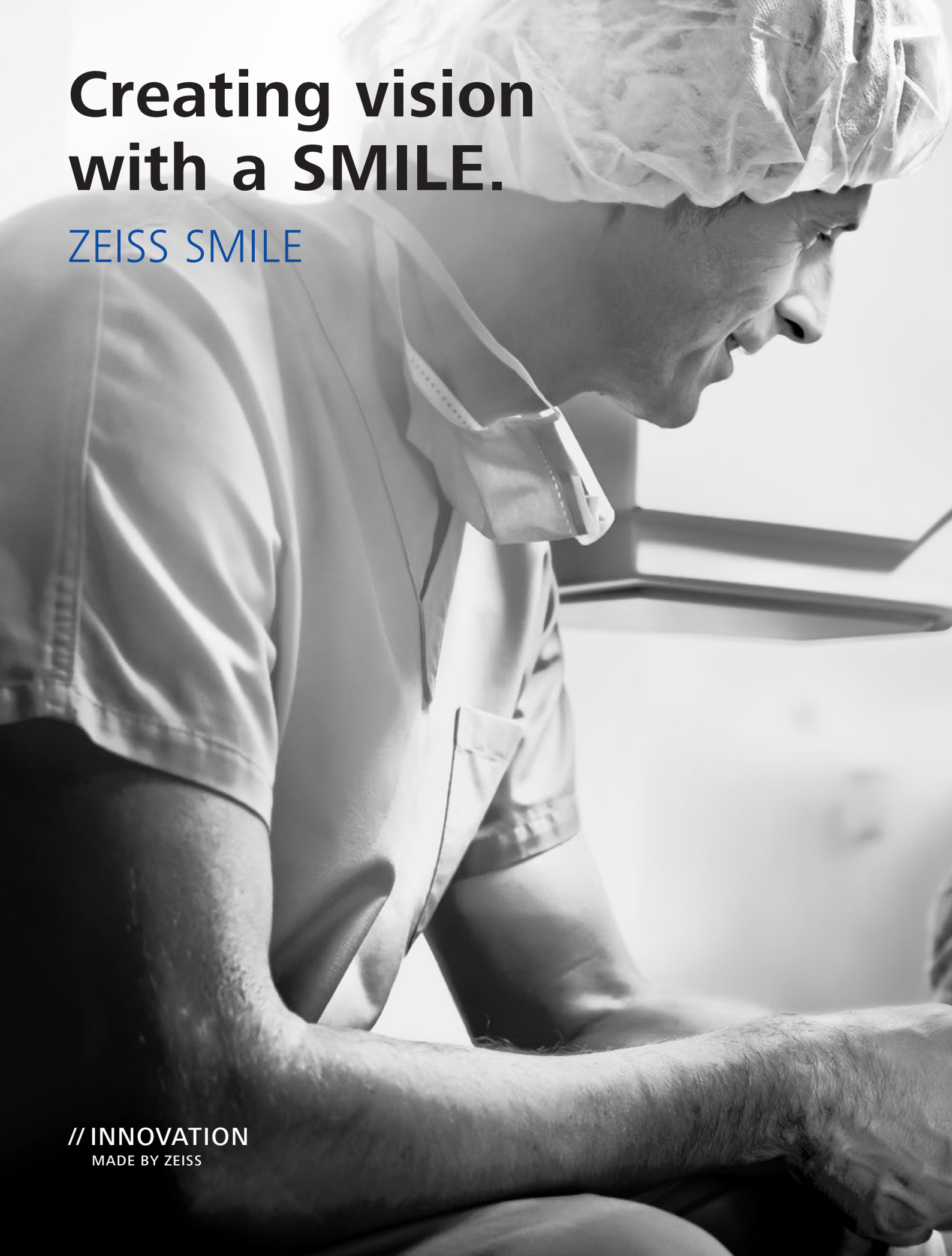
SMILE from ZEISS

The first software for minimally invasive
Laser Vision Correction

Creating vision with a SMILE.

