

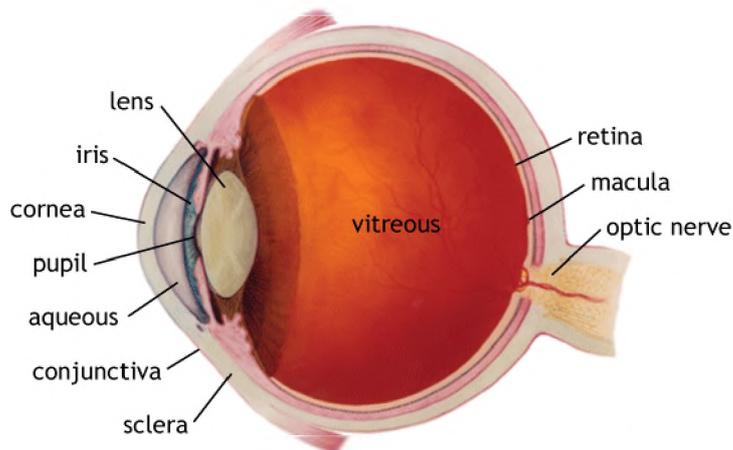
Ophthalmology

Ophthalmology is the branch of medicine that deals with the anatomy, physiology and diseases of the eyeball. An ophthalmologist is a specialist in medical and surgical eye disease.

Humans have five basic **senses**: touch, sight, hearing, smell and taste. The sensing organs associated with each sense send information to the brain to help us understand and perceive the world.

Anatomy of the eye

Translate the basic parts of the eye into Polish.



How Your Eyes Work

Complete the blanks in the text with the words from the box in the correct form.

detect, focus, extend, regulate, reflect off, concentrate, convert, change, send, pass through, contain, provide
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When light rays _____ an object and enter the eyes through the cornea you can then see that object.

The cornea bends the rays that _____ the round hole of the pupil. The iris opens and closes, making the pupil bigger or smaller. This _____ the amount of light passing through.

The light rays then pass through the lens, which _____ shape so it can further bend the rays and _____ them on the retina. The retina, which sits at the back of the eye, is a thin layer of tissue that _____ millions of tiny light-sensing nerve cells. These nerve cells are called rods and cones because of their distinct shapes.

Cones are _____ in the center of the retina, in an area called the macula. When there is bright light, cones _____ clear, sharp central vision and detect colors and fine details.

Rods are located outside the macula and _____ all the way to the outer edge of the retina. They provide peripheral or side vision. Rods also allow the eyes to _____ motion and help us see in dim light and at night.

These cells in the retina _____ the light into electrical impulses. The optic nerve _____ these impulses to the brain, which produces an image.

Answer the questions about the text above.

1. What is the function of the cornea?
2. Why does the iris open and close?
3. What does the lens do?
4. What does the retina contain?
5. Where are the cones and rods located? What are their functions?
6. How is the image in the brain produced?

Eye diseases

Translate the diseases into Polish.

1. blindness – _____
2. cataract – _____
3. cataracts – _____
4. colour blindness – _____
5. conjunctivitis – _____
6. dry eyes – _____
7. eyestrain – _____
8. glaucoma – _____
9. glaucoma – _____
10. macular degeneration – _____
11. night blindness – _____
12. presbyopia – _____
13. retinal disorder – _____
14. retinal disorders – _____
15. strabismus – _____
16. uveitis – _____

Match the illness with their descriptions.

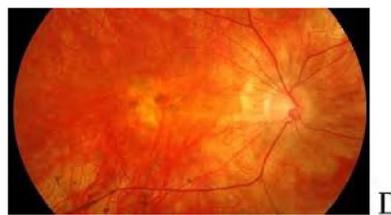
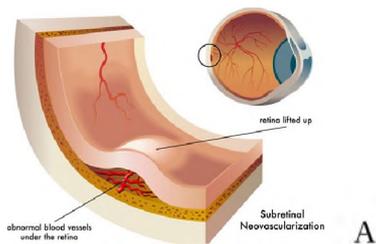
colour blindness, eyestrain, strabismus, uveitis, presbyopia, dry eyes
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1. when you can't see certain colours, or can't tell the difference between them (usually reds and greens) – _____
2. overuse of your eyes, they get tired and need to rest – _____
3. if your eyes aren't lined up with each other when you look at something – _____
4. a disease that causes inflammation of the uvea (middle layer of the eye that contains most of the blood vessels). It can destroy eye tissue. People with immune system conditions like AIDS or rheumatoid arthritis, may be more likely to have it. Symptoms may include: blurred vision, eye pain, eye redness, light sensitivity – _____
5. loss of the ability, despite good distance vision, to clearly see close objects and small print – _____
6. inability to make enough good-quality tears. The patient might feel like something is in the eye or like it's burning. Rarely, in severe cases, it can lead to some loss of _____

