

ACMIT

Austrian Center for Medical Innovation and Technology

Programme: COMET – Competence Centres for Excellent Technologies

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RALV – EXPERIENCE THE ACHIEVABLE VISION

RALV ALLOWS PRESBYOPIC PATIENTS TO EXPERIENCE PREOPERATIVE VISION THROUGH TRUE INTRAOCULAR LENSES (IOL) TO EXPERIENCE POSTOPERATIVE VISION WITH AN IOL PRIOR TO IMPLANTATION.

With increasing age - from the age of 45 to 50 - the eye increasingly loses the ability to adapt to different distances of vision (accommodation). This presbyopia is mainly caused by a hardening of the natural lens of the eye. In everyday life, therefore, either varifocals have to be worn or the glasses have to be changed frequently depending on the visual distance, which many people perceive as a burden. Often this also prevents active participation in certain professional or leisure activities. The replacement of the natural lens of the eye with an artificial lens can provide relief. Various options for remedying presbyopia are available here: Multifocality, extended-depth-of-focus, monovision, etc. With a lens exchange, the refractive error is also corrected so that glasses are no longer needed for distance vision. Another argument in favor of early lens exchange is that after a certain age, vision deteriorates further anyway due to

clouding of the crystalline lens (cataract), after which surgery is required in any case.

It is important to find the best lens model for each patient before surgery. This varies greatly from individual to individual (neuronal processing of the visual impression, properties of the cornea, previous history, etc.). Until now, this has been done in a medical consultation and by means of computer-generated sample images; a direct view through the intraocular lens was not possible before implantation.

The aim of this project was to close this gap and to make it possible to experience individual vision through the IOL before implantation. In this way, different lens types can be compared and subjectively evaluated before surgery.

SUCCESS STORY

Impacts and Effects

The main benefit of RALV (=Real Artificial Lens Vision) is that people can "try out" different IOLs before implantation and select the IOL that best suits them individually (e.g. monofocal, multifocal with different characteristics). This maximizes patient satisfaction and reduces the risk of follow-up surgery.

ACMIT developed the RALV optical system in collaboration with 1stQ Deutschland GmbH, an internationally renowned manufacturer of intraocular lenses.

The further development and marketing of RALV is carried out by the newly founded spin-off company DEZIMAL GmbH.

ACMIT has been involved in the entire process from application-oriented research to successful establishment of a spin-off company.



The optical system RALV Copyright DEZIMAL GmbH © 2023

Supported by COMET funding and partner contributions, existing competencies were expanded, IP generated and licensed out to the spin-off company. Development to series production readiness and series production will take place in Austria after completion of clinical validation. Target markets are initially Austria and Germany.

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Project Partners

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- DEZIMAL GmbH, Vienna, Austria

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