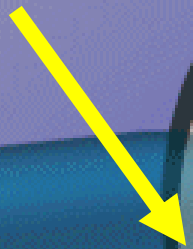

Evolution of Refractive Surgery 2003

Daniel S. Durrie, MD
Overland Park, Kansas
USA



Surgical Options

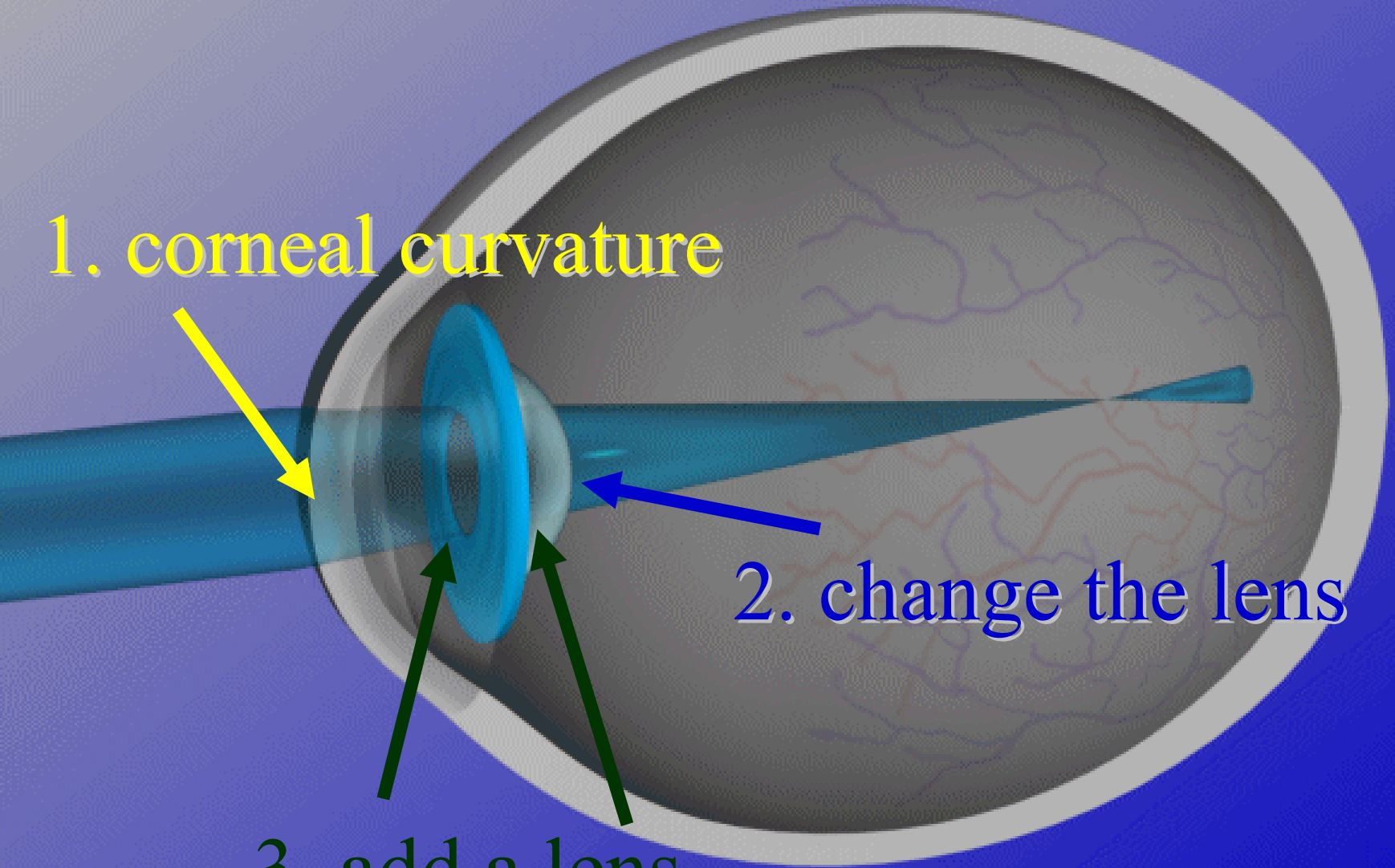
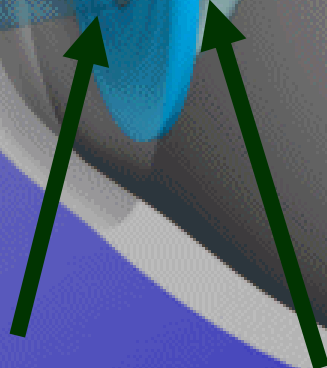
1. corneal curvature



