

LASIK HISTORY 101

- **1950s – Introduction of the Microkeratome & Cryolathe:** Keratomileusis (Predecessor to LASIK): Vision correction surgery originated in Latin American during the 1950s with the development of the microkeratome and cryolathe devices by professor José I. Barraquer. Modeled after a carpenter's plane, the microkeratome was used to create a corneal cap, which was then placed on a cryolathe for reshaping to correct visual disorders. The procedure failed to gain acceptance due to unpredictable results and a high incidence of complications.
- **Early 1990s – The Excimer Laser and PRK:** Expanded medical use of the excimer laser provided refractive surgeons with more predictive technology for surgical vision correction. However, use of the excimer laser for PRK (photorefractive keratotomy) was not widely embraced by consumers due to considerable patient discomfort and a delay in visual recovery.
- **Mid 1990s – Microkeratome + Excimer Laser = LASIK (Laser Assisted In-Situ Keratomileusis):** European surgeons were the first to develop an effective technique for combining two technologies, utilizing the microkeratome to create a flap of corneal tissue, which was then folded back to allow for treatment by the excimer laser. This technique, termed LASIK, provided patient comfort and immediate visual results, the two factors credited with the growth and popularity of the LASIK procedure today.
- **2001 (Nov.) – First IntraLase® FS (femtosecond) Laser Placed in Service:** The first advancement to make LASIK an all-laser procedure. The blade-free IntraLase® laser is prized for improving the safety and predictability of LASIK by replacing the hand-held microkeratome blade with a computer-guided laser for corneal flap creation.
- **2002 – FDA Approves Custom LASIK with Wavefront:** Using waves of light to map higher- and lower-aberrations in the eye, wavefront technology allows surgeons to diagnose a patient's refractive error with precision, going beyond the capabilities of the letter eye chart to identify vision errors which affect image quality. Capitalizing on the availability of wavefront technology, excimer laser manufacturers begin incorporating the readings into their laser systems. With wavefront diagnosis, surgeons can now offer Custom LASIK, individualizing vision correction for their patients.
- **2004 – IntraLase Laser Removes LASIK Fear Factor:** The first laser to replace the hand-held blade historically used in LASIK gives thousands the confidence to finally undergo this vision correction procedure. Many say they waited years for LASIK technologies to improve and, specifically, for the blade to go away. Market data show consumer demand for the IntraLase technology contributed to an increase in LASIK volume, which rose 18 percent in 2004, representing a rebound to the market's 2000 peak.
- **2005 – Research Shows IntraLase Laser Provides Better Vision:** New data show the IntraLase laser does more than create a safer, planar corneal flap; it prepares an optimal corneal surface below the flap, providing for superior visual outcomes better than 20/20, especially among Custom/Wavefront patients.

Definitions

- **Blade-Free/All-Laser LASIK** – LASIK with the advanced IntraLase Method™. Only procedures that use the IntraLase laser in the first step can be considered 100 percent “all-laser” or “blade-free”.
- **Custom LASIK** – LASIK with custom diagnosis and ablation; initiated with either IntraLase laser or a microkeratome.



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- **Standard LASIK** – LASIK initiated with either IntraLase laser or a mechanical microkeratome.
- **Traditional LASIK** – LASIK initiated with a mechanical microkeratome.
- **Wavefront** – a map of the eye's surface indicating the minute high and low spots, which affect crispness and clarity of vision.

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