Evolution of Refractive Surgery 2003

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Surgical Options

1. corneal curvature
2. change the lens
3. add a lens
Evolution of Refractive Surgery
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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: 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
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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 debridment
  - 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 debridment
  - 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 debridment
- 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 debridment
- 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

Lamellar
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