The AkkoLens Accommodating Intraocular Lens

a report by
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Standard monofocal intraocular lenses (IOLs) cannot be voluntarily brought into focus; while patients can see perfectly in the distance, they must wear glasses to read. The 'holy grail' of IOL development is an IOL that can both restore sight and allow the patient to focus without glasses: an accommodating intraocular lens (AIOL).

The AkkoLens AIOL consists of an anterior element with a spherical lens to correct the overall refraction of the eye, and two cubic optical surfaces for varifocal effect. The cubic elements are fitted by a spring-like haptics fused at the rim to allow movement. Based on successful results over the past two years, AkkoLens International will be in clinical trials in 2008 with true pseudophakic AIOLs for cataract and, later, for presbyopia.

AkkoLens International bv is a medical device start-up company in The Netherlands that develops ophthalmic products including AIOLs for restoration of vision and accommodation in cataract patients, and accommodation in presbyopic persons.

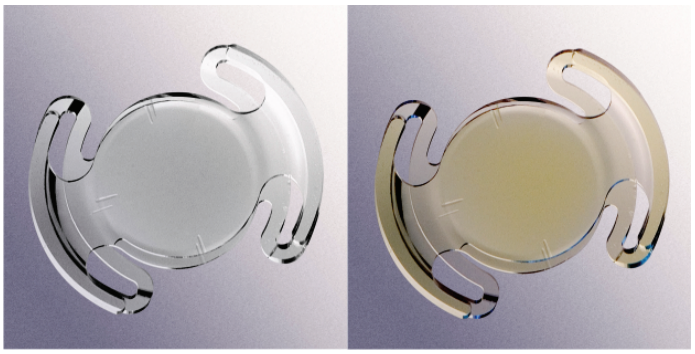
The Market

Every year, 20 million lenses are replaced by IOLs because of cataracts. During simple outpatient surgery the original lens of the eye is replaced by an IOL made of plastic. However, with current IOLs the eye cannot be voluntarily brought into focus. The AkkoLens AIOLs will both restore sight and allow the patient to focus without glasses.

The AkkoLens Technology

The AkkoLens AIOL is based on cubic optical elements that are fitted by spring-like haptics fused at the rim to allow a movement perpendicular to the optical axis. The AkkoLens AIOL uses the natural system of the eye for accommodation, and manufacturing materials and surgery are standard. The AkkoLens homepage offers an animation of the optical effect.

Figure 1: The AkkoLens Accommodating Intraocular Lenses



Management and Partners

Dr Michiel Rombach (Chief Executive Officer and founder of AkkoLens) and Dr Aleksey Simonov (Chief Scientific Officer) co-ordinate the development of the IOLs with a number of technology and medical partners in Europe and abroad. The company has offices and laboratory facilities in Breda and Delft, The Netherlands.

Manufacturing

Procornea Nederland bv (Eerbeek, The Netherlands, www.procornea.com) uses advanced high-precision lathing technologies for advanced IOL manufacturing. Procornea manufactures the Akkolens products for technical and medical trials.

Financial Partners

The company is funded by a consortium of Venture Capital (MedSciences Capital, Amsterdam, The Netherlands; www.medsciencescapital.com) and private investors as well as long-term loans from larger international industries. ■

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