Human Eye

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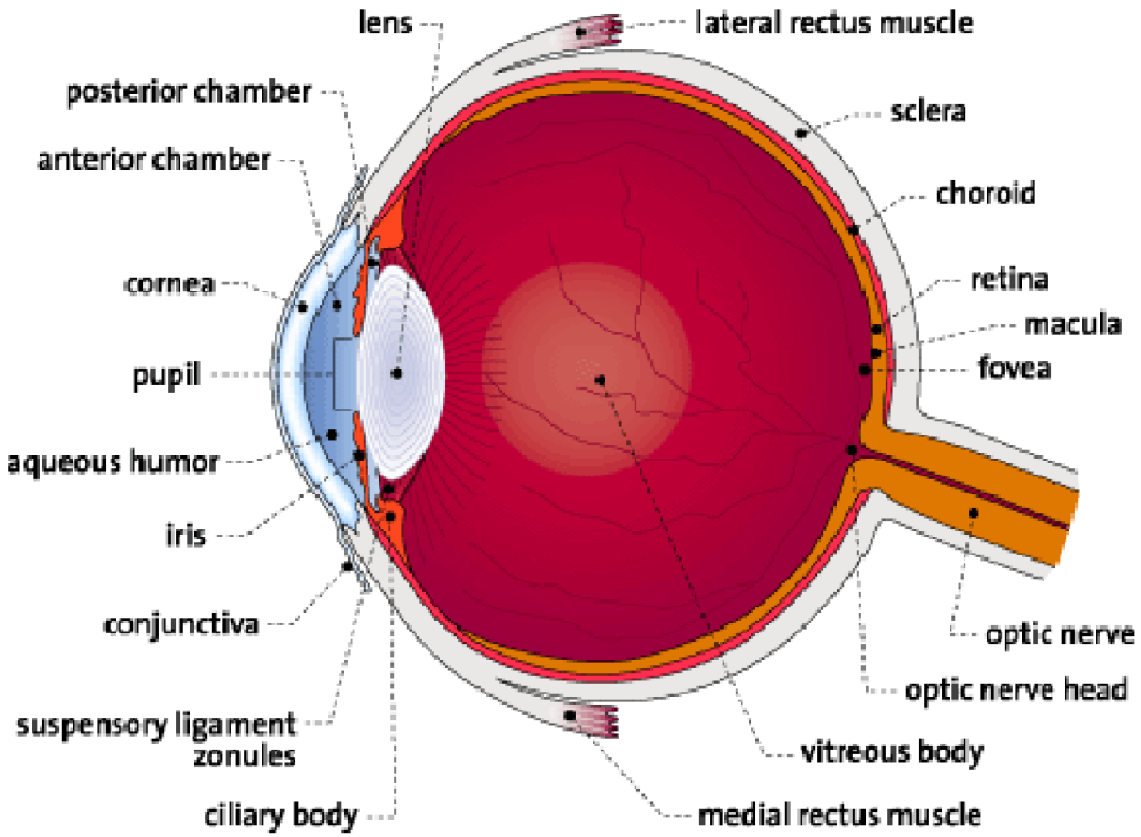
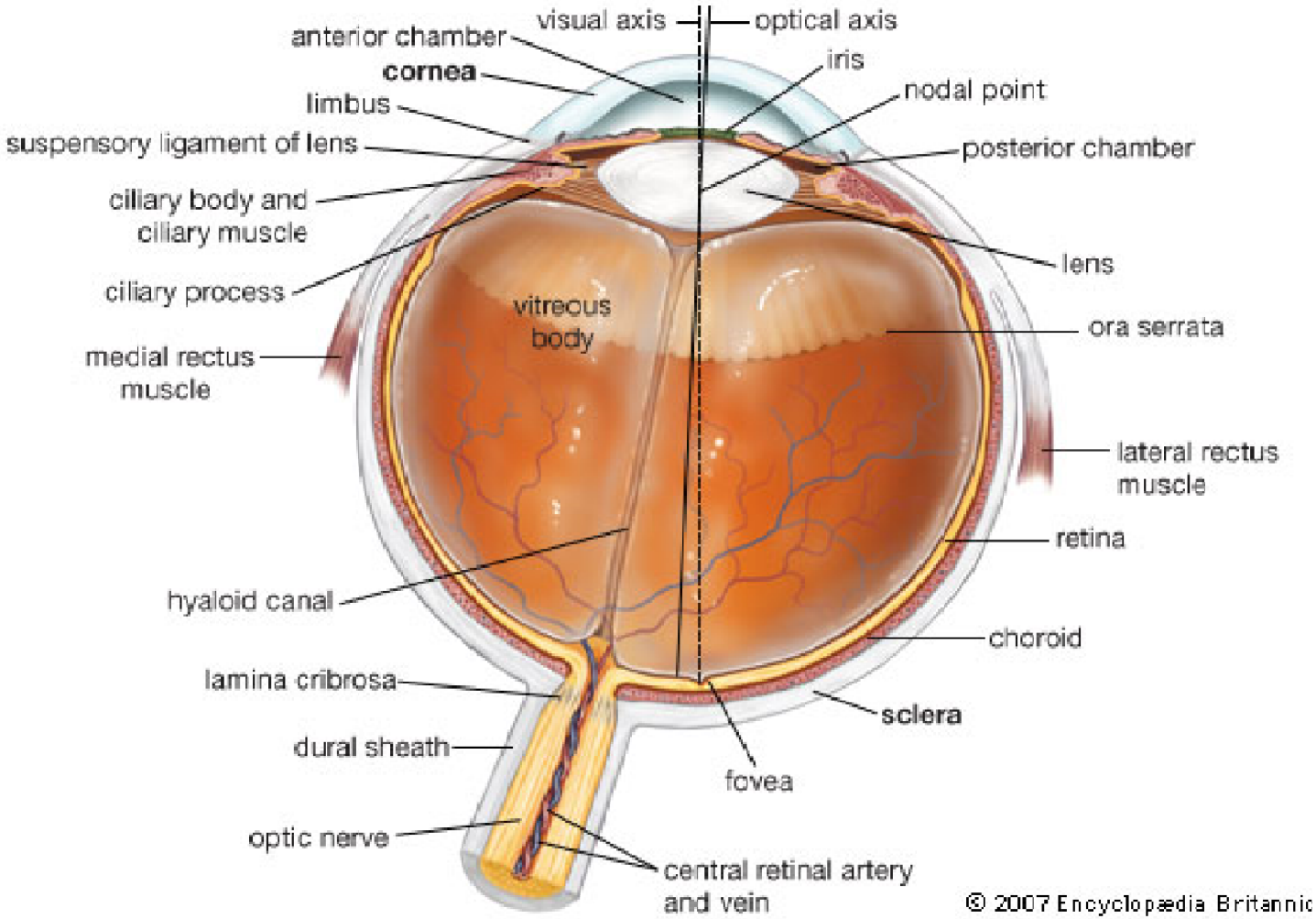
The Human Eye

How the Human Eye works?

