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EYE
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INSTITUTE



Pinelli Presby Profile®
Treatment options for presbyopia

Solutions in sight
www.seri-lugano.ch



Roberto Pinelli MD

FMH specialist in ophthalmology and eye surgery

✦ What is presbyopia?

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Presbyopia (long-sightedness, also far-sightedness) is an inevitable, unpreventable physiological process that develops with age and results in the gradual loss of elasticity in the lens of the eye.

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It generally starts around the age of 40-45, when it becomes increasingly difficult to focus on small objects at close range – small print in the paper, a menu at a restaurant or a text message on your phone.

It is caused by the thickening of the crystalline, the transparent structure that allows the eye to focus which becomes increasingly resistant to the process of accommodation.

Accommodation (i.e. the ability to focus close-up) is controlled by the ciliary muscle, and works very much like the zoom of a camera. The gradual deterioration of the ability to focus close-up is part of the natural ageing process.

Today presbyopia can be corrected

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Nowadays the effects of age-related farsightedness can be eliminated with refractive, corneal or intraocular eye surgery.
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Presbyopia is a gradual, irreversible process which cannot be completely stopped, although there are individual differences and certain substances can influence its progression.

At SERI Lugano we devote special attention to the study of surgical options for presbyopia. Dr Pinelli and his team have developed an innovative surgical technique, the Pinelli Presby Profile[®], which is protected by an international patent.

The Pinelli Presby Profile[®] is a variation and refinement on the well-know LASIK technique, and a further evolution of Dr Pinelli's own P-Curve procedure. The goal of the Pinelli Presby Profile[®] is to modify the corneal surface so as to offer presbyopic patients good near and distance vision at the same time.

«In the future – says Dr Pinelli, Scientific Director at SERI Lugano – we'll be able to prepare the cornea of our patients in advance, at the onset of presbyopia, around the age of 40-45. As a result, when presbyopia starts to develop, the cornea will not be affected, having been previously reshaped in such a way as to prevent the effects of this natural process.

The great advances of scientific research

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Presbyopia is one of the most fascinating challenges in vision research and ophthalmology. Thanks to many exciting innovations, today's science of vision offers a number of different solutions to minimise the problems caused by presbyopia.
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Pinelli Presby Profile® is an international patent and a registered trademark. It consists in an improved version of the P-Curve, the refractive surgery procedure developed by Dr Pinelli that is commonly used to correct more than one visual defect at a time by modifying the corneal curve.

The concept of "profile", however, goes beyond the notions of corneal "curve" and multifocality, as it is based on the exact calculation of the degree of corneal non-sphericity needed for presbyopia correction that is acceptable to the human eye.

The Pinelli Presby Profile® procedure can be performed using excimer laser, femtosecond laser, intraocular lenses and cataracts lenses and on any corneal surface that is suitable for presbyopia correction.

Although the crystalline lens, the retina and the cornea have very different characteristics and profiles, they are all suitable for receiving the profile designed by Dr Pinelli.

The Pinelli Presby Profile® procedure can be performed using different techniques, and it can be tailored to address the needs of each individual patient.

The Pinelli Presby Profile® is a highly versatile procedure which has capitalised on several years of surgical research and practice in the application of the pioneering P-Curve technique introduced by Dr Pinelli.

A highly personalised solution for each individual patient

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It is important to stress that there is only one correct surgical option for each patient: the one that can guarantee the most satisfying results for that particular patient.

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Pre-operative evaluation is fundamental, as it is the only way to understand if the patient is a good candidate for a certain type of surgery. An experienced refractive surgeon will be familiar with all the most advanced surgical options and will recommend the best solution to correct the patient's presbyopia.

International acknowledgements to Dr Pinelli's research work

- ▶ Invited member of the British International Intra-Ocular Implant Club (IIIC), which gathers 250 world experts (2002 - present);
- ▶ Member of the Vision International Presbyopia (VIP) Club, Ophthalmologic Network Organisation (ONO);
- ▶ Member of the Editorial Committee of the American Journal of Refractive Surgery;
- ▶ Member of the International Committee of Ophthalmology Times Europe;
- ▶ Member of the International Editorial Board of Cataract and Refractive Surgery Today (CRST);
- ▶ Member of the Expert Board of the International Journal of Ophthalmology (IJO);
- ▶ Member of the International Council of the International Society of Refractive Surgery / American Academy of Ophthalmology (ISRS/AAO), (2000 - 2010);
- ▶ Member of the Executive Committee of the International Society of Refractive Surgery / American Academy of Ophthalmology (ISRS/AAO), (2009 - 2010);
- ▶ Winner of the American Academy of Ophthalmology Achievement Award, (2010);
- ▶ Member of the International Meetings Committee of the International Society of Refractive Surgery (ISRS) (2013 - present);
- ▶ Member of the Publication Committee of the European Society of Cataract and Refractive Surgery (ESCRS), EUROTICES, (2000 - 2003);
- ▶ Chairman of the Italian Society of Refractive Surgery (SICR) between 2004 and 2009;
- ▶ Chairman of the non-profit organisation SEEING between 2004 and 2010;
- ▶ Member of the Scientific Advisory Board of Biosyntrx;
- ▶ Member of the Medical Advisory Board of Avedro, Inc;
- ▶ Executive Editor for the Ocular Microinflammation section of the Interdisciplinary Journal of Microinflammation, (2014 - present).

