

PREMIUM INTRAOCULAR LENSES

During a cataract operation your natural lens is replaced by an artificial lens (intraocular lens = IOL).

There are many options of intraocular lenses (IOLs) available.

The function of the lens in the eye

The natural lens is clear and elastic when you're young, and can change its shape to focus for far and near objects respectively (accommodation). An artificial lens is inserted at the same site as the natural one. In its most basic form (monofocal), this new lens cannot change its shape/power for far and near focus. It also has some other optical properties that differ from those of a natural lens. For this reason, some special intraocular lenses have been developed and are designed to address some of these disadvantages.

How does a standard intraocular lens (IOL) perform?

The optics of a standard IOL are spherical and monofocal; essentially like a basic magnifying glass and they focus an image of a fixed distance onto the retina (with some distortion at the rim). Almost all patients are highly satisfied with the results of these IOLs.

Types of premium IOLs

In addition to the standard IOLs, there are a variety of special or premium IOLs that try to optimize the postoperative result by using different materials and optical designs.

- **Aspheric lenses** have special optics designed to reduce distortion of the image particularly near the edge of the IOL.
- **Toric lenses** are useful for reducing corneal astigmatism, so that patients with astigmatism can have clear or better distance vision without glasses.
- **Multifocal lenses** create an image for far and another image for near objects. These have been developed for patients who do not want to wear reading glasses. The multifocal lens is constructed in such a way that they project both a near and far image simultaneously onto the retina. The brain is then tasked with choosing between the near or far image.

The dual effect of these lenses is created with concentric rings which are designed to have different optical effects in different zones of the lens in conjunction with a varying pupil size. The multifocal lens design has some drawbacks. On the one hand the image quality is slightly less clear/sharp, which in everyday life is probably of no consequence ("you will see everywhere but nowhere perfectly"). On the other hand the dual optics create a loss of sharpness/contrast around light sources in the dark. In some rare cases this can cause serious difficulty with driving at night in particular.

- **Yellow lenses** filter out blue light, which is thought to protect the retina from harmful light radiation. There is no convincing evidence that these lenses have a positive effect.

What is reimbursed by the medical aid/health insurance?

This varies widely depending on your health insurer and plan.

We will provide you with a quotation so that these questions can be settled prior to surgery.