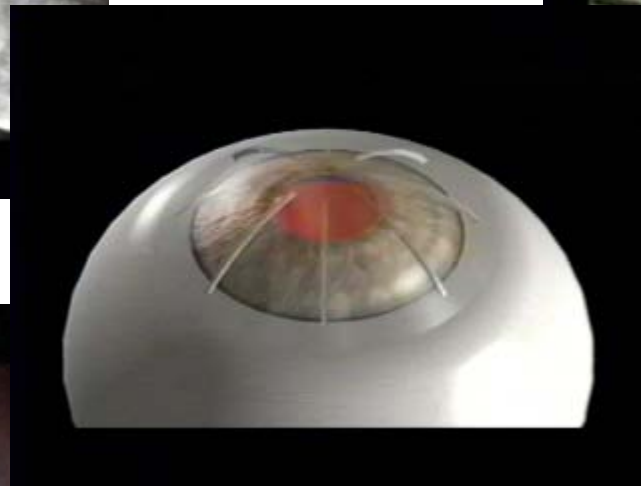
2. change the lens



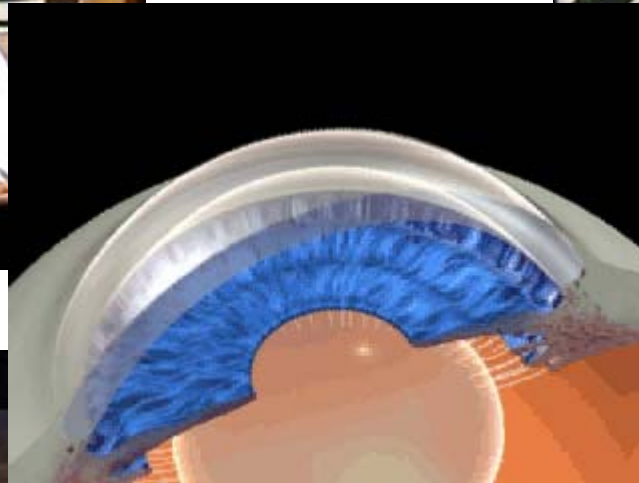
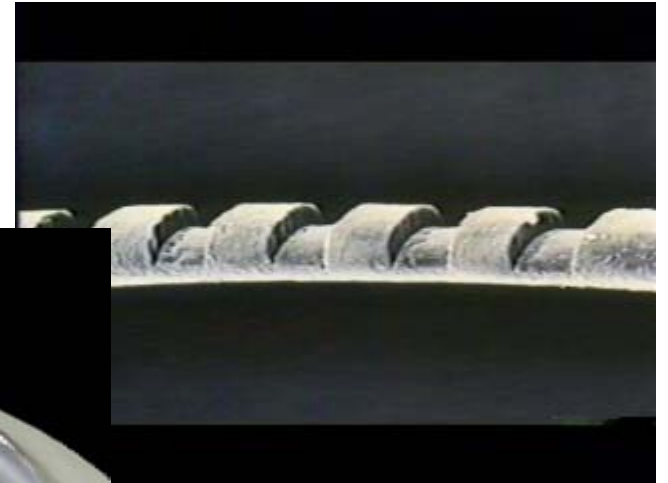
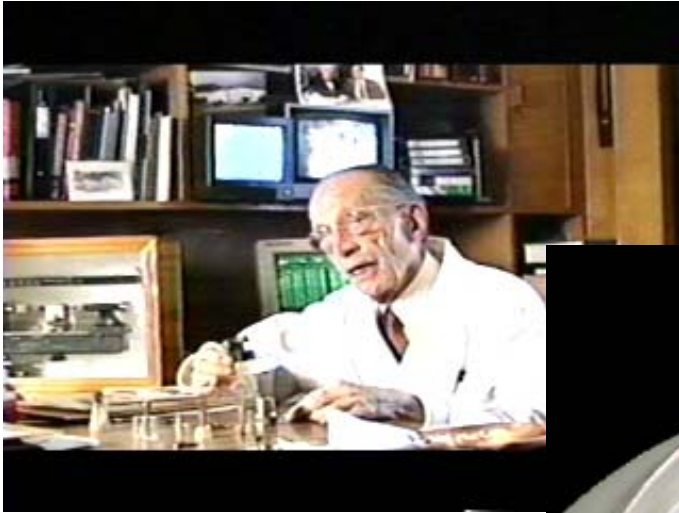
3. add a lens