vision. Some treatments include: using a humidifier in your home, special eye drops that work like real tears – _____

Complete the table. Match each eye condition with the correct picture, symptoms and description.

No	Name of the disease	Picture number	Description of the disease	Symptoms of the disease
1.	cataract			
2.	conjunctivitis			
3.	glaucoma			
4.	retinal disorder			



Symptoms of the disease.

- a) blurred vision
- b) burning eyes
- c) defects in the side vision
- d) double vision in a single eye
- e) increased amount of tears
- f) increased sensitivity to light
- g) itchy eyes
- h) lost vision
- i) nausea or vomiting (accompanying severe eye pain)

- j) need for brighter light for reading and other activities
- k) redness in the white of the eye or inner eyelid
- l) seeing haloes around lights
- m) severe eye and head pain
- n) thick yellow discharge especially after sleep

Description of the disease.

1. Clouding of the normally clear lens of your eye, seeing through cloudy lenses is like looking through a frosty or fogged-up window.
2. It causes visual symptoms, it can affect any part of your retina, a thin layer of tissue on the inside back wall of your eye.
3. It is a complicated disease in which damage to the optic nerve results in vision loss.
4. It is an inflammation of the conjunctiva. The conjunctiva is the thin clear tissue that lies over the white part of the eye and lines the inside of the eyelid.

Prepare a list of symptoms of eye trauma.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Additional vocabulary

a dull pupil
 blind
 bulging eyes
 contact lenses
 eyesight
 glasses
 irritation
 long-sightedness
 sensitivity
 short-sightedness
 visual acuity
 visual field
 watering

Pronunciation. Practise reading the words below.

glaucoma /glɔ:kəʊmə/
 blindness /blaɪndnəs/
 strabismus /strəbɪzəməs/

uveitis /ju:vaɪtɪs/
 aqueous /eɪkwɪəs/
 sclera /sklɪərə/

presbyopia /prɛzbɪəʊpiə/
retina /rɛtɪnə/

conjunctivitis /kəndʒʌŋktɪvaɪtɪs/
macula /mækjʊlə/

Discussion. In pairs discuss the following questions.

1. How good is your eyesight?
2. When did you last have an eye test? How did you do?
3. If you have a problem, when did you first notice it?
4. Does anyone in your family have vision problems? What kind?
5. Is wearing glasses positive or negative for you?
6. What is the price range for glasses with lenses in your country?
7. At what age do most people need glasses?

Tears

One of the functions of the eye is to produce tears. Tears are important in maintaining healthy eyes. Tears nourish and lubricate the surface of the eye as well as wash away debris. A normal tear consists of water, oil, and mucus.

There are three main parts in the tear system:

1. Glands that make the tear fluid, oil, and mucus
2. Openings that let tears flow out of the eye
3. Ducts inside the nose that tears drain through

We make fewer tears as we age and that can lead to a condition called dry eye. Dry eye may be triggered by hormonal changes in the body and is common among women during pregnancy and menopause.

Interesting facts about eyes.

- Your eyeballs stay the same size from birth to death, while your nose and ears continue to grow.
- Corneas are the only tissues that don't have blood.
- 80% of our memories are determined by what we see.
- Eyes are the second most complex organ after the brain.
- Some people are born with two differently colored eyes. This condition is heterochromia.
- The average blink lasts for about 1/10th of a second. You blink about 12 times every minute.
- A fingerprint has 40 unique characteristics, but an iris has 256, a reason retina scans are increasingly being used for security purposes.

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