

SITA SWAP™ Software

A valuable new tool for the Humphrey® Field Analyzer

Upgrade your HFA

For improved workflow, better clinical information and more satisfied patients, upgrade your HFA with SITA SWAP. Or, get SITA SWAP with the purchase of a new instrument.

SITA SWAP software is available for HFA II and HFA II-i models 745/745i and 750/750i.

For models 740 and 740i, hardware upgrades are available which will allow usage of SITA SWAP.

References

1. Bengtsson B., „A new rapid threshold algorithm for short-wavelength automated perimetry.“ *Invest Ophthalmol Vis Sci.* 2003 Mar;44(3):1388-94.
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3. Johnson CA. „Diagnostic value of shortwavelength automated perimetry.“ *Curr Opin Ophthalmol.* 1996 Apr;7(2):548.
4. Spry PG, Johnson CA, Mansberger SL, Cioffi GA. „Psychophysical investigation of ganglion cell loss in early glaucoma.“ *J Glaucoma.* 2005 Feb;14(1):119.
5. Bengtsson B, Heijl A., „Normal intersubject threshold variability and normal limits of the SITA SWAP and full threshold SWAP perimetric programs.“ *Invest Ophthalmol Vis Sci.* 2003 Nov;44(11):5029-34.
6. Sanchez-Galeana CA, Bowd C, Zangwill LM, Sample PA, Weinreb RN. „Short-wavelength automated perimetry results are correlated with optical coherence tomography retinal nerve fiber layer thickness measurements in glaucomatous eyes.“ *Ophthalmology.* 2004 Oct;111(10):1866-72.
7. Sample PA. „Short-wavelength automated perimetry: it's role in the clinic and for understanding ganglion cell function.“ *Prog Retin Eye Res.* 2000 Jul;19(4):369-83.

Faster testing

The new SITA SWAP™ software and the Humphrey® Field Analyzer (HFA) make blue-yellow threshold testing a clinically practical tool for early detection of glaucoma. SITA SWAP can dramatically improve practice workflow by reducing test time to just 3 to 6 minutes – one third of the time of previous SWAP tests.¹

Earlier glaucoma detection

SWAP has been shown to detect glaucomatous damage three to five years earlier than standard white-on-white perimetry in several prospective, longitudinal studies. These SWAP defects have been found to be predictive of the onset and location of future white-on-white field loss.^{2,3,4}

Greater diagnostic confidence

SITA SWAP exhibits greater dynamic range and shows less inter-subject variability than Full Threshold SWAP testing.⁵ Also, SWAP has been shown to correlate with the early glaucoma damage detected with RNFL imaging.⁶

A proprietary Carl Zeiss Meditec technology, SITA (Swedish Interactive Thresholding Algorithm) is used to streamline the visual field testing process. SWAP (Short Wavelength Automated Perimetry) preferentially tests the blue cones and their ganglion cell connections.

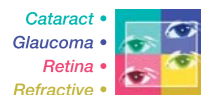


More effective patient management

SITA SWAP is a valuable tool for managing glaucoma suspects. SWAP is a more sensitive test than white-on-white perimetry for detecting early loss of vision due to glaucoma⁷ and for monitoring early changes before white-on-white defects appear.

How SWAP works

SWAP isolates and preferentially tests the blue cones and measures the associated blue-yellow ganglion cell function. The bright yellow background desensitizes the green and red cones, with little effect on blue cone function. SITA SWAP uses the familiar 24-2 pattern presented with a Standard Side V Goldmann Stimulus. With SITA SWAP, all of the HFA's traditional STATPAC features are available, including the Glaucoma Hemifield Test (GHT).



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Case example: Glaucomatous loss discovered earlier with SITA SWAP

Compared to standard white-on-white perimetry

SITA SWAP testing detects glaucomatous visual field loss

An early paracentral visual field defect is seen with SITA SWAP in the superior hemifield of the patient's right eye. The GHT indicates „outside normal limits“. Both the MD and PSD global indices are flagged, with the PSD marked at the $P < 5\%$ limit.

Standard white-on-white perimetry shows the GHT „within normal limits“

No visual field defect is appreciated in the white-on-white test in the patient's right eye. Right eye GHT indicated „within normal limits“. Both the MD and PSD global indices are within the normal range.