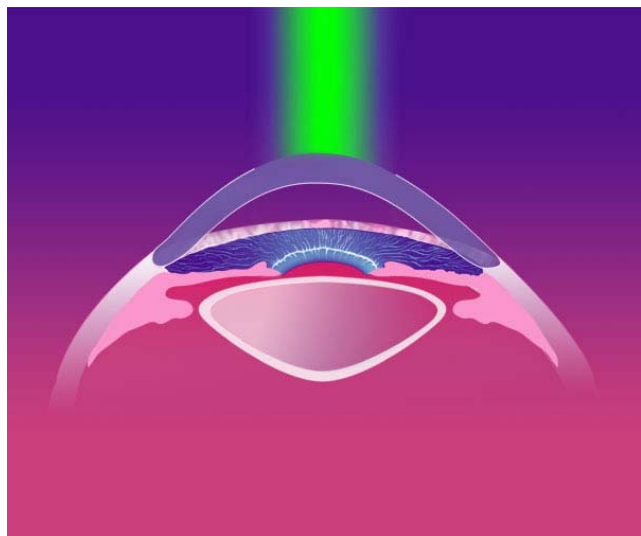
Evolution of Refractive Surgery



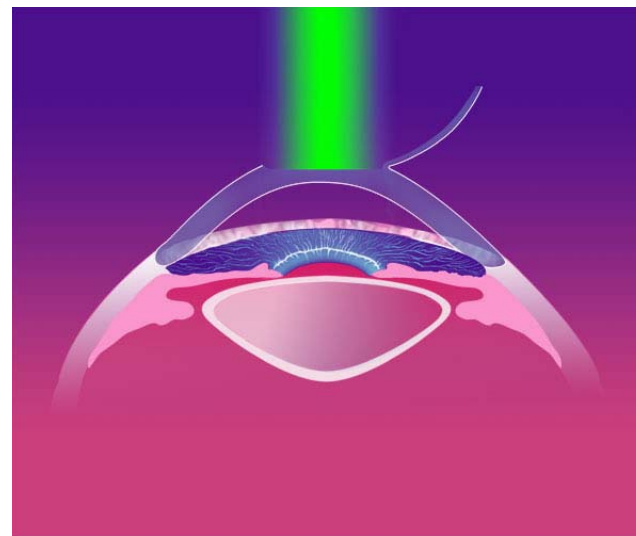
Evolution of Refractive Surgery



Evolution of Refractive Surgery



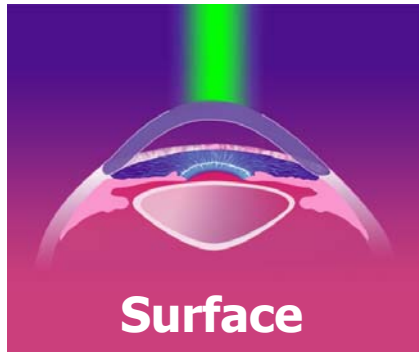
Surface Ablation



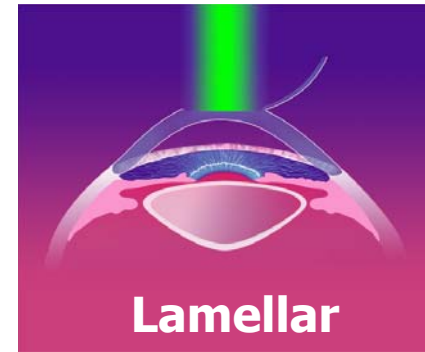
Lamellar Ablation

Evolution of Refractive Surgery:

- Technique **1989**



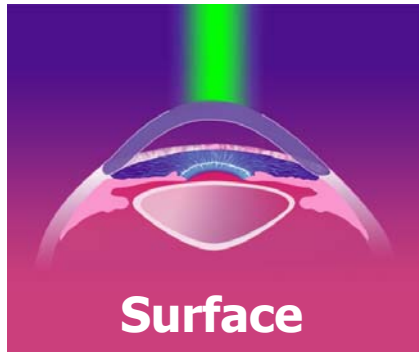
- **PRK**
- Broad beam laser
- Mechanical debridment
- 4.5 to 5.0 mm OZ
- No transition zones
- Unilateral surgery



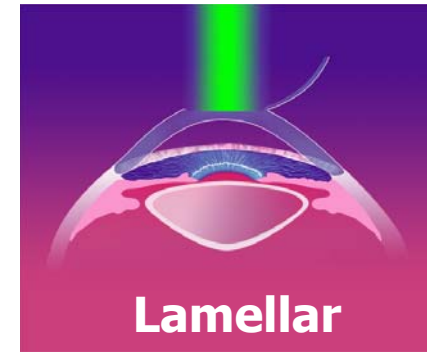
- **Excimer Laser Keratomileusis**
- Free cap – 240 microns
- Underside of the flap ablated
- Sutured in place

Evolution of Refractive Surgery:

