

Image creation

The biophysics of vision deals with the function of the retina associated with the processes of light absorption in the photoreceptors of the retina and the transfer of action potentials from the retina.

The receptors in the retina are rods and cones, followed by bipolar cells equivalent to the second neuron, then ganglion cells (the third neuron), which conduct the impulse to the subcortical centers, and the fourth neuron connecting the subcortex with the visual cortex. When the light energy hits the retina, it is absorbed in the photoreceptor cells (rods and cones) and is transformed into chemical energy.

The retina is differently sensitive to different wavelengths of light, but this sensitivity depends on the intensity of the light. Accordingly, three areas of vision are distinguished:

- **photopic (day) vision:** With sufficiently intense lighting, cones are provided. The sensitivity curve has a maximum around a wavelength of 555 nm and is stable;
- **mesopic vision:** cones and rods work at reduced light intensity. The sensitivity curve is unstable and the sensitivity shifts towards shorter wavelengths, with a maximum of around 509 nm;
- **scotopic (night) vision:** Vision is provided only by rods, and color vision is lost. The sensitivity curve is stable when the eye is dark-adapted.

Links

Related articles

- Eye (biophysics)/Principle of vision
- Rods
- Cones
- Eye (Biophysics)
- Action potential (biophysics)
- Line of sight
- Visible light

External links

- Zrak (česká wikipedie) (<https://cs.wikipedia.org/wiki/Zrak>)

Source

KYMPLOVÁ, Jaroslava. *Katalog metod v biofyzice* [online]. [cit. 2012-09-20]. <<https://portal.lf1.cuni.cz/clanek-793-katalog-metod-v-biofyzice>>.