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 AIOL 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.