- Technique **1990**



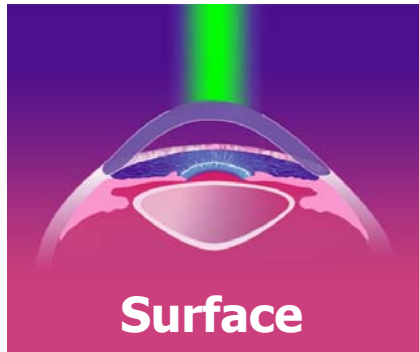
- **PRK**
- Broad beam laser
- Mechanical debridment
- 4.5 to 5.0 mm OZ
- No transition zones
- Unilateral surgery



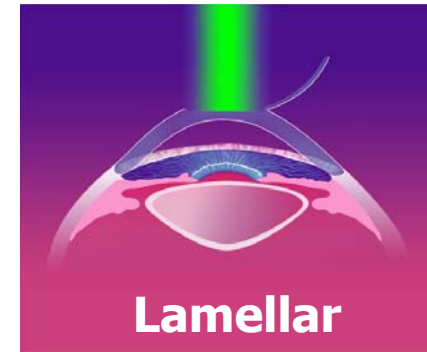
- **Excimer Laser Keratomileusis**
- Free cap – 240 microns
- Underside of the flap ablated
- Sutured in place

Evolution of Refractive Surgery:

- Technique **1991**



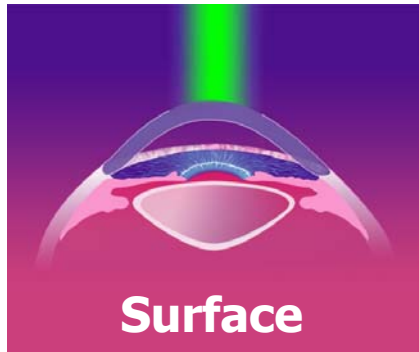
- **PRK**
- Broad beam laser
- Mechanical debridment
- 5.0 mm OZ
- No transition zones
- Unilateral surgery



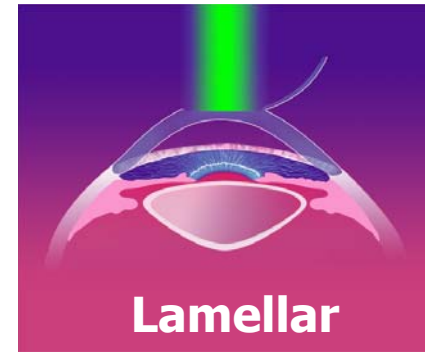
- **LASIK**
- Hinged flap
- Stromal ablation
- No sutures needed
- Nasal hinge
- Barraquer Keratome

Evolution of Refractive Surgery:

- Technique **1992**



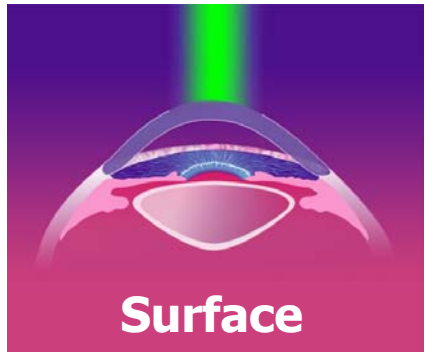
- **PRK**
- Broad beam, scanning slit and spot lasers
- Mechanical debridement
- Up to 7.0 mm OZ
- Unilateral surgery



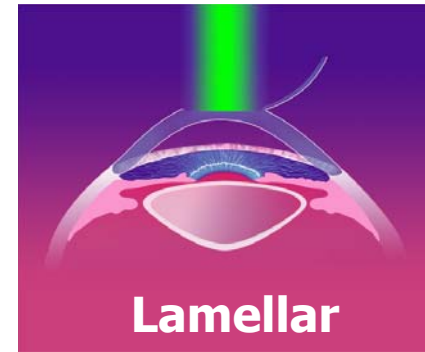
- **LASIK**
- Hinged flap
- Stromal ablation
- No sutures needed
- Nasal hinge
- ACS Keratome

Evolution of Refractive Surgery:

- Technique **1993**



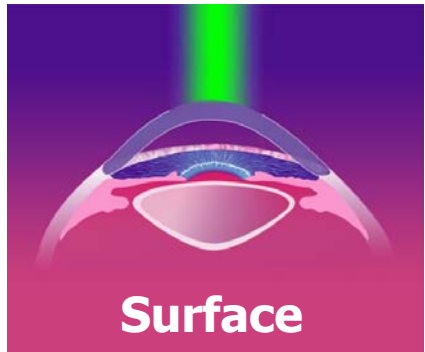
- **PRK**
- Broad beam, scanning slit and spot lasers
- Mechanical debridement
- Up to 7.0 mm OZ
- Multizone/multipass



