**INTRODUCTION**

Cone location has been previously described in a small number of keratoconus subjects. It is described to have inferior steepening with upwards of 11% of eyes having steepening at locations other than inferior. Figures 1 and 2 show central steepening and inferior steepening via corneal topography, respectively. No prior reports have identified or described the location of steepening in a large cohort of keratoconus subjects.

**METHODS**

Eight hundred and thirty-eight non-grafted, right eyes of CLEK Study subjects had two corneal topography images collected during year 5 of the study using Keratron Corneal Topographer Analyzers at 15 clinics (Optikon 2000, Rome, Italy). The two images were edited to remove artifacts and graded for data quality (0-4 scale, 4 being best). Merged maps with quality scores grade 2 or better were analyzed reducing the sample size to 769. Using a new program, the Cone Location and Magnitude Index (CLMI) can identify the distance from center (or the videokeratographic axis) and the meridian along which this area is located.

**RESULTS**

Cone apexes were grouped in 1 mm annuli extending from center. Cone apexes located further than 1.9 mm from center were more common in males (191/428, 44%) than females (107/341, 31%) (p<0.0002).

The mean meridian of apex location was inferior temporal at 262 degrees. A majority of eyes (648, 86.5%) had cone locations inferior to the horizontal midline, and most commonly between the 240 and 270 degree meridians (right eyes only). Meridian location was similar for males and females.

**ACKNOWLEDGEMENTS**

Supported by the National Eye Institute/National Institutes of Health, grants EY0419, EY10069, EY10077, EY12656, and EY02587 and NEI Core Grant EY 1792 (UIC). This study was additionally supported by an unrestricted grant from Research to Prevent Blindness, New York, NY (UIC).

**REFERENCES**