The Eye

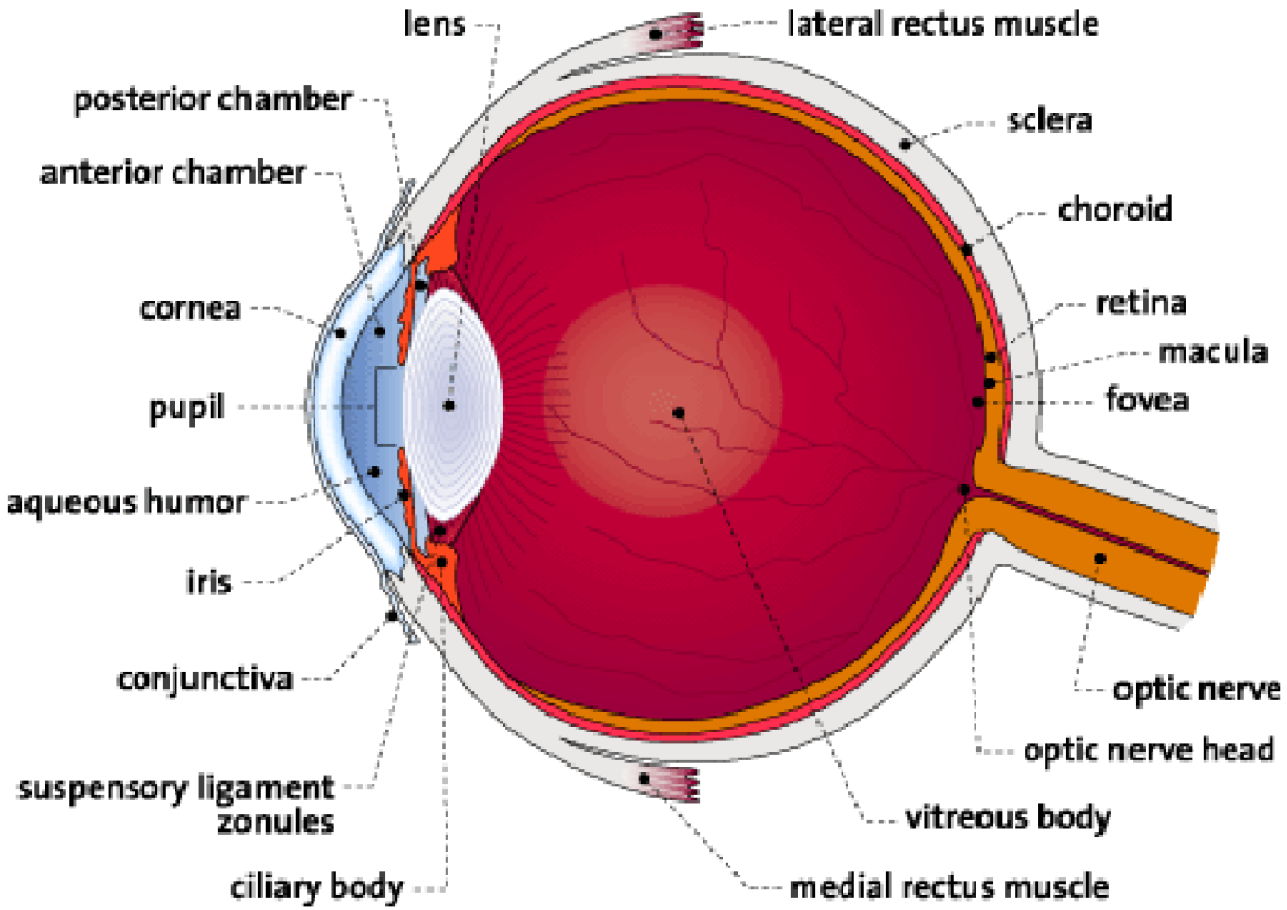

lens
lateral rectus muscle
posterior chamber
sclera
anterior chamber
choroid
cornea
retina
macula
pupil
fovea
aqueous humor
iris
conjunctiva
optic nerve
optic nerve head
suspensory ligament
zonules
vitreous body
ciliary body
medial rectus muscle

The Eye - another view



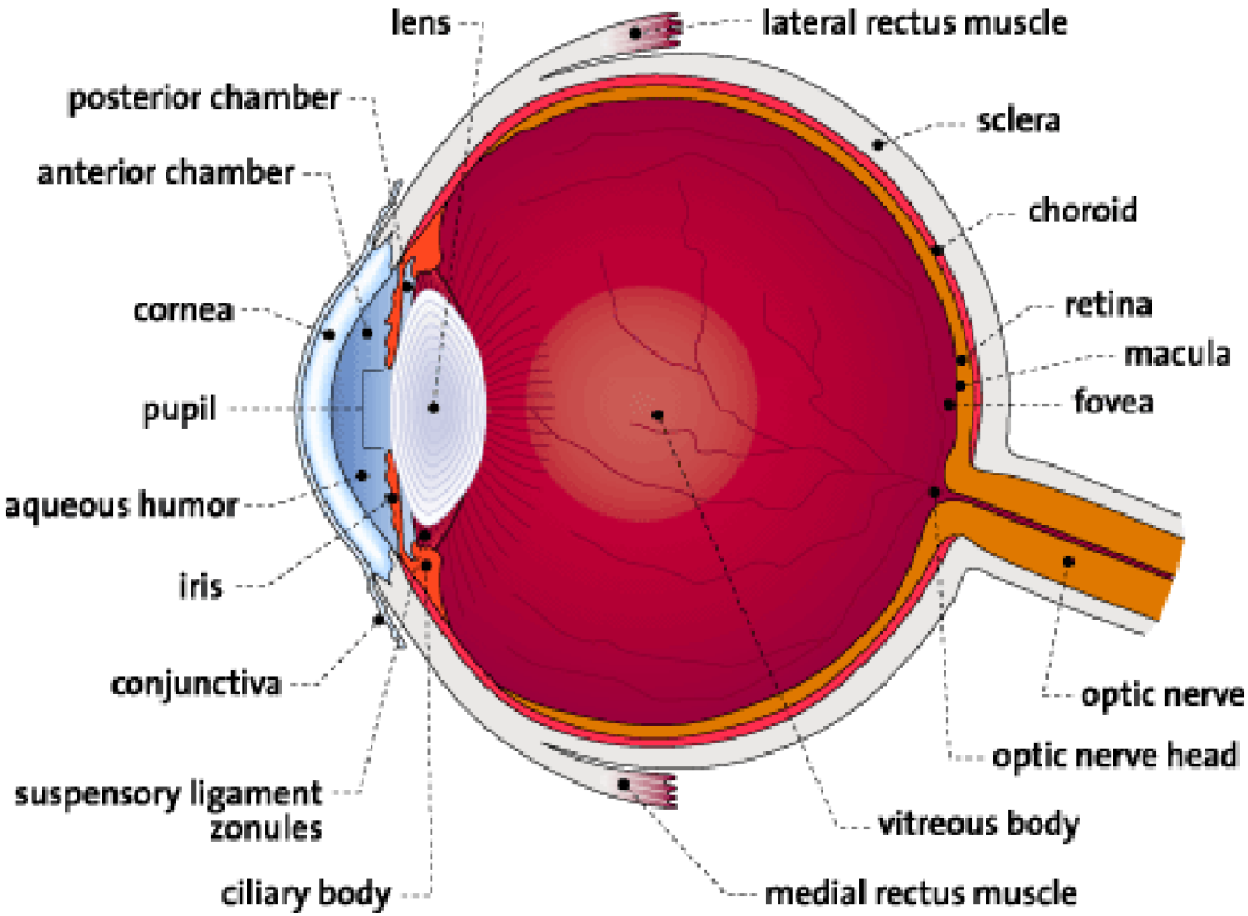
Posterior Chamber

posterior chamber
Part of the eye behind the iris and in front of the lens.