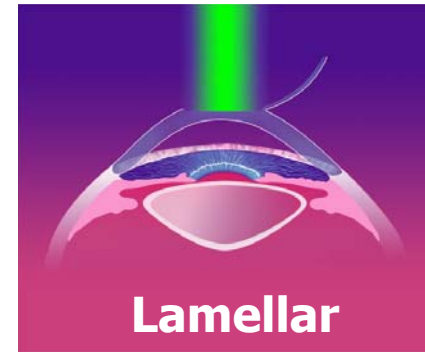
- **LASIK**
- Hinged flap
- Nasal hinge
- ACS Keratome

Evolution of Refractive Surgery:

- Technique **1994**



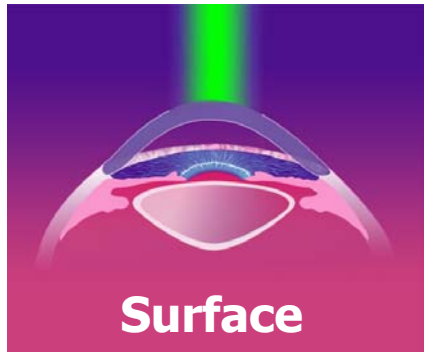
- **PRK**
- Broad beam, scanning slit and spot lasers
- Alcohol debridment
- Up to 7.0 mm OZ
- Bandage contact lenses



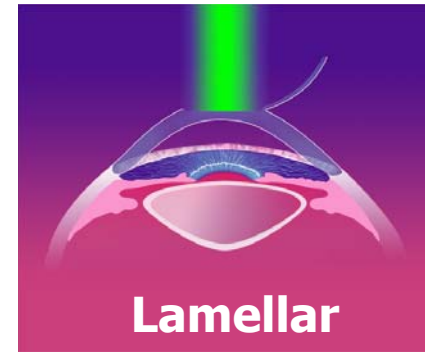
- **LASIK**
- Hinged flap
- Nasal hinge
- ACS Keratome

Evolution of Refractive Surgery:

- Technique **1995**



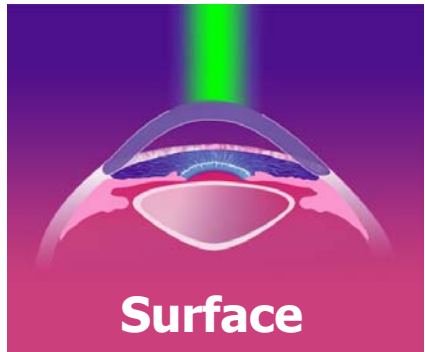
- **PRK – FDA approved**
- Broad beam, scanning slit and spot lasers
- Alcohol debridement
- Up to 7.0 mm OZ
- Bandage contact lenses



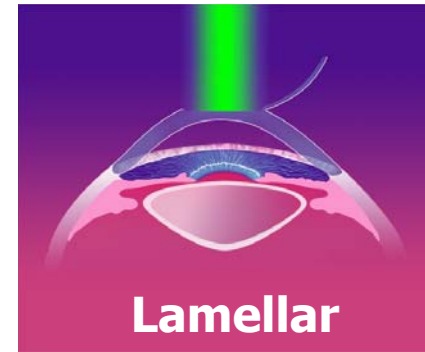
- **LASIK**
- Hinged flap
- Nasal hinge
- ACS Keratome

Evolution of Refractive Surgery:

- Technique **1996**



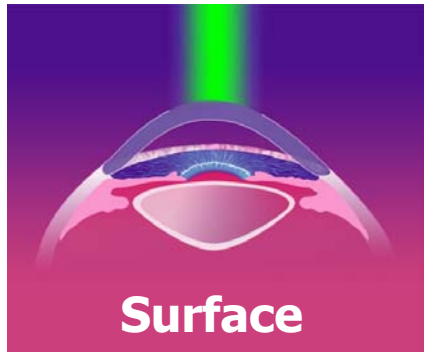
- **PRK – FDA approved**
- Broad beam, scanning slit and spot lasers
- Alcohol debridement
- Up to 7.0 mm OZ
- Bandage contact lenses



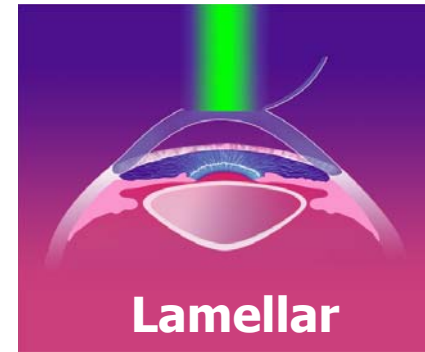
- **LASIK**
- Hinged flap
- Nasal hinge
- ACS Keratome

Evolution of Refractive Surgery:

