

Glaucoma is a disease that is manifested by loss of ganglion cells and axons across the central posterior pole. Glaucomatous damage is often marked by retinal thinning in the zone surrounding the fovea and extending toward the optic nerve head. The SPECTRALIS® Posterior Pole Asymmetry Analysis maps retinal thickness across the posterior pole and graphs asymmetry both between hemispheres and between eyes. Some layers may change to offset damage to other layers; therefore, focusing only on a specific layer may be deceiving. RNFL measurements combined with retinal thickness measurements contribute to a robust picture of glaucoma.

"Asymmetry is a hallmark of glaucoma. Posterior pole asymmetry analysis can help identify early structural damage."

Dr. Sanjay Asrani, Associate Professor of Ophthalmology, Director of Education Duke University Eye Center

Case 1:

Retinal thickness map of a glaucomatous eye (Figure 1a) and the fellow eye (Figure 1b). Note the severe localized thinning in the inferior-temporal region of the right eye. Asymmetry between eyes and hemispheres may reflect damage.

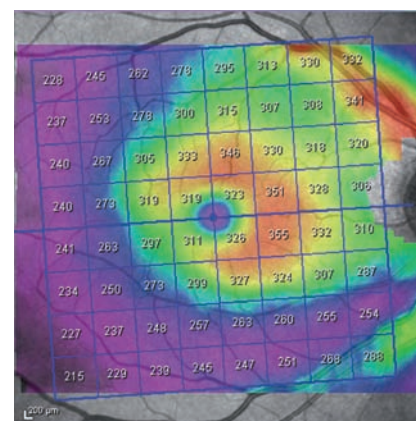


Figure 1a: Right Eye

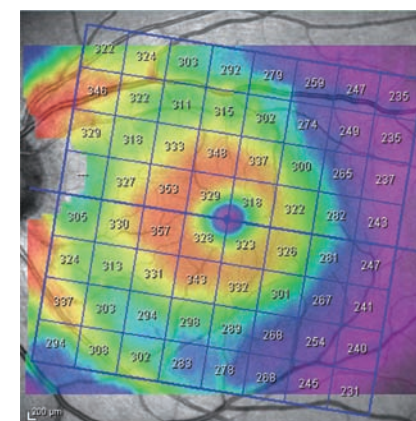


Figure 1b: Left Eye

Case 2:

The retinal thickness map of the right eye (Figure 2a) shows significant thinning in the inferior-temporal and superior-temporal areas. The left-right comparison can quickly highlight asymmetry. (Figure 2b).

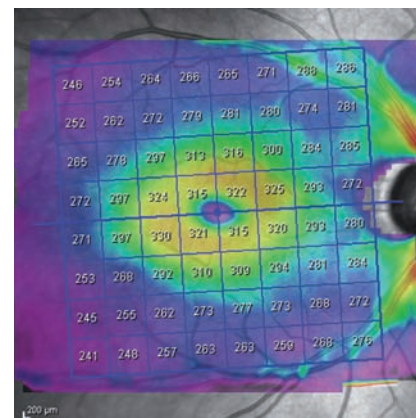


Figure 2a: Right Eye

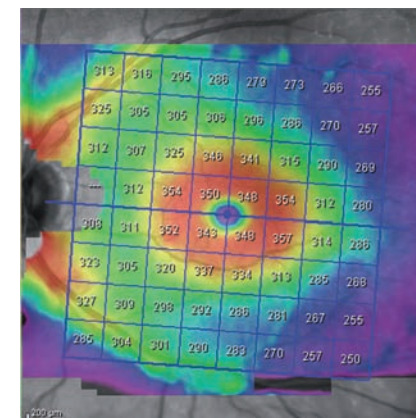


Figure 2b: Left Eye

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How to Interpret the OU Asymmetry Analysis

Posterior Pole Retinal Thickness Map – Displays the retinal thickness over the entire posterior pole (30° x 25° OCT volume scan) for each eye.

8x8 Analysis Grid – An 8x8 grid is positioned along the fovea to disc axis. Mean retinal thickness is given for each cell.

Asymmetry Maps – Asymmetry Maps compare relative macular thickness between corresponding grid cells OD/OS (OU Asymmetry) and within the same eye across the fovea to disc axis (Hemisphere Asymmetry). Mean thickness of corresponding cells is compared and displayed in grayscale.

OD-OS and OS-OD Asymmetry – Compares thickness of cells between eyes by highlighting in grayscale cells that are thinner than corresponding cells in the opposing eye.

Hemisphere (S-I and I-S) Asymmetry – Compares thickness of cells between hemispheres of the same eye by highlighting in grayscale cells that are thinner than the corresponding cell in the opposing hemisphere.

Mean Thickness – Provides mean retinal thickness for the entire grid area and for each hemisphere.

Gray Scale – Gray shades indicate thickness less than the corresponding cell. White indicates thickness the same or greater than the corresponding cell.

Compressed Color Scale – Can highlight early retinal loss that may be too small to be detected with standard color scales.