Anterior Chamber

anterior chamber
Part of the eye behind the cornea and in front of the iris and lens.



The Iris

- - the iris of the eye functions like the diaphragm of a camera,
- - controlling the amount of light reaching the back of the eye
- - by automatically adjusting the size of the pupil -aperture;

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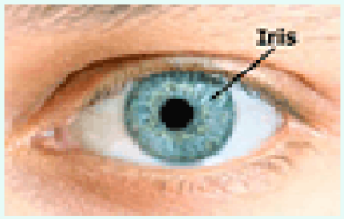
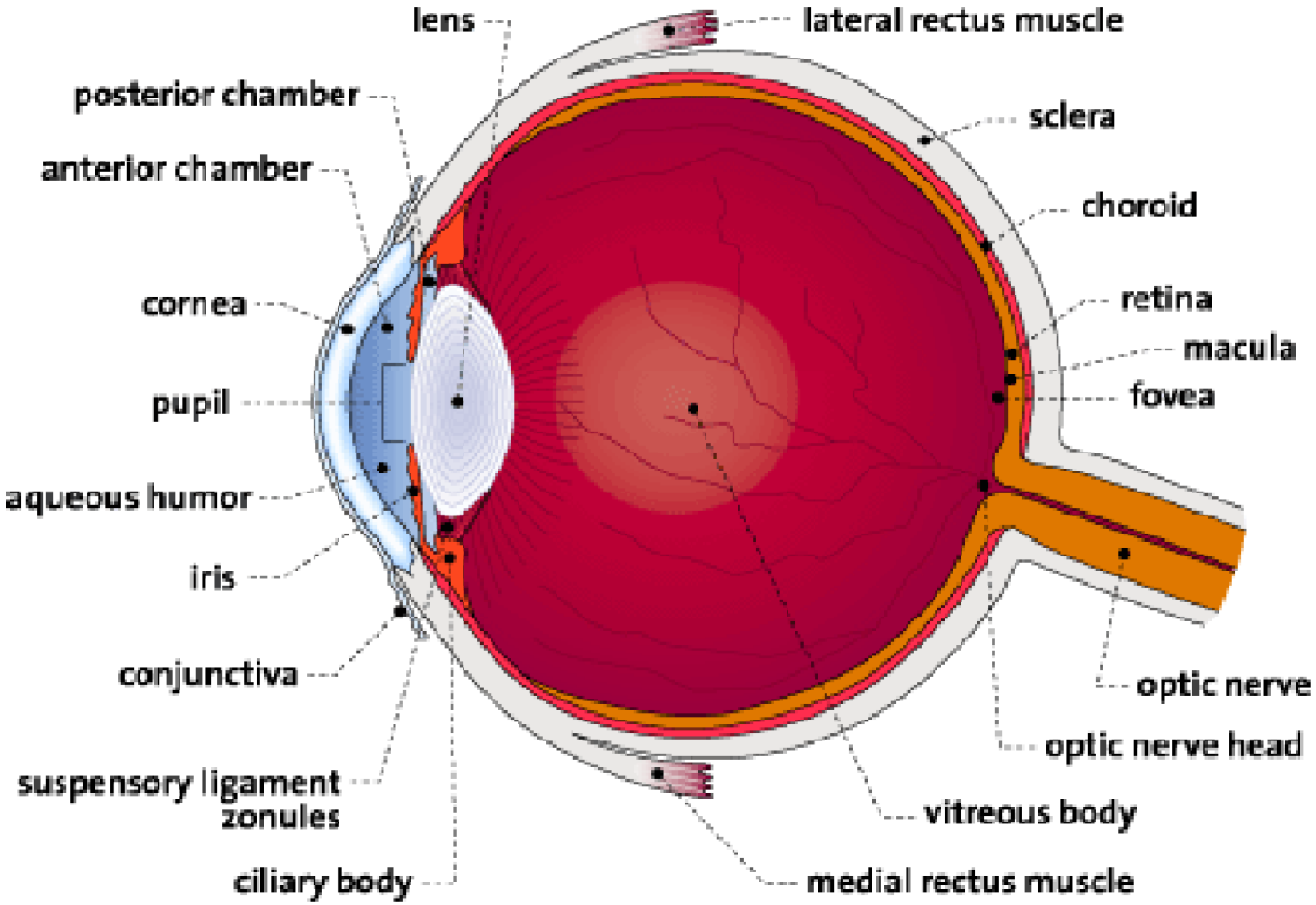
Iris

iris
Colored part of your eye surrounding the pupil. This pigmented membrane lies between the cornea and the lens; it acts as a diaphragm to widen or narrow the opening called the pupil, thereby controlling the amount of light that enters the eye.





The Cornea

- - the human eye works much like a digital camera;
- - the light is focused primarily by the cornea;
- - it is the clear front surface of the eye, which acts like a camera lens;

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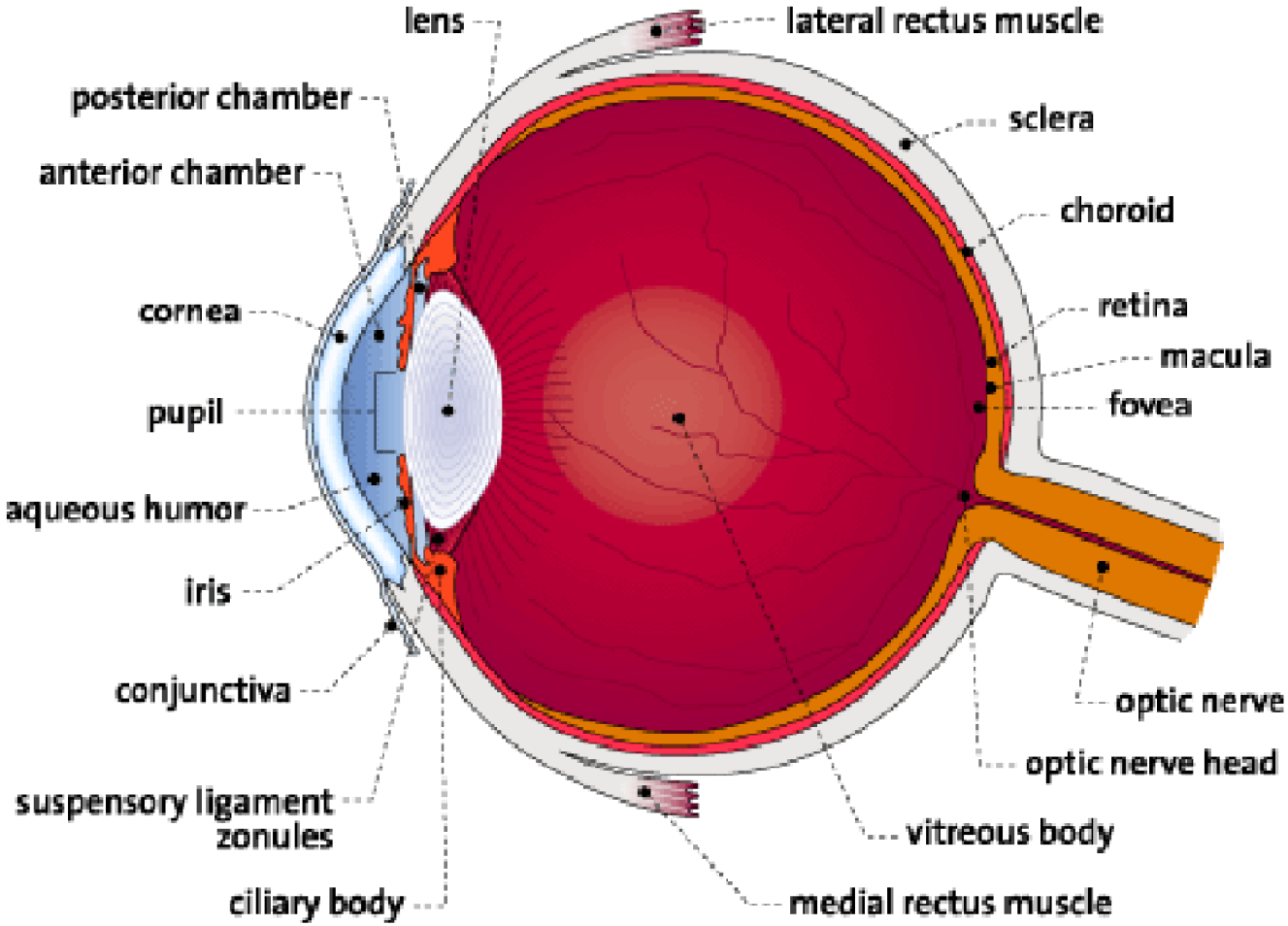
Cornea

