Dr. Jeffery J. Machat  
Crystal Clear Vision  
Toronto, Canada

**Refining Patient Selection and Management Using the AcuTarget HD™ Instrument**

- Shifting Demographics
  - LASIK Market Reduced
  - Visual Needs Different
  - Presbyopia management central today

**AcuTarget HD™ Instrument: Visual Function Analyzer**

- I want patients to understand their clinical issues and the basis for my recommendations
- We perform at Crystal Clear Vision in Toronto:
  - LASIK/PRK
  - Corneal Inlays
  - RLE
  - ICL
  - Cataract Surgery
- It is no longer LASIK as solution for everyone, it is you have a vision problem and we will find a surgical solution.

**AcuTarget HD™ Instrument**

- Pre- & Post-op Testing
- Inlay Placement Guidance
- Intraocular Scatter
- Tear Film
- Depth-of-Focus
- Pre- & Post-op Centration

Source: MarketScope 2010
**AcuTarget HD™ Practical Applications**

1. Consultations: Enhance Patient Conversions, Education, Value Proposition
2. Corneal Based Procedures: LVC, KAMRA®
3. Dysfunctional Lens Syndrome (DLS)
4. Dry eye – all procedures
5. Surgical Planning for KAMRA Inlay

**What is Ocular Scatter?**

- **Ocular Scatter**: Localized deviations of light due to a combination of diffraction, reflection and refraction.
  - **Forward scattering**: ocular scatter as light travels from the front of the eye towards the retina, *potentially reducing retinal contrast*.
  - **Reverse or back scatter**: scattering of light reflected from the retina. This has importance in evaluation of ocular structures but *has little impact on retinal image contrast*.

**AcuTarget HD™ Instrument Measures**

- **FORWARD Scatter**: Measures the amount of light scatter in the forward direction.

**Optical Quality Measurement**

- **Objective Scatter Index (OSI Index)**
  - Quantifies forward light scatter
- **Predicted Visual Acuity (Decimal, Snellen)**
  - Simulates the influence of the patient’s personal scatter score on their quality of vision
Laser Vision Correction

- Age 18 - 40
- No presbyopia
- Normal visual quality
- Normal OSI
- Normal MTF
- Extremely Good Predicted VA – 20/11 (OSI 0.4/green)

- Recommend laser corneal refractive surgery

OSI and Cataract Grading

- Objective assessment with the AcuTarget HD™ instrument can identify early lens changes
- OSI scores are highly correlated to the LOCS III*
- Helps surgeons talk to patients about their natural lens changes


Procedure Planning

AcuTarget HD™ Instrument: Tear Film Assessment

- Identifies good and poor patients for refractive surgery
- Provides objective and quantifiable tear film impact on quality of vision

- Poor Tear Quality
  - A rapid rise in OSI after each blink shows fast tear break up time (TBUT) and impact on visual quality.
  - OSI: 0.7
  - Predicted VA: 1.4/20/14

- Good Tear Quality
  - A constant OSI shows adequate tear quality
  - OSI: 3.5
  - Predicted VA: 0.4/20/00

Clear Lens

Dysfunctional Lens (Cataract)
**Depth-of-Focus**

- Measures a patient’s current range of vision
- Compares pre-op range of vision to post-op range of vision
- Provides simple illustrations to help patient’s understand their vision and manage expectations as well as demonstrate benefits

**Pre Treatment Eye**

- 0.75D of depth of focus

**1 Week Post Treatment Eye**

- 3.50D of depth of focus

---

**Quantifying Visual Quality**

- The AcuTarget HD™ instrument provides objective measurement of your patient’s quality of vision
- This information can be used to:
  1. **Improve patient selection (corneal vs lens-based procedure)**
  2. **Identify cataract formation before it is visible at the slit lamp**
  3. **Aid in diagnosis of factors reducing visual quality pre-op and post-op**
  4. **Demonstrate objective data to a patient with poor expectations pre-op and/or postoperatively**

---

**Surgical Planning for the KAMRA® Inlay**

- AcuTarget HD™ instrument is the only instrument validated by AcuFocus for use with the KAMRA® inlay
- Pre-operative assessment identifies unique ocular landmarks to guide inlay placement
- Objective assessment of centration:
  - Confirms and quantifies decentration, if present
  - Assists with recentration planning (i.e. distance and direction)

---

**Thank you**

Jeffery J. Machat, MD
Crystal Clear Vision
Toronto, Canada