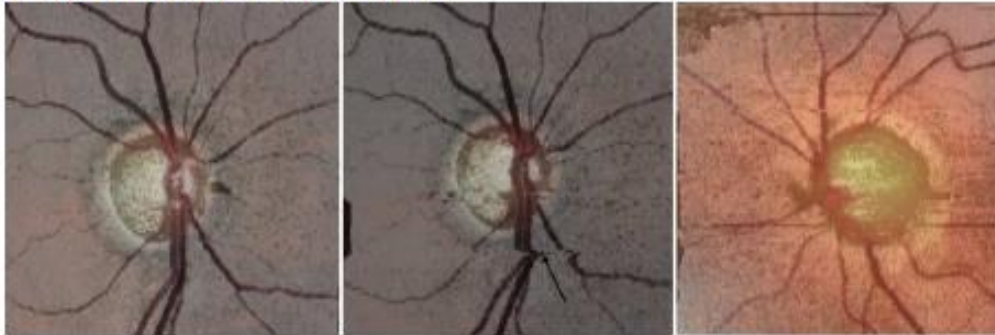


Glaucoma Detection with OCT

1. Scan Quality

Accurate assessment of the optic disc with OCT is dependent upon a high quality scan. If scan quality is too poor or if the patient moved or blinked during the scan then the results will not be reliable. Overall scan quality can be assessed with the 'Image Quality' value. Careful examination of the shadowgram will reveal local image quality and show any fixation errors or blinks.



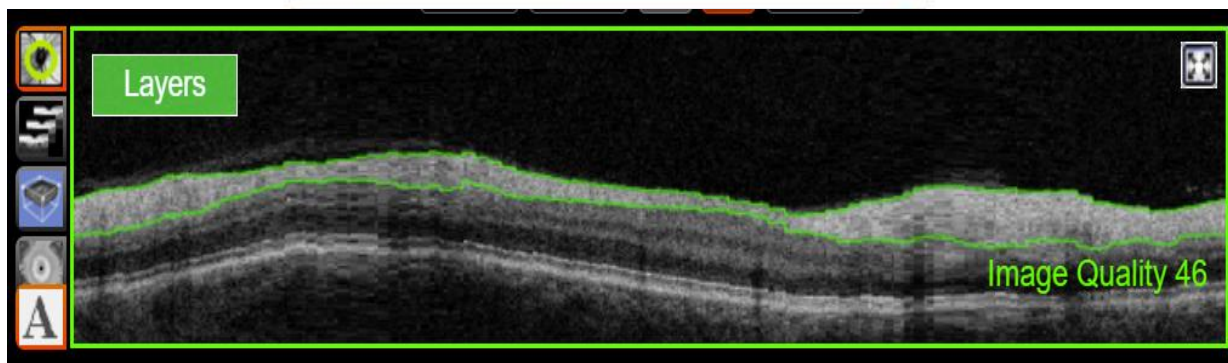
Good image quality, no fixation errors or blinks

Good image quality, fixation error inferiorly

Poor image quality with several partial blinks

2. Identification of the RNFL

Ensuring that accurate segmentation of the RNFL has occurred is essential in determining if analysis is reliable. To do this select 'Layers'. This will highlight the RNFL boundaries. Play through the B-Scan movie, checking that the RNFL boundaries are accurate. They are likely to be inaccurate when scan quality is poor and either side of a blink. During this time, cupping can also be assessed.