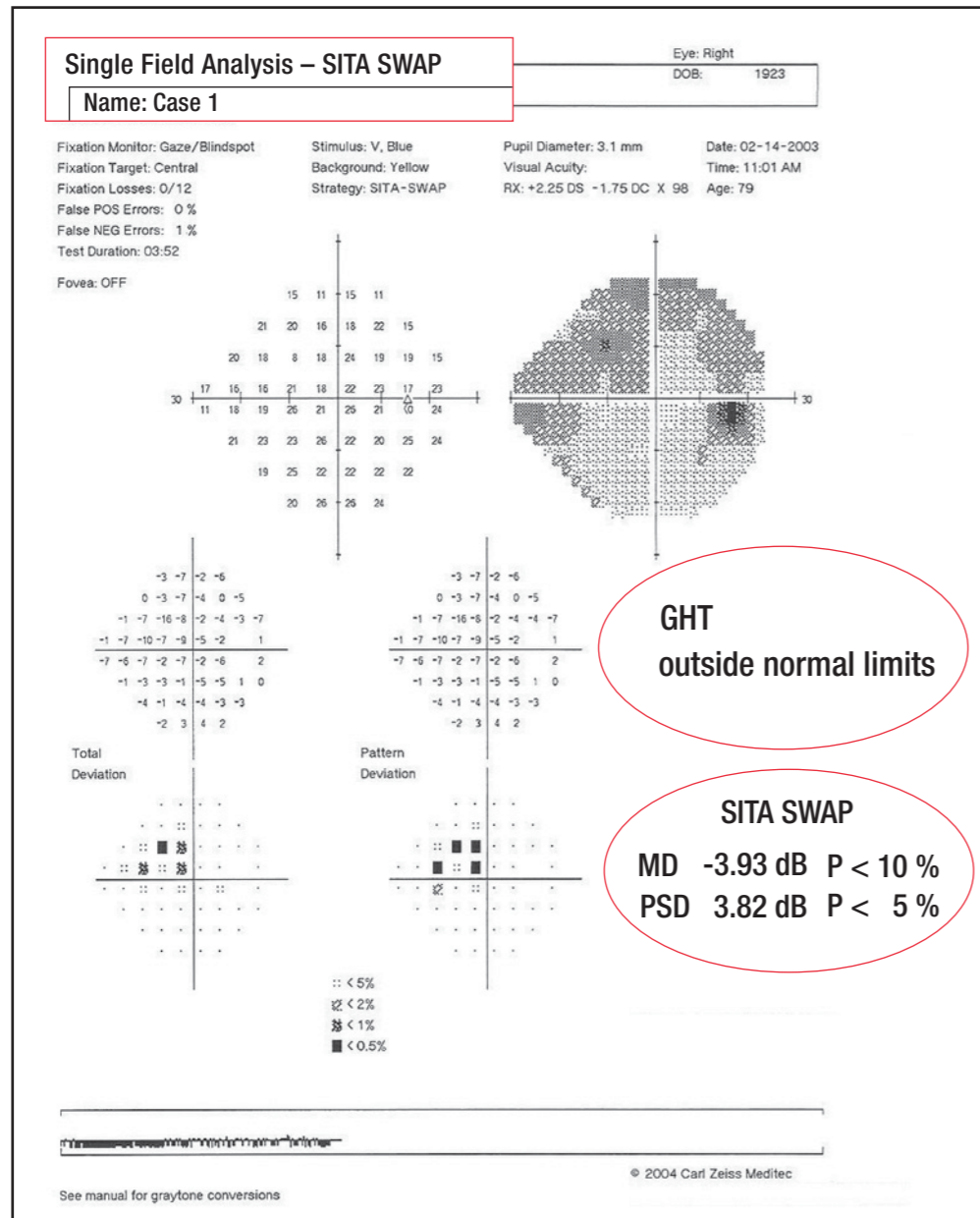


Figure 1 – SITA SWAP detects visual field defect

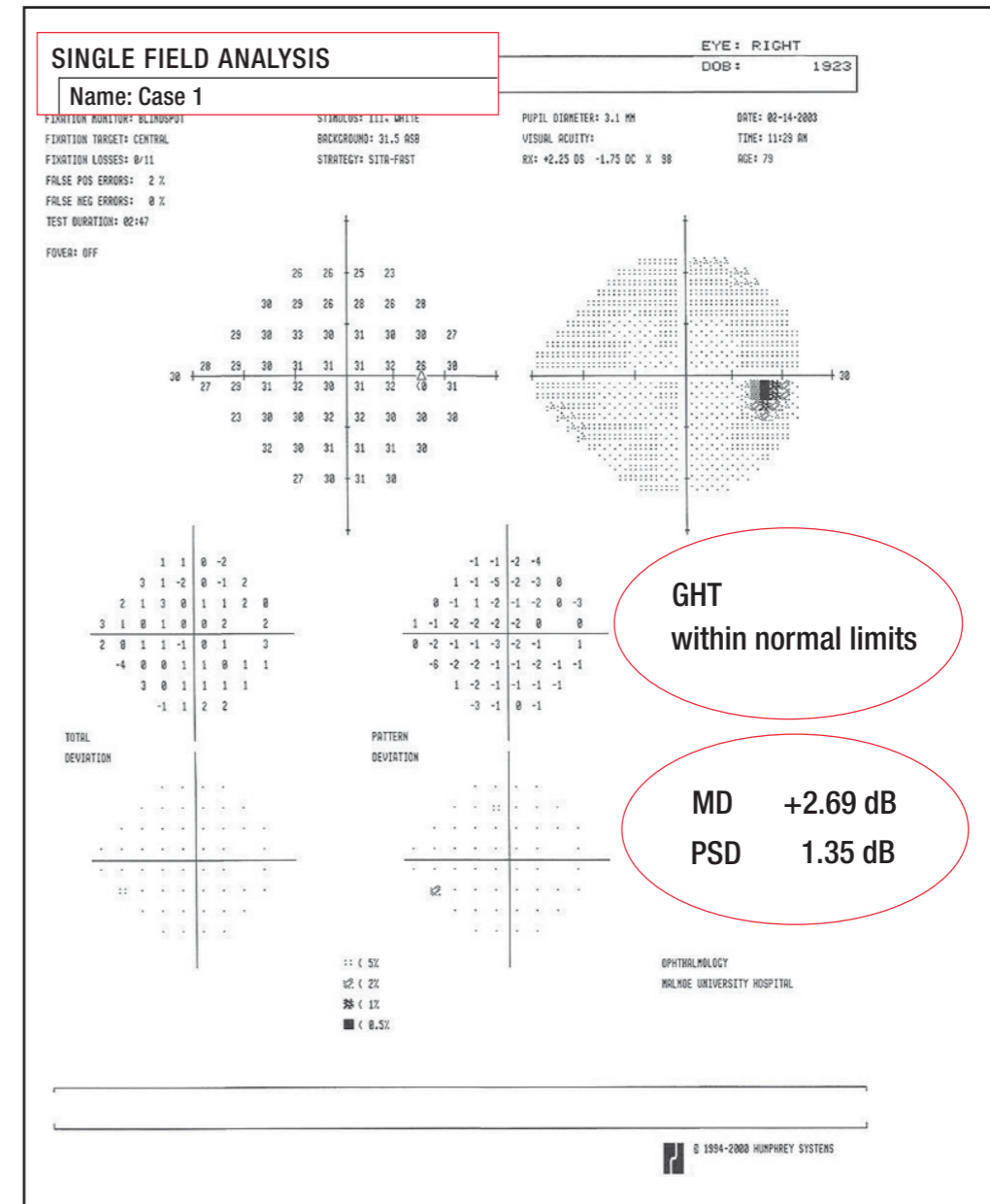


Figure 2 – Standard white-on-white results for the same patient shows no defect

The SITA SWAP printout is similar to the SITA Standard and SITA Fast printouts. The familiar analysis tools – age-corrected normals, probability plots, Glaucoma Hemifield Test, and global indices – are also available with SITA SWAP.

No disease was apparent when using conventional white-on-white testing strategies (Figure 2), whereas SITA SWAP test showed glaucomatous loss (Figure 1).