cornea
The clear part of the eye covering the iris and pupil; it lets light into the eye, permitting sight.



The Lens

- - the eye's crystalline lens is located directly behind the pupil and focuses light;
- - through a process called accommodation, this lens helps the eye focus on near and approaching objects, like an autofocus camera lens;
- - light focused by the cornea and crystalline lens - and limited by the iris and pupil reaches the retina;

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Pupil

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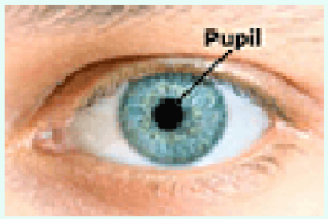
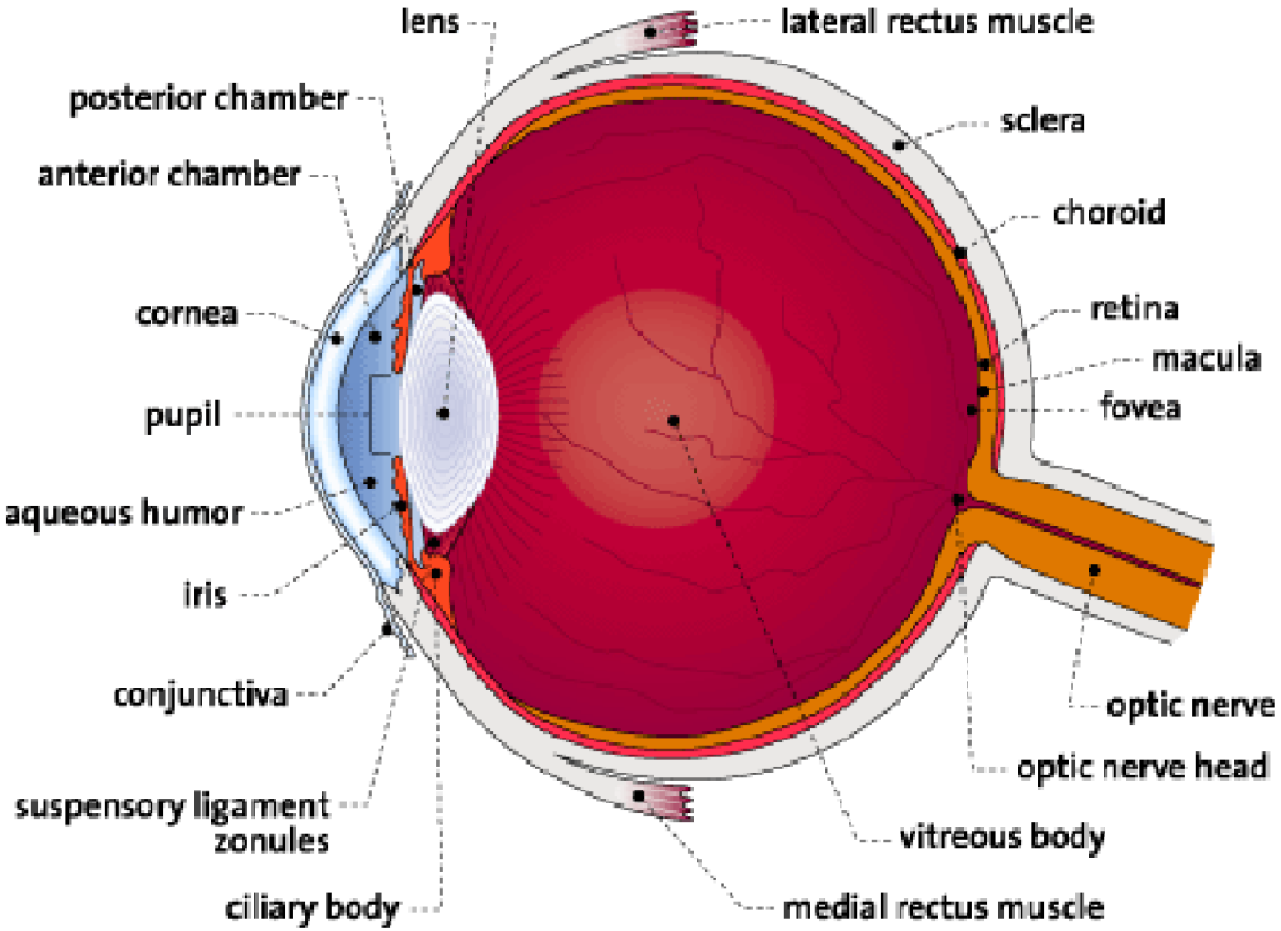
The round, dark center of the eye, which opens and closes to regulate the amount of light the retina receives.





