Custom Surgery: Who makes a good candidate and when should we not treat

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Who to Treat?

Everyone eligible*

Low/moderate myopia with astigmatism

VISX: >=5mm undilated pupil
Alcon: >=7mm dilated pupil

* Primary eyes
**Less Induction of HOA**

- **WFG LASIK**
  - n=150

- **Conventional LASIK**
  - n=300

More higher order aberrations after surgery

6mm pupil analysis

Change in Higher Order Aberrations ($\mu$)

- % of Eyes
  - 0% - 40%
  - 0 - 0.7
**Better Quality of Vision**

5% Contrast Acuity
WFG vs Conventional LASIK at 3 mos.

Change in Lines of Vision

*significantly different, t(0.05), p<<0.01*
Less night Halo Complaints (1 mo)

Significantly more complaints after surgery

Conv LASIK (-36%)

Significantly less complaints after surgery

WFG LASIK

Change in Halo Complaints
Who not to Treat

- Low quality WF capture
- Retreatment with large WF disparity
- Unstable refraction
- Dry eye
- Keratoconus
- Inadequate corneal thickness (LASIK)
- Unreasonable expectations
Poor Quality H-S Image

Dry Eye

Keratoconus
Manifest Refraction

- Ensure the WF capture is accurate
- Stability assessment
Should the WF defocus and cylinder always match manifest?

Manifest refraction
-2.0 -1.0D X 180

-2.00D
-3.00D
-3.00D
-2.00D
-2.50D
-3.00D
-2.00D
Keratoconus
Pre-Surgical Screening

Vertical Coma

Trefoil

Spherical Aberration

Secondary Astigmatism

Keratoconus

Preop Canceled

Normal

Zernike Terms

3,-3 3,-1 3,+1 3,+3 4,-4 4,-2 4,0 4,+2 4,+4

6mm pupil
Pachymetry

8 Wk

16 Wk

32 Wk

468µ

391µ

365µ
Conclusion

WFG surgery is my preferred tx

Less induced HOA
Better QoV

Who not to treat

Poor quality WF capture
Contraindications for LASIK