

## USING LASERS IN OPHTHALMOLOGY

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From the very beginning, find out what ophthalmology is. Ophthalmology is the field of medicine that studies eye, its anatomy, physiology and diseases, and also develops the treatment and prevention methods of eye diseases.

A revolutionary tool in ophthalmic practice is laser. A laser is a device that emits light through a process of optical amplification based on the stimulated emission of electromagnetic radiation. The term "laser" originated as an acronym for "light amplification by stimulated emission of radiation".

And now let's look at the relevance of laser using in ophthalmology. They are:

- The possibility of difficult operations;
- Simplicity and velocity of operations;
- Absence of negative impact on healthy eye area due to the local impact of laser radiation;
- High efficiency and successful operation coefficient.

It is known that 80% of the information man perceives through our vision. Therefore, it is important to keep the eye health. The most common eye diseases in our time are: nearsightedness (miopy), farsightedness (hypertropy) and astigmatism. This is due to the violations of the eye refractive ability. In a good eye rays precisely focus on a retina. In a myopic eye light rays don't focus on a retina but in front of it, that causes vision out of the focus. In a hyperopic eye light rays do not focus on a retina either but behind of it. In an astigmatic eye light rays enter the eye and focus on different focal points.

All these diseases are cured by the LASIC method, which is a type of refractive surgery for the correction of myopia, hypermetropia, and astigmatism. Operation is fast and allows to turn normal human vision. And the most popular using laser systems in LASIC is: VISX Star S4 IR, NIDEK «EC-5000», IntraLase FS60.

The LASIC operation consist of 3 steps: cornea flap creation (this process is achieved with a mechanical microkeratome using a metal blade); laser remodeling; repositioning of the flap.

But LASIC method has some main complications and limitations: age of 18 (due to the necessity of eyeball forming); pregnancy and lactation; glaucoma; progressive miopy; cataract; the syndrome of "dry eye" in aftersurgery period; overcorrection and insufficient correction; fluctuations in visual acuity.