

# Presbyopia

**Presbyopia** is an eye defect that often occurs in older people. This is a manifestation of the **degeneration of the eye lens material**.

## Symptoms of presbyopia

- A person holds a book, newspaper, magazine or anything to read at a considerable distance, usually at arm's length.
- At a normal reading distance, a person sees the writing quite blurry.
- Headache.
- At work, presbyopia is also manifested by **fatigue**.
- The emergence of **asthenopic problems** (eye pain and fatigue, blurred vision).

If we are tired or in a place where there is poor lighting, these symptoms worsen. Symptoms first appear around the age of 40 to 45. By age 60, symptoms often stabilize and do not worsen. We can therefore say that it is not directly an eye defect, but rather a natural consequence of the aging of the organism.

## The occurrence of a defect

At a young age, our lens easily changes its shape and is very flexible. Thanks to flexibility, we are able to focus at different distances, often even at a very close distance. We call this process accommodation). In the course of our lives, it happens that substances of a protein nature settle in the lens. Because of these substances, **the elasticity of the lens decreases**.

Due to the reduced elasticity, it is more difficult to focus on closer subjects. The reduction occurs between the ages of 40 and 45 and levels off around the age of 60.

## Course of presbyopia in other eye defects

Far-sighted people develop presbyopia earlier than near-sighted people.

## Correction of presbyopia

There is **no cure** for presbyopia, but there are many methods to improve the condition.

### Types of correction

- glasses,
- lenses,
- refractive surgery.

### Correction with glasses

#### Reading glasses

These glasses can be bought without a prescription and are also available in drugstores. It is recommended to choose the weakest pair of glasses that will allow us to see the letters for example in the newspaper. It is also better to try on several glasses and choose those whose magnification allows us to read comfortably. These types of glasses range from +1.00 diopters to +3.00 diopters.

#### Bifocal glasses

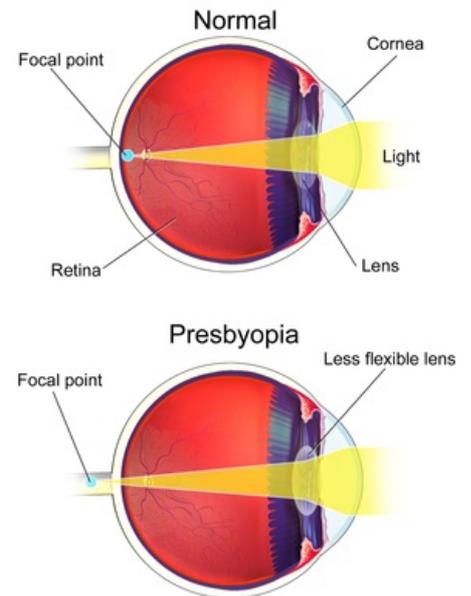
Bifocal glasses have a reliable effect on many people. In the lower half of the lenses, the glasses have a half-moon, in which the reading section is located. It follows that there is a visible transition between **individual distances**.

#### Trifocal glasses

Trifocal glasses have two visible horizontal lines. These lines are located in the lenses. This type of glasses differs from bifocal glasses in that they are also intended for **medium distance** vision. An example of middle distance is a computer screen.

### Lens correction

#### Progressive lenses



*The lens ages and stiffens, bringing the focal point behind the retina and causing blurry vision*

Presbyopia compared to normal vision

These lenses are similar to bifocal glasses. One of the main differences from bifocal glasses is that they have a **gradual transition** between the two parts. Bifocal glasses have this transition strictly separated. Among the main advantages of progressive lenses is their comfort. Thanks to these lenses, we do not have to change several types of lenses or glasses.

## Contact lenses

Contact lenses allow us to use two types, i.e. bifocal and multifocal lenses.

## Refractive surgery

In refractive surgery, we have several surgical procedures. Due to the fact that the shape of our cornea changes here, it is of course necessary to consult a doctor about possible side effects. Refractive surgery is not a reversible procedure. Before deciding to undergo surgery, it is recommended to try on lenses or glasses first.

Surgical procedures include:

- **Conductive keratoplasty** - here radio waves are used, which can change the shape of the lens **without surgery**. The procedure takes approximately only 5 minutes.
- **LASIK** (*Laser-Assisted in situ Keratomileusis*) - this procedure is used to **correct** the patient's **vision**. During the procedure, the cornea is reshaped in such a way that incoming light is correctly captured on the retina. Recovery from surgery is often faster and is slightly less painful than other corneal surgery.
- **Implantation of intraocular lenses** - the lens is removed, which is **replaced by a synthetic lens**.
- **Laser subepithelial keratectomy**.
- **Photorefractive keratectomy** - the last two methods are similar. However, photorefractive keratectomy differs from the previous surgical procedure in that the surgeon completely removes the epithelium and uses a laser to reshape the cornea. The epithelium is then not replaced and grows naturally. Later it corresponds to the cornea of a new shape.

## Links

### Related articles

- Myopia
- Hypermetropia
- Refractive errors
- Refractive errors of the eye

### External links

- Oční vady a onemocnění. Vetchozrakost (presbyopie) - špatné vidění na čtení [online]. [cit. 2019-02-07]. <<https://www.neovize.cz/jake-jsou-ocni-vady-a-onemocneni/vetchozrakost-presbyopie-spatne-videni-na-cteni/>>.
- Pan Optika zbystří váš zrak. Presbyopie – Stařecká vetchozrakost [online]. [cit. 2019-02-07]. <<http://pan-optika.cz/ocni-vady-a-nemoci/presbyopie-starecka-vetchozrakost/>>.
- Péče o zrak a zdravé oči. Co je presbyopie?. [online]. [cit. 2019-02-07]. <<https://coopervision.cz/pece-o-zrak-a-zdrave-oci/co-je-presbyopie>>.
- Rehabilitace.info Magazín o zdraví. Vetchozrakost (presbyopie) – příznaky, příčiny a léčba. [online]. [cit. 2019-02-07]. <<https://www.rehabilitace.info/zdravotni/vetchozrakost-presbyopie-priznaky-priciny-a-lecba/>>.

### Resources

- NEOVIZE, S.R.O., et al. *Oční vady a onemocnění : Vetchozrakost (presbyopie) - špatné vidění na čtení* [online]. NeoVize oční klinika, ©2008-2017. [cit. 2019-02-07]. <<https://www.neovize.cz/jake-jsou-ocni-vady-a-onemocneni/vetchozrakost-presbyopie-spatne-videni-na-cteni/>>.
- KOPÁČ, DIS., Aleš. *Pan Optika zbystří váš zrak : Presbyopie – Stařecká vetchozrakost* [online]. Oční optika Pan Optika, ©2007. [cit. 2019-02-07]. <<http://pan-optika.cz/ocni-vady-a-nemoci/presbyopie-starecka-vetchozrakost/>>.
- COOPERVISION,, et al. *Péče o zrak a zdravé oči : Co je presbyopie?* [online]. CooperVision, ©2019. [cit. 2019-02-07]. <<https://coopervision.cz/pece-o-zrak-a-zdrave-oci/co-je-presbyopie>>.
- REHABILITACE.INFO,, et al. *Rehabilitace.info Magazín o zdraví : Vetchozrakost (presbyopie) – příznaky, příčiny a léčba* [online]. REHABILITACE.INFO, ©2019. [cit. 2019-02-07]. <<https://www.rehabilitace.info/zdravotni/vetchozrakost-presbyopie-priznaky-priciny-a-lecba/>>.