

Binovision — the alternative to multifocal lenses

An interesting method for spectacle independence

By Dr Sylvia Paulig

Today we can offer our patients a number of solutions to lead a life without glasses. In cataract surgery and refractive clear lens extraction we have implanted multifocal lenses for a number of years with relatively good results. For more than two years the Light Adjustable Lens (LAL), a silicone lens manufactured by CalhounVision, Pasadena, has been available as an interesting alternative.

Background

The lens was developed by Dr Robert Grubbs, PhD (Noble Prize winner for Chemistry 2005) and Dr Daniel Schwartz.

With this lens, post-operative fine-tuning corrections of up to ± 2 D spherical and up to 2 D cylinder can be achieved by means of UV radiation.

The lens is folded and implanted through a 3.0 mm incision by forceps or cartridge. In the third postoperative week the correcting radiations can begin. Using the Calhoun LDD-irradiation system it is possible to adjust the refractive power of the lens with high precision and customize it to the patients' individual wishes and expectations.

Radiation of the centre of the lens results in thickening of the lens and thus an increase in refractive power. Radiation of the periphery leads to thinning of the lens centre and a reduction in power. Astigmatism can also be corrected by aligning the radiation selectively with the axis of the cylinder.

All patients will need to wear special UV absorbing glasses from the time of surgery until two days after the last lock-in.

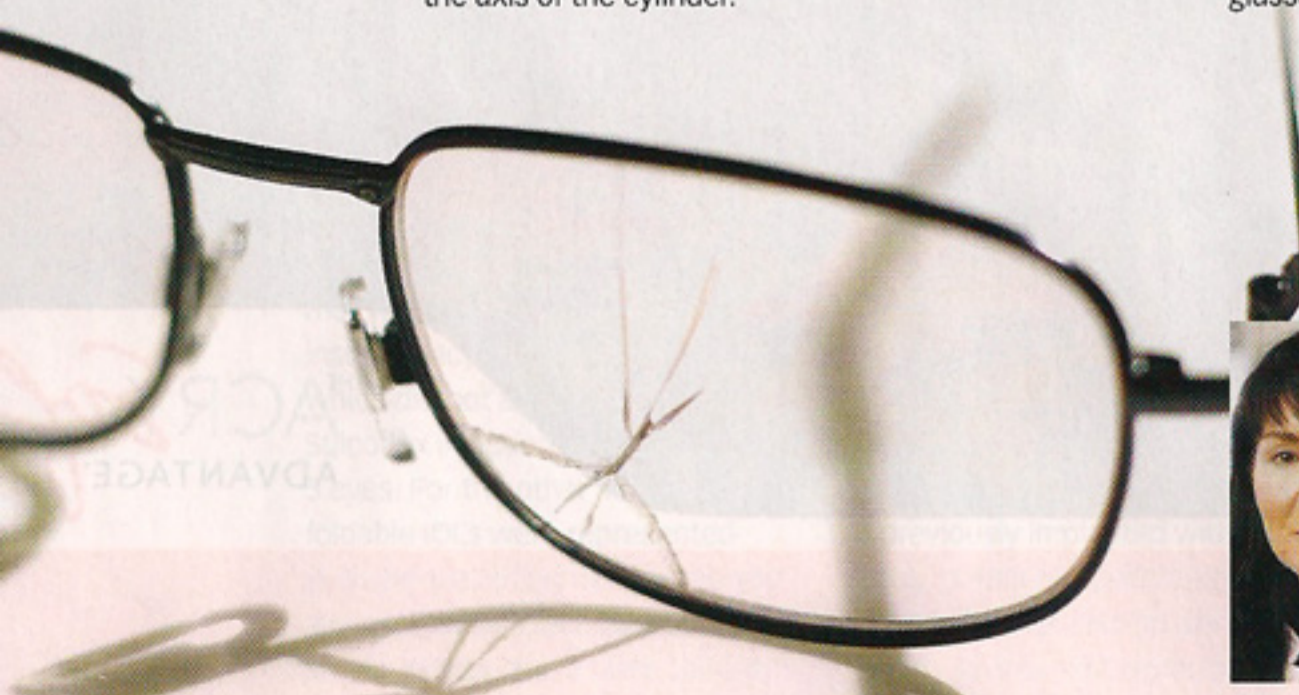
Results and discussion

Right from the beginning of our work with the LAL, we were very happy with the precise prediction of the intended correction (± 0.25 D). But we also observed that the lens becomes positively aspheric when radiated and thus increases the depth of field. At the same time patients keep their normal stereoscopic vision.

Patients who made the decision to have surgery on both eyes have also opted for our Binovision treatment. Binovision is a radiation technique that we developed in our clinic. It allows the surgeon to adjust both eyes so that the patient can see J1 or J2 as well as 20/20 in the distance with good intermediate vision. In contrast to the monovision technique the patient achieves excellent monocular as well as binocular vision at practically all distances while keeping normal stereoscopic vision.

Today we reach the desired goal with high precision. Under Binovision we understand adequate near, intermediate and distant vision in the same eye without glasses and stereoscopic binocular vision at all distances.

We are convinced that Binovision with the Calhoun Light Adjustable Lens is superior to the other lenses presently available. It is a highly interesting method to offer to our patients who want perfect vision without glasses.



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Dr Paulig has no financial interests in the subject matter.