- Technique **1997**



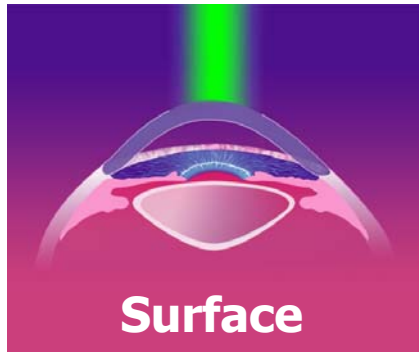
- **PRK – FDA approved**
- Broad beam, scanning slit and spot lasers
- Laser scrape
- Up to 7.0 mm OZ
- Bandage contact lenses



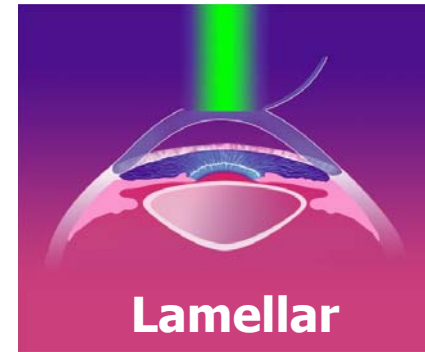
- **LASIK**
- Hinged flap
- Nasal hinge
- ACS Keratome

Evolution of Refractive Surgery:

- Technique **1998**



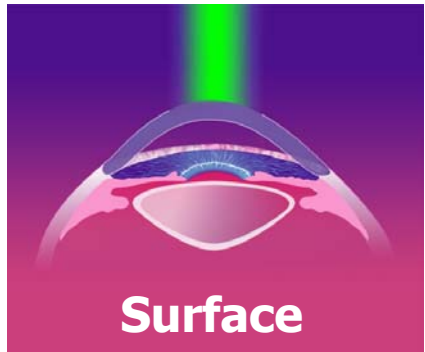
- **PRK – FDA approved**
- Broad beam, scanning slit and spot lasers
- Laser scrape
- Up to 7.0 mm OZ
- Bandage contact lenses



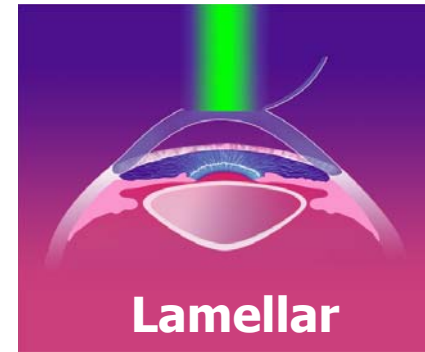
- **LASIK**
- Hinged flap
- Superior hinge
- Hansatome Keratome

Evolution of Refractive Surgery:

- Technique **1999**



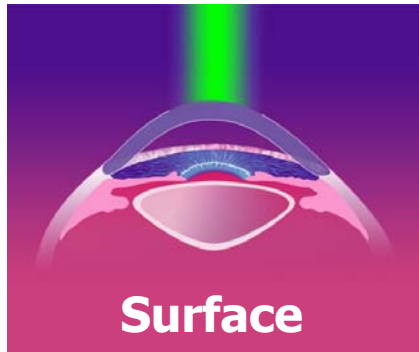
- **PRK – FDA approved**
- Broad beam, scanning slit and spot lasers
- Laser scrape
- Up to 7.0 mm OZ
- Eye trackers



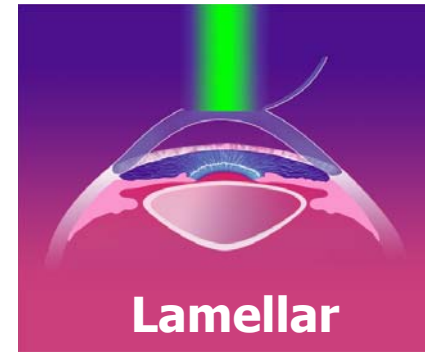
- **LASIK**
- Hinged flap
- Superior hinge
- Hansatome Keratome
- Nomograms

Evolution of Refractive Surgery:

- Technique **2000**



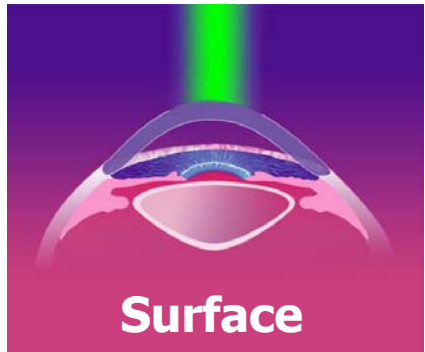
- **LASEK**
- Broad beam, scanning slit and spot lasers
- Epithelial flap
- Up to 7.0 mm OZ
- Eye trackers