What is the Pinelli Presby Profile®

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It corrects presbyopia using excimer laser or femtosecond laser. It evolved out of LASIK, the well-know surgical corrective procedure that has been successfully used for over 20 years. It strengthens the corneal tissue using UV light.
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The Pinelli Presby Profile® reshapes and personalises the corneal surface making it more non-spherical to correct presbyopia. This restores the eye's ability to focus on all distances, thus eliminating the need for any type of corrective lenses. The eye is not spherical. It is in fact almost egg-shaped. Central to Dr Pinelli's methodology is the ability to design a profile which adapts to different structures in the eye: the crystalline lens, the retina and the cornea. It provides an alternative to the principle of multifocality and is therefore free from any discomfort problems induced by multifocal lenses, because it is based on the concept of non-sphericity and no longer on that of corneal multifocality. The most prominent feature of the Pinelli Presby Profile® methodology is that it allows simultaneous correction for both close- and long-range vision in a single surgical operation.

✦ **An international patent held by Dr Pinelli, the Pinelli Presby Profile® offers numerous advantages:**

- ▶ it is a non-invasive, painless, fast, and effective laser eye surgical procedure;
- ▶ it corrects more than one visual defect at a time, allowing the patient to do away with reading spectacles and correction glasses and lenses for distance vision all together;
- ▶ it supersedes multifocal glasses and lenses;
- ▶ it is suitable also for people with no visual defects prior to developing presbyopia;
- ▶ where required, the treatment may also include corneal strengthening with an X-tra component (corneal collagen cross-linking);
- ▶ the corneal profile concept is suitable for various surgical techniques such as excimer laser, IOLs, and refractive lensectomy.
- ▶ it is a highly personalised technique;
- ▶ it is an anti-ageing treatment, turning your biological clock back by 10 years.

How is the operation performed?

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The operation is fast and totally painless. It is carried out under topical anaesthesia, by applying a few anaesthetic eye drops.
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Using the excimer laser or the femtosecond laser, the surgeon creates a very thin flap of corneal tissue. The flap is lifted and laser is applied to reshape the corneal tissue and create the desired non-spherical profile, based on an algorithm which determines the laser action field.

After this phase, which is specifically aimed at correcting presbyopia, Dr Pinelli will decide whether to perform an X-tra treatment, depending on the patient's individual characteristics. If the treatment is administered, a few drops of riboflavin (B2 vitamin) are applied to the cornea and allowed to spread for approximately 60 seconds. The flap is then placed back over the reshaped surface of the cornea and it, too, is soaked in riboflavin.

Accelerated corneal cross-linking (C3-R) is then performed for about 75 seconds, during which time the combined action of riboflavin (B2 vitamin) and UV-A rays strengthens the bonds between the collagen fibres in the corneal tissue.

There's no need for stitches because the flap merges back into the underlying tissue naturally and physiologically within a few hours.

✦ **A repeatable type of eye surgery**

Presbyopia is a progressive process which affects everyone, although with some individual differences. After a while, a new operation may become necessary to consolidate the results achieved by the first surgery. Patients will be monitored over the years to identify the best possible solutions and minimise the effects of the gradual loss of elasticity of the crystalline lens.

SERI Switzerland Eye Research Institute is a centre for vision science research and innovation in the field of eye surgery. Founded in 2013 in Lugano, it offers non-invasive, bilateral, and painless corrective surgery for all kinds of sight defect (including presbyopia).

Alongside refractive surgery, SERI Switzerland Eye Research Institute also offers tailored LAMal-recognised diagnosis and treatment in all areas of ophthalmology, from retinal disorders to paediatric ophthalmology.

Under the scientific guidance of Roberto Pinelli MD, SERI Switzerland Eye Research Institute is constantly breaking new ground in the fields of refractive surgery, clinical ophthalmology, eye surgery, and paediatric ophthalmology.

Treatment and surgery at SERI Lugano is always in line with the latest, safest, and most effective scientific developments available. This is made possible thanks to ongoing research and the use of state-of-the-art diagnostic and surgical technology.

SERI Lugano offers a wide range of surgical options and a highly personalised approach, as well as the latest generation of laser eye surgery technology, coupled with the expertise and relational skills of qualified specialists.

The institutional culture at SERI Lugano is geared entirely to achieving excellence in the field of vision sciences and full patient satisfaction.

SERI Switzerland Eye Research Institute SA



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