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Carl Zeiss Meditec AG
Goeschwitzer Strasse 51–52
07745 Jena
Germany
www.zeiss.com/med/contacts
www.zeiss.com/relex-smile

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ReLEx SMILE from ZEISS

The first minimally invasive,
flapless SMILE solution



Creating vision with a SMILE.

ZEISS ReLEx SMILE

// INNOVATION
MADE BY ZEISS

Move up to 3rd Generation Laser Vision Correction With ReLEx SMILE from ZEISS

Small incision lenticule extraction or SMILE is the 3rd generation of laser vision correction beyond PRK and LASIK and is redefining refractive surgery as we know it. Until now, ZEISS is the only company to offer a way for treating patients with this unique, minimally invasive and flapless SMILE procedure – with ReLEx[®] SMILE from ZEISS. ReLEx SMILE is exclusively performed with the femtosecond laser system VisuMax[®] from ZEISS.



LASIK

Flap side-cut of approx. 20 mm



Note: This diagram is based on an optical zone of 6.5 mm.

Up to 80 % smaller side-cut

From flap to minimally invasive surgery: LASIK requires a side-cut of roughly 20 mm. With ZEISS ReLEx SMILE, a small incision of 2–4 mm is sufficient. The majority of the upper corneal layers remains untouched.

Up to 30 % smaller cap incision area

The lamellar incision area is roughly 1/3 smaller compared to Femto-LASIK.

Indication range

ReLEx SMILE for myopia and astigmatism:

- Sphere: –0.50 to –10.00 D
- Cylinder: 0 to 5.00 D
- Spherical equivalent: –0.50 to –12.50 D

Flapless

ReLEx SMILE is based on the flapless SMILE procedure. Because there is no flap, there are also no flap-related complications. This offers the potential for more biomechanical preservation and stability, also for fewer transected nerves and collagen fibers. Consequently, a significantly reduced incidence of dry eye is likely to be correlated.

All-femto

Precision, predictability and perfection are the hallmarks of ReLEx SMILE. Performed entirely with femtosecond technology, no complex nomograms or fluence tests are required. The ZEISS VisuMax is used to create a precalculated lenticule and incision with utmost accuracy and dependability every time.

Single-step

With ReLEx SMILE, the refractive correction is performed on one laser, with one treatment plan and only one laser process. That's what makes it a single-step solution. Moreover, the lenticule inside the intact cornea and the access incision are created in a single treatment step.

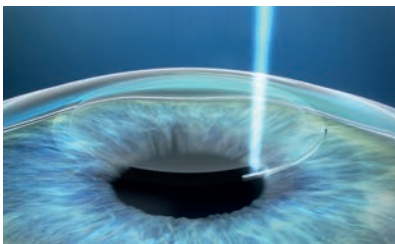
Minimally invasive, flapless surgery

Refractive correction with ZEISS ReLEx SMILE

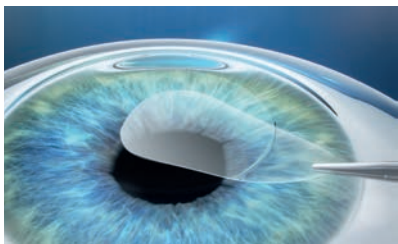
LASIK involves cutting a flap and folding it back to remove corneal tissue point by point. ZEISS ReLEx® SMILE, on the other hand, makes minimally invasive, flapless refractive correction possible for the first time. Utilizing the highly precise ZEISS VisuMax® femtosecond laser, it performs the vision correction in a single treatment process. Since the lenticule and access incision are created together, there is no need to reserve a margin of tolerance, and the cornea remains largely untouched.

ReLEx SMILE

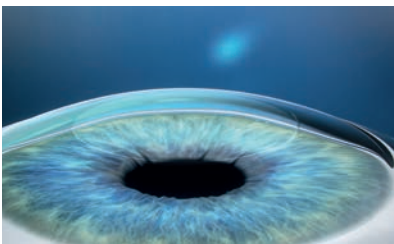
The three steps of small incision lenticule extraction



Step 1
A refractive lenticule and small incision of less than 4 mm are created inside the intact cornea – all in one step.



Step 2
The lenticule is removed through the incision with only minimal disruption to the corneal biomechanics.



Step 3
The removal of the lenticule changes the shape of the cornea, thereby achieving the desired refractive correction.

“Anyone not offering SMILE in the future will simply not survive in highly competitive markets.”

Dr. Sri Ganesh
Nethradhama, Bangalore, India, ESCRS 2015 Istanbul

“SMILE is now firmly established as the 3rd generation of laser vision correction beyond advanced surface ablation and flap surgery.”

Prof. José Güell
IMO, Barcelona, Spain, ESCRS 2014 London

VisuMax from ZEISS

Defining new trends in modern corneal surgery

ZEISS ReLEx SMILE runs on the ZEISS VisuMax, a groundbreaking femtosecond laser system that is significantly shaping the world of refractive surgery. Incorporating superior ZEISS technology, it ensures excellent reproducibility and predictability, even with severe corrections. Its outstanding cutting precision, exceptional speed and gentle treatment approach make it an ideal platform for numerous advanced corneal surgery applications such as SMILE.



A contact glass as uniquely designed as the cornea
Like the surface of the human cornea, VisuMax contact glasses are curved to optimally fit the anatomy of the eye. The cornea can largely retain its natural physiological shape. Also, artifacts in the cutting outcome are avoided, as is unnecessarily high IOP.



Maximum cutting accuracy
High-precision ZEISS optics provide an extremely focused laser beam. The result is minimum laser pulse energy at a high pulse frequency for unsurpassed incision control – curved, three-dimensional incisions at precisely the desired depth in the cornea.



Brilliant visual control
The integrated high-quality ZEISS surgical microscope ensures precise and complete visual control during every manual treatment manipulation. It includes a digital video camera for recording surgical procedures right on the spot.

A platform for all three generations of laser vision correction
When the ZEISS VisuMax is combined with a MEL® excimer laser from ZEISS, it becomes a platform for all three generations of laser vision correction – the only one of its kind. Refractive clinics can offer patients very individualized treatments and also operate more successfully in competitive environments.