ZEISS SMILE



// INNOVATION
MADE BY ZEISS

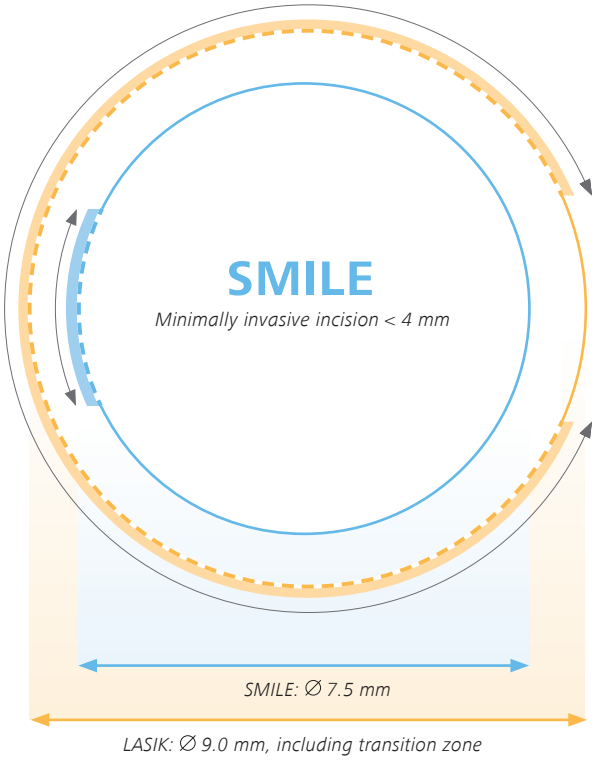
ZEISS SMILE

Minimally invasive Laser Vision Correction

SMILE® is a game-changing software for laser vision correction beyond PRK and LASIK and is redefining refractive surgery as we know it. Until now, ZEISS is the only company to commercially offer a way for treating patients with this unique and minimally invasive procedure – with SMILE from ZEISS. SMILE is exclusively performed with the femtosecond laser system VisuMax® from ZEISS.

LASIK

Flap side-cut of approx. 20 mm



Up to 80 % smaller side-cut

From flap to minimally invasive surgery: LASIK requires a side-cut of roughly 20 mm. With ZEISS 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 ⅓ smaller compared to Femto-LASIK.

Indication range

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

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

Flapless
With SMILE you can perform Small Incision Lenticule Extraction. This procedure requires no flap and 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 transient dry eye is likely to be correlated.

All-femto
Precision, predictability and perfection are the hallmarks of SMILE. Performed entirely with femtosecond technology, no 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 SMILE, the refractive correction is performed on one laser, with one treatment plan and only one laser process. That's what makes the treatment with SMILE a single-step solution. Moreover, the lenticule inside the intact cornea and the access incision are created in a single treatment step.

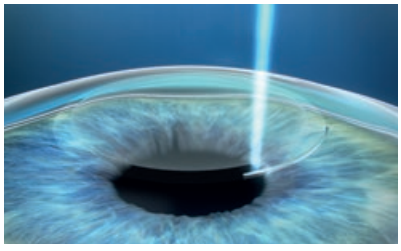
Minimally invasive surgery

Refractive correction with ZEISS SMILE

LASIK involves cutting a flap and folding it back to remove corneal tissue point by point. ZEISS SMILE®, on the other hand, makes minimally invasive 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.

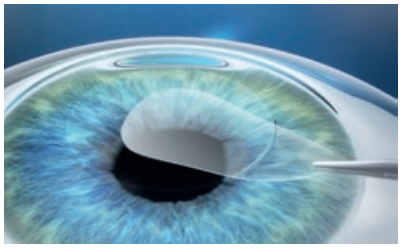
Smal Incision Lenticule Extraction

Three treatment steps



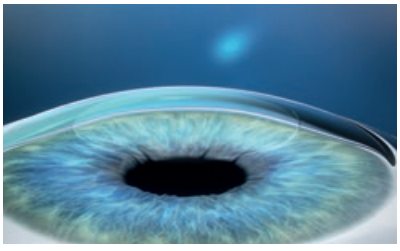
Lenticule creation

A small piece of corneal tissue (lenticule) and a small incision are created inside the intact cornea.



Lenticule removal

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



Impairement is corrected

Removing the lenticule changes the shape of the cornea, thereby achieving a vision correction.

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

Sri Ganesh, MD

Nethradhama, Bangalore, India, ESCRS 2015 Istanbul

"Whether for high or low corrections, SMILE is the procedure of choice for me. Good, better, SMILE."

Bertram Meyer, MD

Augencentrum Köln, Cologne, Germany, ERLS 2015 Florence

ZEISS VisuMax

Defining new trends in modern corneal surgery

ZEISS SMILE runs on the ZEISS VisuMax. 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 for 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 result are avoided, as is unnecessarily high IOP for the patient.

Maximum cutting precision
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 different applications of laser vision correction
When the ZEISS VisuMax is combined with a MEL® 90 excimer laser, it becomes a platform for refractive clinics to offer its patients individualized treatments and also operate more successfully in competitive environments.

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SMILE
VisuMax
MEL 90

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