The Retina

- - the retina acts like an electronic image sensor of a digital camera,
- - converts optical images into electronic signals;
- - the optic nerve then transmits these signals to the visual cortex
- - that part of the brain that controls our sense of sight;

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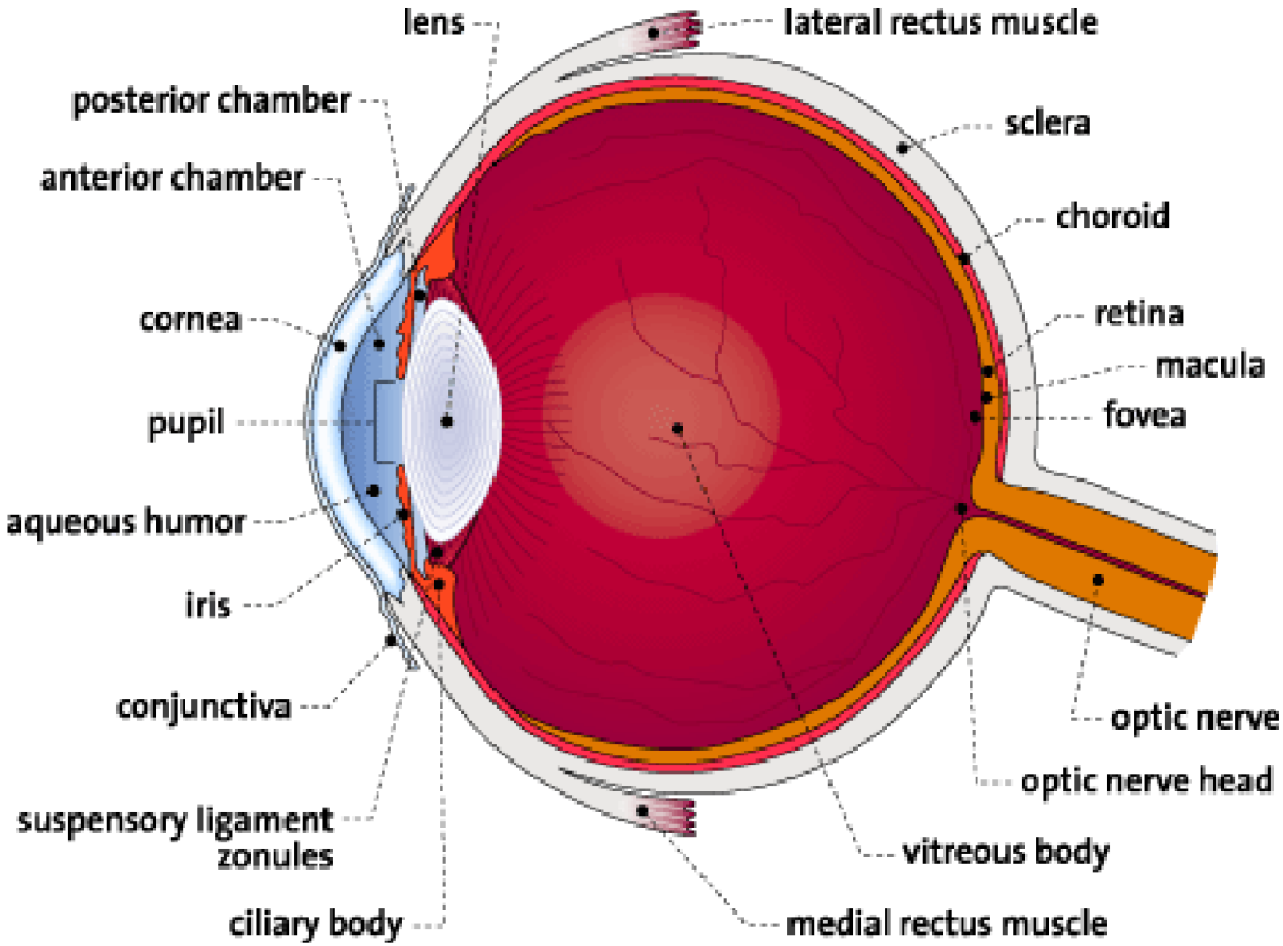
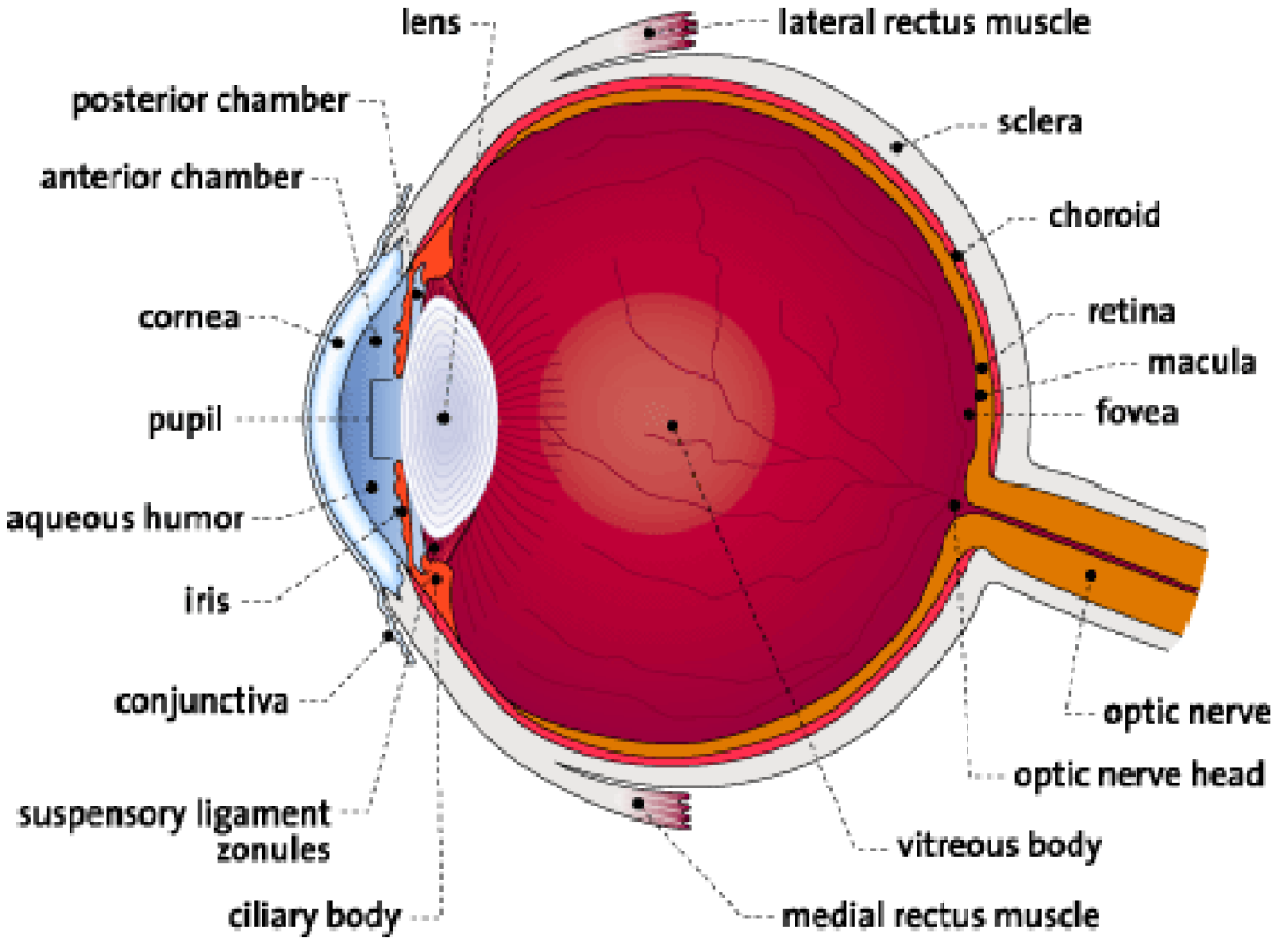
Retina

retina
The sensory membrane that lines the eye; it receives images formed by the lens and converts them into signals that reach the brain by way of the optic nerve.



