizziness, tunnel vision, cough, weight loss, peripheral vision, sore throat, heart murmur, lacrimation, rash, jaundice.