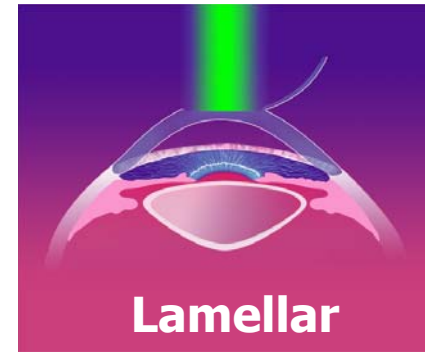
- **LASIK – FDA approved**
- Hinged flap
- Superior hinge
- Hansatome Keratome
- Nomograms

Evolution of Refractive Surgery:

- Technique **2001**



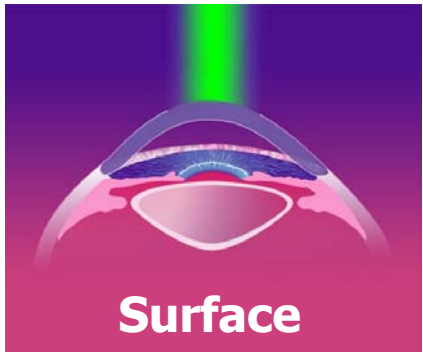
- **LASEK**
- Broad beam, scanning slit and spot lasers
- Epithelial flap
- Up to 7.0 mm OZ
- Eye trackers



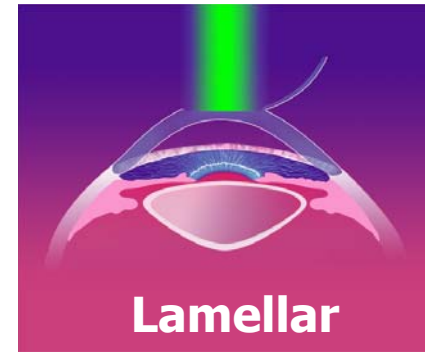
- **LASIK – FDA approved**
- Hinged flap
- Hansatome Keratome
- Nomograms
- Wavefront custom ablation

Evolution of Refractive Surgery:

- Technique **2002**

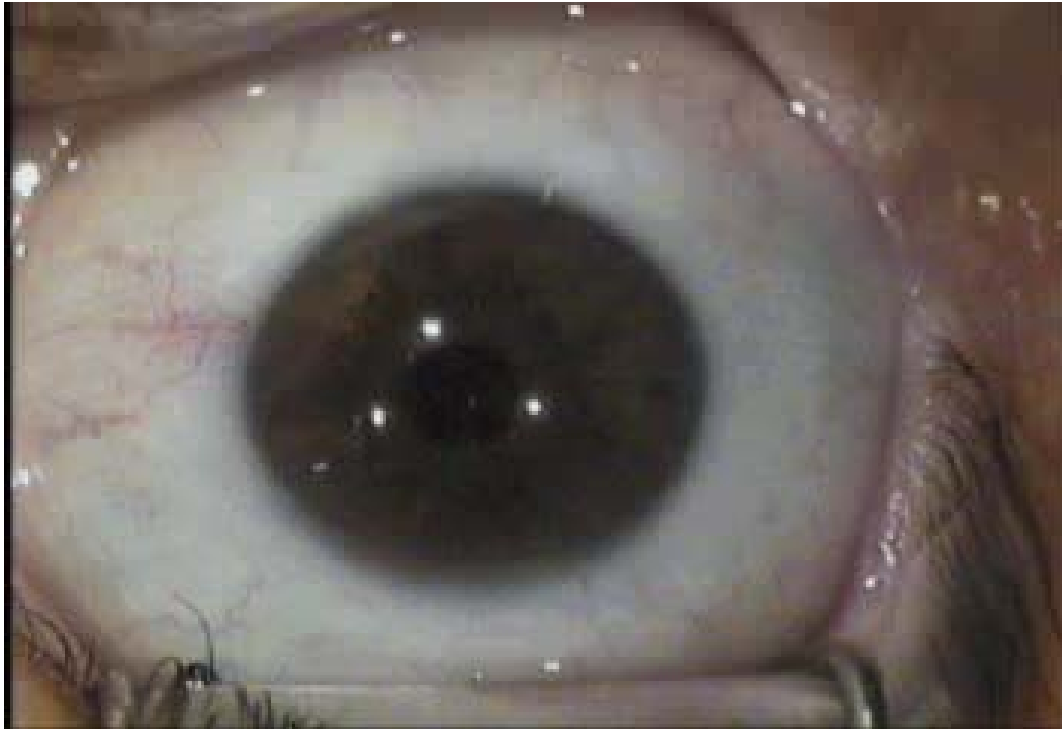


- **Advance Surface Ablation**
- Flying spot lasers
- Alcohol debridment, no flap
- Wavefront custom ablation



- **IntraLasik**
- Precision laser flap
 - Choice of hinge position and flap thickness
 - Centered on visual axis
- Wavefront custom ablation