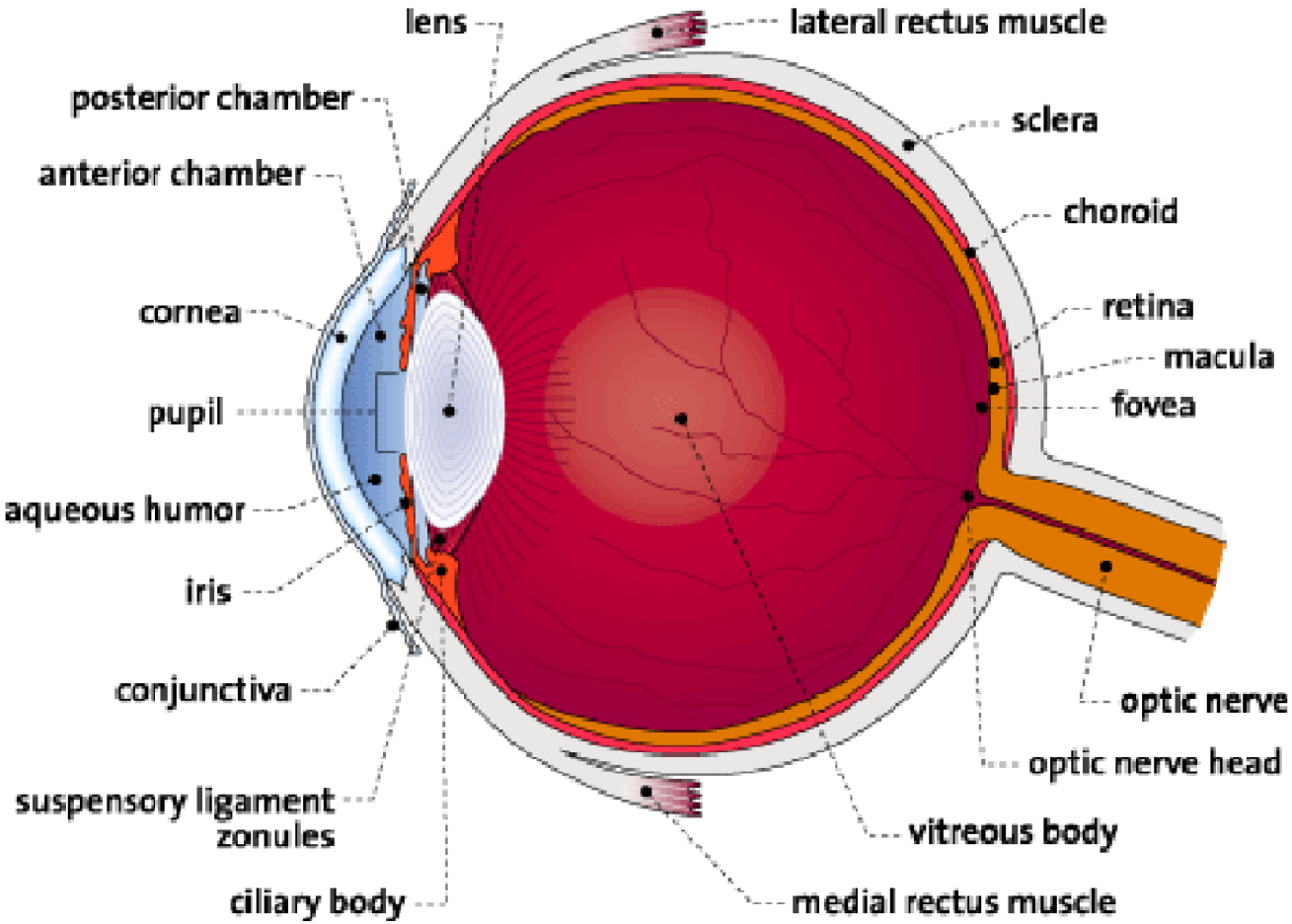
Aqueous Humor

aqueous humor
Clear fluid in the front of the eye, between the cornea and the iris, that provides nutrients to the cornea and the lens. The fluid is produced by the ciliary body. Glaucoma causes a difficulty in draining this fluid, and intraocular pressure builds up. The result is damage to the optic nerve and loss of vision.



