Test-Retest Reproducibility of Optic Disk Deterioration

(Presenter name goes here)
(Presenter Institutional Affiliation goes here)

The Ocular Hypertension Treatment Study Group (OHTS)
National Eye Institute, National Center for Minority Health and Health Disparities, NIH grants EY09307, EY09341, EY02687, Unrestricted Grant from Research to Prevent Blindness, Merck Research Laboratories and Pfizer, Inc.
PURPOSE

- To determine the reproducibility of optic disc progression by the Optic Disc Reading Center (ODRC)
METHODS

- Quality control photographs were inserted into the ODRC reading stream
- Read in a masked fashion annually for 5 years
- Graded for glaucomatous progression by side-by-side comparison with baseline photograph
METHODS

Gold Standard Negatives
50 photos of eyes showing no change from baseline

Gold Standard Positives
36 photos of eyes showing progression due to POAG and their 36 confirmation photos

122 photos are graded independently of each other and separately by two primary readers
# RESULTS

## SPECIFICITY

N=50 normal eyes

Percent of eyes correctly called **NO** progression

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>98%</td>
</tr>
<tr>
<td>2001</td>
<td>98%</td>
</tr>
<tr>
<td>2002</td>
<td>100%</td>
</tr>
<tr>
<td>2003</td>
<td>100%</td>
</tr>
<tr>
<td>2004</td>
<td>100%</td>
</tr>
</tbody>
</table>
## SENSITIVITY

N=36 eyes with POAG disc progression

percent of eyes correctly called PROGRESSION

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual N=36</th>
<th>Confirmation N=36</th>
<th>Both N=36</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>86 %</td>
<td>81%</td>
<td>72%</td>
</tr>
<tr>
<td>2001</td>
<td>72%</td>
<td>81%</td>
<td>64%</td>
</tr>
<tr>
<td>2002</td>
<td>69%</td>
<td>89%</td>
<td>67%</td>
</tr>
<tr>
<td>2003</td>
<td>81%</td>
<td>89%</td>
<td>69%</td>
</tr>
<tr>
<td>2004</td>
<td>94%</td>
<td>83%</td>
<td>81%</td>
</tr>
</tbody>
</table>
RESULTS

KAPPA: Coefficient of agreement which adjusts for the proportion of agreement due to chance

>0.75 = Excellent Agreement
0.40 - 0.75= Fair to Good Agreement

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual &amp; Confirmation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0.73</td>
</tr>
<tr>
<td>2001</td>
<td>0.65</td>
</tr>
<tr>
<td>2002</td>
<td>0.70</td>
</tr>
<tr>
<td>2003</td>
<td>0.73</td>
</tr>
<tr>
<td>2004</td>
<td>0.83</td>
</tr>
</tbody>
</table>
CONCLUSION

- The determination of optic disc progression by the ODRC has been reproducible over time.
OHTS Clinical Centers

- Bascom Palmer Eye Institute
- Baylor Eye Clinic
- Charles R. Drew University
- Devers Eye Institute
- Emory University Eye Center
- Eye Associates of Washington, DC
- Eye Consultants of Atlanta
- Eye Doctors of Washington
- Eye Physicians and Surgeons of Atlanta
- Glaucoma Care Center
- Great Lakes Ophthalmology
- Henry Ford Hospitals
- Johns Hopkins University
- Jules Stein Eye Institute, UCLA
- Kellogg Eye Center
- Kresge Eye Institute
- Krieger Eye Institute
- Maryland Center for Eye Care
- Mayo Clinic/Foundation
- New York Eye & Ear Infirmary
- Ohio State University
- Salus University
- Scheie Eye Institute
- University of California, Davis
- University of California, San Diego
- University of California, San Francisco
- University of Louisville
- University Suburban Health Center
- Washington Eye Physicians & Surgeons
- Washington University, St. Louis
OHTS Resource Centers

Study Chairman’s Office & Coordinating Center
Washington University
St. Louis, MO

Optic Disc Reading Center
Bascom Palmer Eye Institute
University of Miami
Miami, FL

Visual Field Reading Center
University of California, Davis
Sacramento, CA