

Symposium

INTERNATIONAL SCIENTIFIC
SYMPOSIUM: *WHAT'S NEW IN
REFRACTIVE EYE SURGERY*

PREFACE

Dear colleagues and friends,

The Department of Medical Sciences of the Croatian Academy of Sciences and Arts in cooperation with Special Eye Hospital Svjetlost, University of Rijeka have organized International Scientific Symposium *What's New in Refractive Eye Surgery* in Zagreb, Croatia on June 10th 2016.

Refractive errors are very common reasons of impaired vision. Main refractive errors are short-sightedness, long-sightedness (hyperopia), astigmatism and presbyopia. Namely, the light coming in to the eye needs to be focused on the back of the eye (the retina) for someone to see clearly. In long-sightedness people have eyes that are too short, which means the light focuses behind the retina. This means that they have to focus more than they should do, particularly on things that are close up. In short-sightedness people have eyes that are too long, so the light focuses in front of the retina. This means that they cannot see things clearly if they are far away from them (such as the TV or board at school). Astigmatism is the refractive error occurring when the patient's cornea is steeper in either vertical (named with-the-rule astigmatism) or in the horizontal axis (named against-the-rule astigmatism); if those two meridians are perpendicular it is called a regular astigmatism. A so called oblique astigmatism occurs if the steepest meridian lies in an oblique position (between 120-150° or 30-60° meridian). Presbyopia is refractive error which becomes noticeable with the aging process of the eye. Namely, when a young person looks at something close up (for example to read a book), the muscles inside the eye that surround the lens contract to make the lens change shape. This focuses the light from the book onto the retina. However, as we get older, the lens naturally stiffens and so it changes shape less easily. This means that the distance up to which we are able to focus gets further away and we are no longer able to focus on things that are close to us, having to hold them further away to see them clearly. Although all the mentioned refractive errors can be conventionally treated with the use of glasses or contact lenses, more and more patients decide to enhance their vision by performing refractive eye surgery. In a last two decades, there was a significant improvement in quality of surgical management of all the mentioned refractive errors and this was the topic covered by the scientific symposium "What's New in Refractive Eye Surgery".

During this scientific symposium, all the latest achievements in refractive eye surgery have been presented. Symposium was divided into three sections: refractive surgery on the lens, refractive surgery on the cornea and refractive outcome after corneal transplantation. It is well known that the refractive laser surgery is one of the most frequently performed surgeries, and that more than 20 million patients have been already operated. Laser corneal ablation is highly effective in treating all the refractive errors for distance vision, and may be the best option for younger population. However, for patients aged 45 or more, only distance vision can be corrected by laser ablation, but the problem of presbyopia remains. Thus, in such cases refractive surgery is no more performed by laser surgery on the cornea but with the surgery on the lens with the implantation of multifocal intraocular lenses. It means that in modern ophthalmology not only very young patient can benefit from the refractive surgery, but also those patients who suffer from either short-sightedness, long-sightedness (hyperopia), or astigmatism combined with presbyopia. In last two decades, significant improvement in intraocular lens design enabled eye surgeons to provide full range of vision to patients with clear lens having presbyopia, and those who have already developed cataract. In both cases, multifocal lenses can provide good vision for distance, intermediate distance and for reading purposes.

During the symposium, eminent speakers from Austria, Poland, Turkey, Serbia and Croatia have presented their experience with implantation of new intraocular lenses, novel approach of surgery on the lens with femtosecond laser technology and correction of the eye astigmatism with new generation of intraocular lenses. In the second part, modern approach toward eye surgeries on the cornea were discussed together with the implantation of implantable collamer lenses in the posterior eye chamber in patients with very high refractive error which are thus untreatable by laser. Finally, one section covered the management of the refractive errors after corneal transplantation. Namely, the main barrier to good vision after corneal graft is still surgically induced astigmatism and even this problem can be nowadays treated with the use of newest intraocular lenses which can correct significant amount of astigmatism.

At the end of the scientific programme, participants have had a chance of roundtable discussion to present their experience in refractive eye surgeries and to exchange different approaches toward the treatment of a specific refractive error.

Sincerely yours,
President of the Organizing Committee
Iva Dekaris



Figure 1. President of the Croatian Academy of Sciences and Arts Zvonko Kusić and Head of the Department of Medical Sciences Marko Pećina together with the invited speakers before the beginning of the Symposium. From left to right: prof. Nikica Gabrić, MD, PhD; Academician Dragan Dekaris; prof. Slobodanka Latinović, MD, PhD; Navid Ardjomand, MD, PhD; Academician Zvonko Kusić, prof. Iva Dekaris, MD, PhD; Academician Marko Pećina, and prof. Ewa Mrukwa Kominek, MD, PhD.



Figure 2. Participants of the Scientific Symposium *What's New in Refractive Eye Surgery* in the Palace of the Croatian Academy of Sciences and Arts.