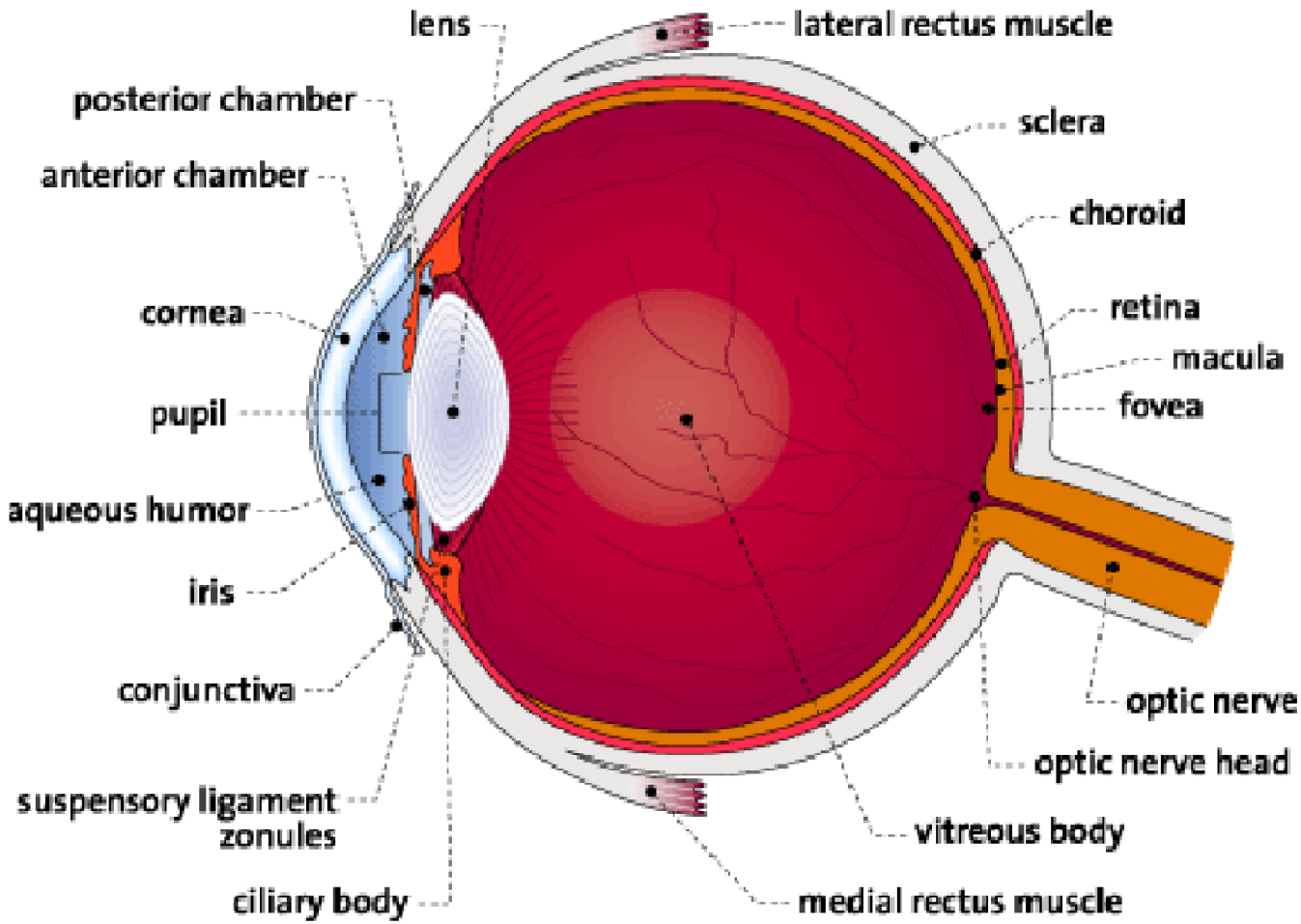
Conjunctiva

conjunctiva
Mucous membrane that lines the visible part of the eye and the inner surface of the eyelids.



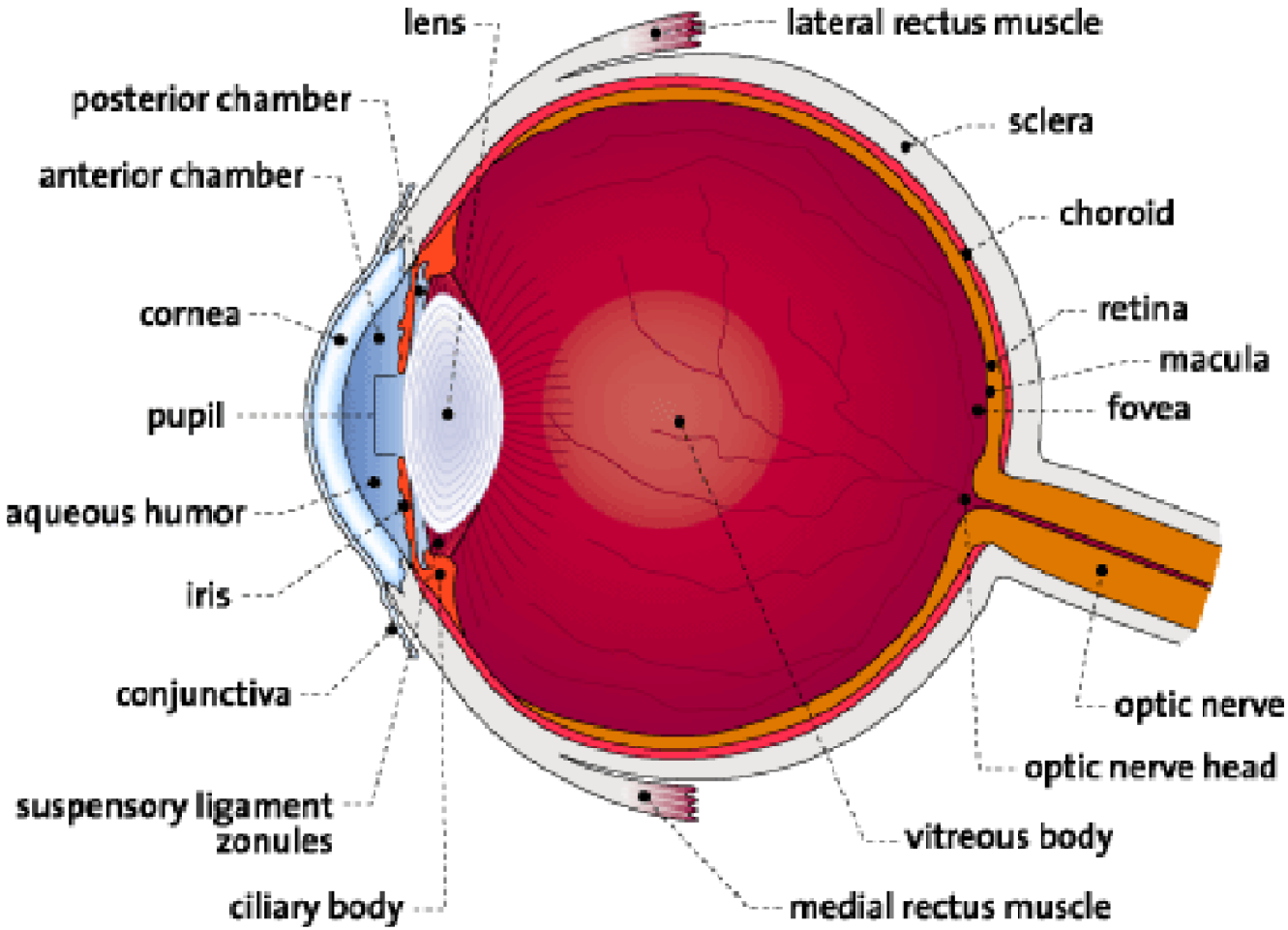
Suspensory Ligament

suspensory ligament
Also called zonule of Zinn. Membrane of fibers (zonules) that holds the eye's lens in place.



