



**Control/Tracking Number:** 08-A-1487-ARVO

**Activity:** Abstract

**Current Date/Time:** 12/7/2007 7:38:54 AM

### **New non-contact biometer**

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**Abstract: Purpose:** To evaluate and compare axial length (AL), anterior chamber depth (ACD), lens thickness (LT), and central corneal thickness (CCT) measurements assessed by optical biometry (OB), ultrasound biometry (UB), optical low coherence reflectometry pachymetry (OLCR-P), and by a new prototype applying optical low coherence reflectometry biometry (OLCR-B).

**Methods:** OLCR-B (Haag-Streit), OLCR-P (Haag-Streit), OB (Zeiss), and UB (Tomey) were performed in 35 eyes of 20 patients with incipient cataract. Paired t-test was performed.

**Results:** The mean AL was for OLCR-B 24.35 mm  $\pm$  2.32 (SD), OB 24.33 mm  $\pm$  2.41, and UB 24.03 mm  $\pm$  2.27; the mean ACD for OLCR-B 3.10 mm  $\pm$  0.51, OB 3.15 mm  $\pm$  0.52, and UB 3.09 mm  $\pm$  0.47; the mean LT for OLCR-B 4.71 mm  $\pm$  0.42, and UB 4.73 mm  $\pm$  0.49; the mean CCT for OLCR-B 543  $\mu$ m  $\pm$  44, OLCR-P 536  $\mu$ m  $\pm$  32, and UB 541  $\mu$ m  $\pm$  41. No statistical significant differences were found between the groups, except in the mean AL comparing OLCR-B vs. UB; and mean AL comparing OB vs. UB ( $p < 0.05$ ).

**Conclusions:** OLCR-B, OLCR-P, OB and UB give comparable results in patients with incipient cataract. There are differences in the eye length measurements comparing OLCR-B and OB with UB. The advantages of the OLCR-B prototype are the non contact method, the exact measurement of AL, ACD, LT and CCT on the same interferometry method and hence the short duration of the measurements.

**Author Disclosure Information:** K. Rohrer, Haag-Streit, Switzerland, F; B.E. Frueh, Haag-Streit, Switzerland, F; I. Clemetson, Haag-Streit, Switzerland, F; R. Waelti, Haag-Streit, Switzerland, E; D. Goldblum, Haag-Streit, Switzerland, F.

**Reviewing Codes (Complete):** 136 cataract surgery - LE

**Presentation Preference (Complete):** &nbsp;Poster #1, Paper #2

**Keyword (Complete):** 445 cataract ; 465 clinical (human) or epidemiologic studies: systems/equipment/techniques

**Clinical Trial and Newsworthy (Complete):**

\*Clinical Trial: Yes

: www.clinicaltrials.gov NCT00494390

\*Newsworthy: Yes


Clinicians : True

**Support (Complete):**

**\*Support : Grant Stiftung Haag-Streit**

**Status: Complete**

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