3. Disc Margins

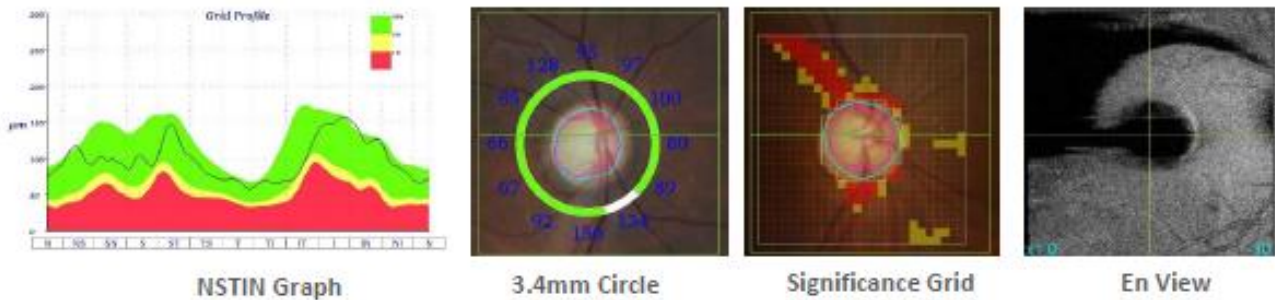
Check that the disc margins have been plotted correctly. To do this select 'Disc Topo'. The blue line denotes the anatomical disc boundary (i.e. the opening in Bruch's membrane and the RPE) and should line up with the dark disc when viewed on top of the shadowgram. If margins are incorrect, modify using the 'Disc Modify' function.

Overlay	DA (mm ²)	2.25
Grid	CA (mm ²)	0.35
Disc Topo	RA (mm ²)	1.91
Disc Modify	CDR	0.15
	LCDR	0.39
	VCDR	0.39
	CV (mm ³)	0.05
	RV (mm ³)	0.40
	HDD (mm)	1.65
	VDD (mm)	1.60
	@RPH (μm)	120

Glaucoma Detection With OCT

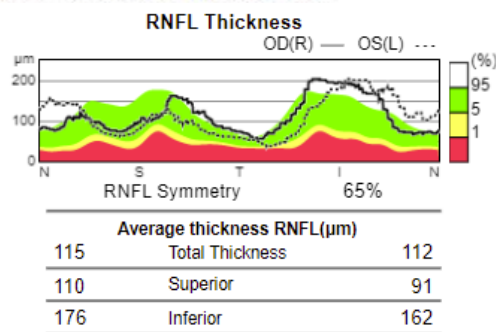
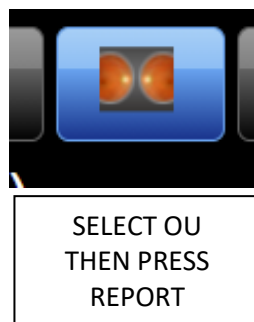
4. Assess RNFL Thickness

Use the NSTIN, 3.4mm normative circle and significance grid to assess RNFL thickness. Comparison to the normative database is colour-coded, with white representing the top 5% of population, green the middle 90% of the population and yellow and red the bottom 5% and 1% of the population, respectively. True glaucomatous RNFL loss should follow the pattern of RNFL striations on the significance grid. Remember to consider if the patient is likely to be well represented by the normative database; for example, highly myopic patients are likely to appear generally thinner (i.e. yellow or red) without there being glaucomatous damage. Use the En View function to look for localised RNFL defects.



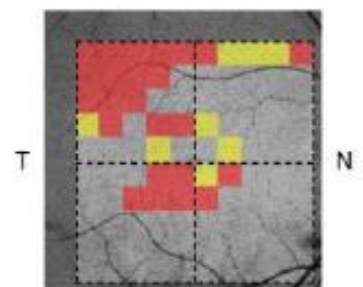
5. Determine Interocular Differences

Once the right and left eyes have been assessed separately, compare the eyes to determine if there are any interocular differences. The easiest way to do this is to go into 'Report' then select 'OU Report'. Here symmetry of the RNFL thickness along with disc and cup size can be easily assessed.



6. Assess RNFL and Ganglion Cell Thickness at the Macula

Use the Macular (V) scan (OCT 2000 and Maestro) or the standard Macular Cube scan to assess RNFL and ganglion cell thickness at the macular region. This scan has similar diagnostic ability as the 3D Disc for detecting defects in most patients, however it exceeds the 3D Disc scan when the disc is unusual, e.g. in high myopes, tilted discs or very large or small discs. For these scans look for asymmetry across the horizontal midline.



7. Don't Forget About Corneal Thickness and ACA

When assessing a patient for glaucoma, remember to measure the corneal thickness with the Radial Anterior Scan and consider the increased risk associated with thinner corneas, and the effect corneal thickness has on IOP. In patients who you suspect have narrow anterior chamber angles (ACA), use the Line Anterior Scan to image the ACA structures and determine if the trabecular meshwork is open or closed.