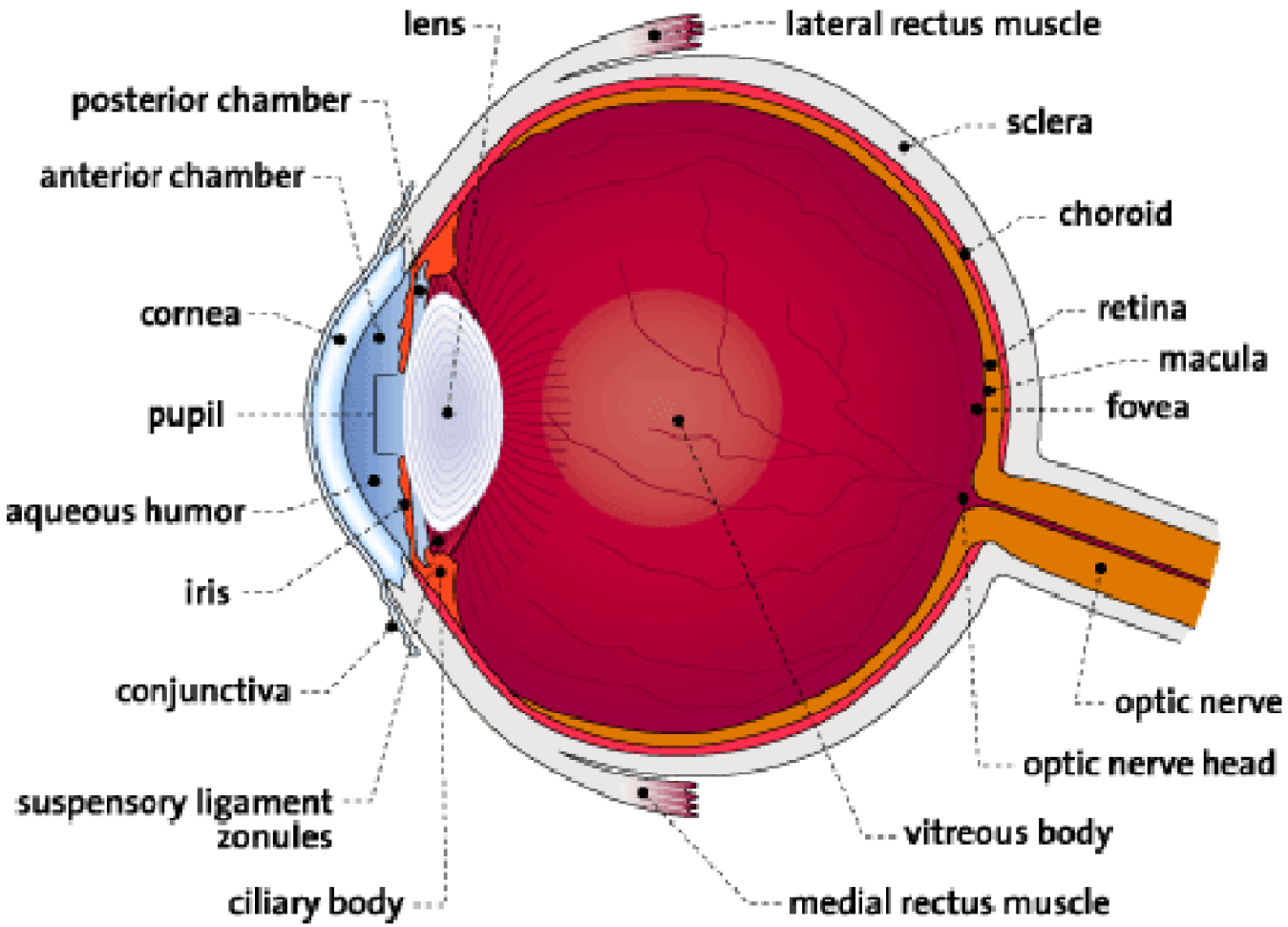
Ciliary Body

ciliary body
Part of the eye between the iris and the choroid; the three form the uvea. The ciliary body's main functions are accommodation, aqueous humor production and holding the lens in place.



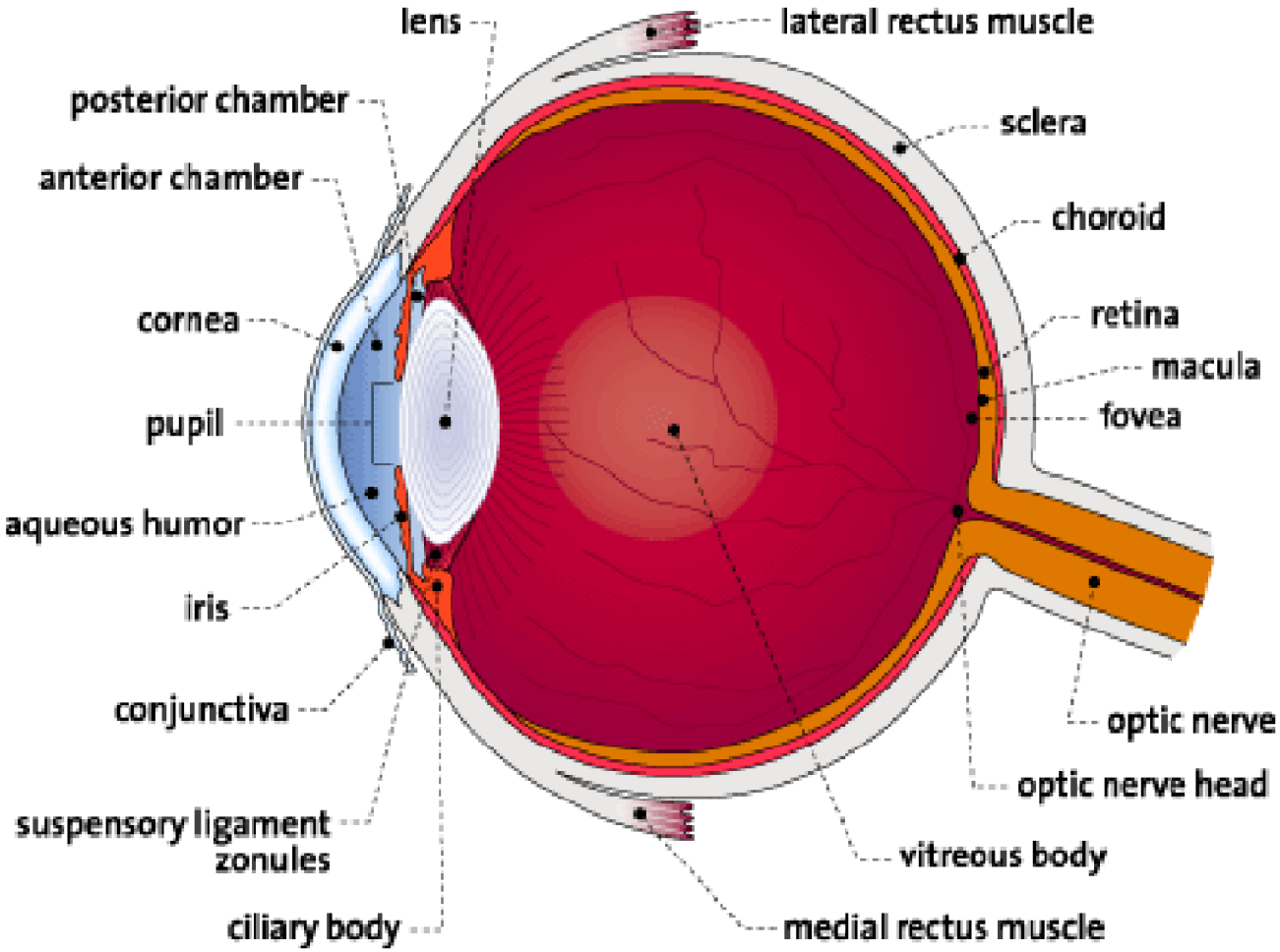
Macula

macula
Part of the eye near the middle of the retina; the macula allows us to see objects with great detail.



Fovea

fovea
A depression in the retina that contains only cones (not rods), and that provides acute eyesight.



Other Parts of the Eye

- - other parts of the human eye play a supporting role in the main activity of sight like
- - carry fluids - such as tears and blood - to lubricate or nourish the eye;
- - others are muscles that allow the eye to move;
- - some protect the eye from injury - such as the lids and the epithelium of the cornea;
- - some are messengers, sending sensory information to the brain - such as the pain-sensing nerves in the cornea and the optic nerve behind the retina;

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Color Blind

- - color blindness - a vision deficiency, or CVD;
- - affects approximately 1 in 12 men and 1 in 200 women in the world;
- - there are different causes of colour blindness;
- - for the vast majority of people with deficient color vision the condition is genetic and has been inherited from their mother;
- - although some people become color blind as a result of other diseases such as diabetes and multiple sclerosis

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Color Blind

- - or they acquire the condition over time due to the aging process, medication etc.;
- - most color blind people are able to see things as clearly as other people but they unable to fully 'see' red, green or blue light;
- - there are different types of colour blindness and there are extremely rare cases where people are unable to see any colour at all;
- - for example, a red/green color blind person will confuse a blue and a purple because they can't 'see' the red element of the color purple;
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Normal Vision

Deuteranopia