

The Laser Technology Behind SMILE at Modern Vision Centers



SMILE's results depend heavily on the precision of the laser system used to perform it, since the entire procedure hinges on creating an exact, lens-shaped piece of tissue deep within the cornea without disturbing anything around it. Understanding what that technology actually does helps explain why SMILE requires such a specific and carefully calibrated laser platform, one that's meaningfully different from the equipment used in older laser vision correction procedures.

What a Femtosecond Laser Actually Does

A femtosecond laser delivers energy in extremely short pulses, measured in quadrillionths of a second, allowing it to create very precise cuts within tissue without generating the heat that could damage surrounding structures. For SMILE, this laser is used to sculpt the lenticule, the lens-shaped piece of corneal tissue that gets removed to reshape the eye, entirely beneath the corneal surface without ever breaking through it.

That level of pulse precision is what makes it possible to work inside the cornea without disturbing the tissue above or below the treatment zone. Older laser technologies simply weren't fast or precise enough to attempt this kind of internal tissue shaping safely, which is part of why SMILE only became possible once femtosecond laser technology matured.

How the Treatment Plan Gets Built

Before any laser work happens, detailed measurements of your cornea's shape, thickness, and curvature are captured and combined with your refractive prescription to build a treatment plan unique to your eyes. This data determines exactly where the lenticule will be created, how deep within the cornea it sits, and its precise shape, all of which are calculated before you ever sit down for the laser portion of the procedure. Two patients with the same glasses prescription can still end up with different treatment plans once their individual corneal measurements are factored in, which is why the diagnostic step carries as much weight as the laser treatment itself in determining a successful outcome.

Why Speed and Precision Both Matter

The laser portion of a SMILE procedure takes only a matter of seconds per eye, but that speed doesn't come at the expense of accuracy. Faster treatment time actually reduces the window during which small, involuntary eye movements could affect the outcome, which is part of why laser speed and precision tend to work together rather than being a tradeoff patients have to weigh against each other.

A longer treatment window simply gives more opportunity for those small movements to occur in the first place. The laser continuously accounts for minor eye position throughout treatment to keep the lenticule shape accurate from start to finish, adjusting in real time rather than relying on the eye staying perfectly still.

How This Technology Differs From Older Laser Platforms

Older laser vision correction platforms generally required a separate step to create a corneal flap before a second laser reshaped the tissue underneath. SMILE's laser accomplishes the tissue-shaping step and the small incision creation using a single integrated system, which reduces the number of separate steps involved in the surgical process. This more streamlined approach is part of what allows the treatment itself to be completed so quickly per eye, condensing what once required multiple distinct laser stages into a single continuous process handled by one integrated system from start to finish.

The Diagnostic Process Behind Every Treatment Plan

Before any SMILE procedure, a comprehensive diagnostic evaluation gathers corneal thickness, shape, and overall eye health data that feeds directly into the treatment plan. This diagnostic step is what actually determines the laser settings used during your procedure, rather than a generic calculation based on your

glasses prescription alone. Multiple measurement passes are often taken to confirm consistency before any of that data is actually used to build your treatment plan. The same measurements also help confirm candidacy in the first place, since corneal thickness and shape are central to whether SMILE is an appropriate option.

Modern Vision Centers' Investment in SMILE Technology

Modern Vision Centers performs SMILE using a dedicated femtosecond laser platform built specifically for this procedure, supported by detailed diagnostic imaging for every patient. Dr. Drew Dickson works directly with this technology on every SMILE case performed at the Des Moines practice, applying the same precision standards to each treatment plan regardless of prescription complexity or how straightforward a given case might initially appear on paper.

If the technology behind your vision correction matters to you, Modern Vision Centers' Des Moines office can explain exactly what equipment and diagnostic process will be used for your SMILE procedure, in plain terms rather than technical jargon that's hard to follow or difficult to connect back to your own specific treatment plan and prescription. Schedule an evaluation to see how your treatment plan would be built.

Company Description

Modern Vision Centers offers a range of advanced laser and lens vision correction procedures tailored to your unique needs and lifestyle.

Contact Details

Modern Vision Centers

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Google Site: <https://sites.google.com/view/mvcvision/smile-eye-surgery-des-moines>

Google Folder: <https://drive.google.com/drive/folders/1TbMESDKKUTDJGXSiRocCJ8oG0HJkgCV3?usp=sharing>

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