LASIK Technique 2003



Breakthrough Safety Technology Platform

Software Controlled Laser



- Optimal Precision
- Ease of Use
- Customizable

INTRALASE FS Laser



- Revolutionary Ultra Fast
- Micron Level Precision
- Safety Platform

Patient Interface

- Single Use Disposable
- Sterile
- Simple



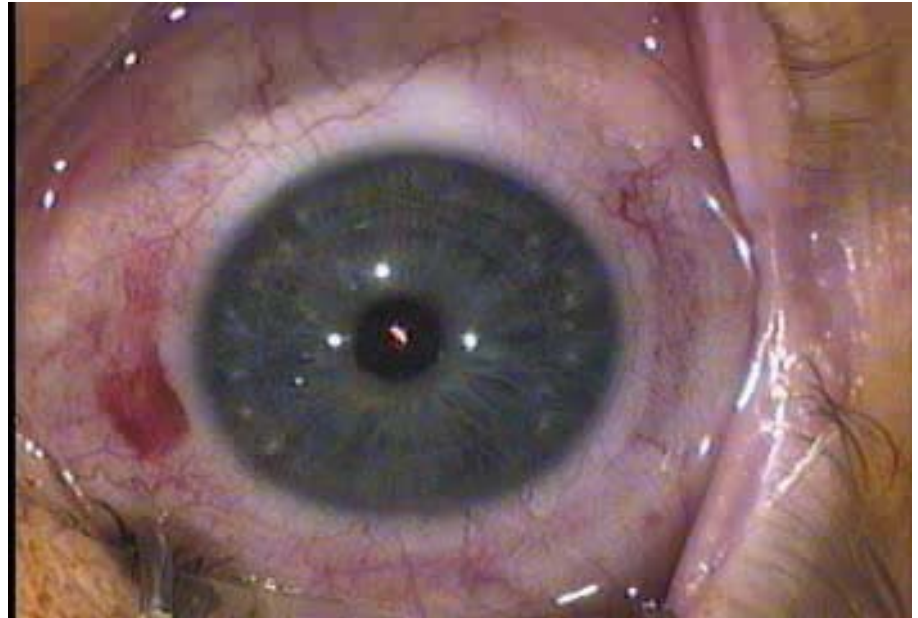
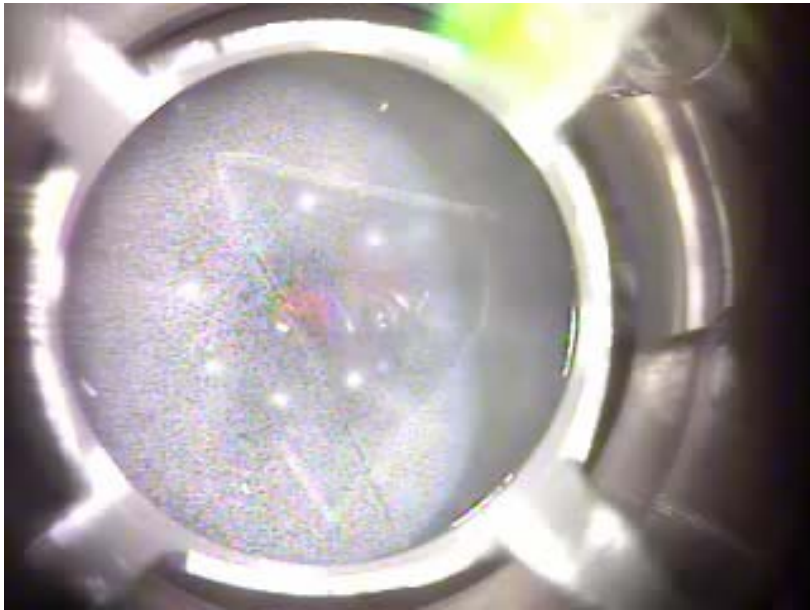
Evolution to IntraLASIK



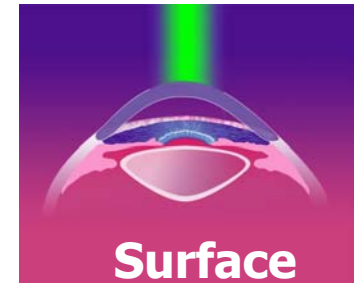
Evolution to IntraLASIK



IntraLASIK Technique 2003



Surface Ablation Technique 2003



Evolution of Refractive Surgery: 2003

- We have worked over the past 10 years to improve safety
 - We have improved our techniques, hardware and software
 - Goals 2003 and beyond:
 - Improve the quality, not just Snellen acuity
 - Choose the technology and procedure that is best for the patient, not your pocketbook
 - Work to help those patients that have had previous refractive surgery upgrade to new technology
-