

Kugler Publications, The Hague, The Netherlands

# Glaucoma Diagnosis

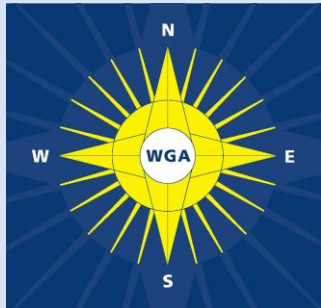
## Structure and Function

Robert N. Weinreb and Erik L. Greve, Editors

Consensus Series - 1

Association of International Glaucoma Societies

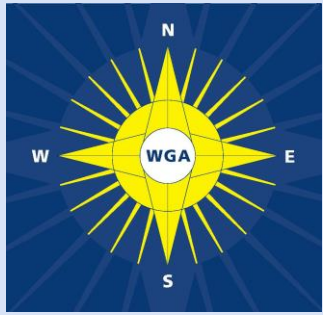
**The Global Glaucoma Network**



**San Diego November 13-14, 2003**



**The Global Glaucoma Network**



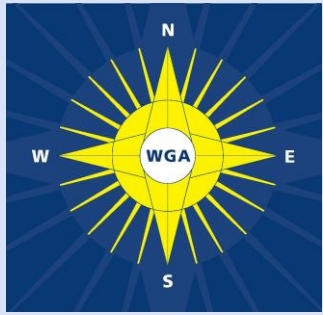
# Diagnostic Testing for Glaucoma

## *Structure*

1. A method for detecting abnormality and also documenting optic nerve structure should be part of routine clinical management of glaucoma.

**Explanation:** It is known that documentation of optic nerve structure is often missing in routine ophthalmology practice.



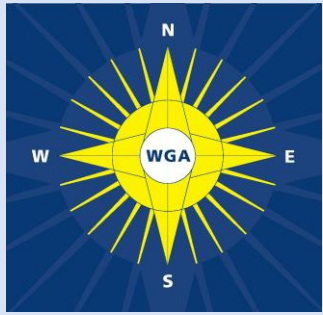


# Diagnostic Testing for Glaucoma

## *Structure*

2. According to limited evidence available sensitivity and specificity of imaging instruments for detection of glaucoma are comparable to that of expert interpretation of stereo color photography and should be considered when such expert advice is not available.

**Explanation:** Experts evaluating stereophotographs are those who have had specialized training and experience in this technique.

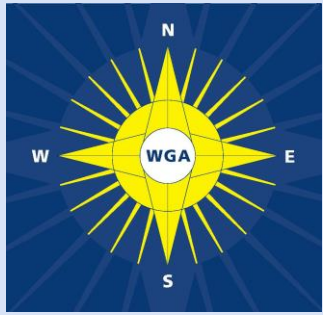


# Diagnostic Testing for Glaucoma

## *Structure*

3. Digital imaging is recommended as a clinical tool to enhance and facilitate the assessment of the optic disc and retinal nerve fibre layer in the management of glaucoma.

Explanation: Digital imaging is available for scanning laser tomography, scanning laser polarimetry and optical coherence tomography. Digital imaging also is possible for photography, but assessment remains largely subjective.

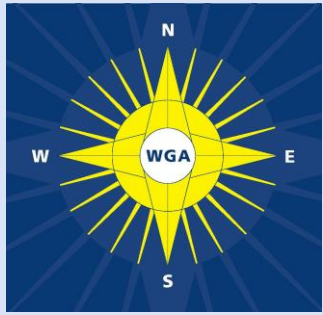


# Diagnostic Testing for Glaucoma

## *Structure*

4a. Automated analysis of results using appropriate databases is helpful for identifying abnormalities consistent with glaucoma.

Explanation: The comparison of results of examination of individual patients with those of an appropriate database can delineate the likelihood of abnormality. Structural assessment should preferably include such a biostatistical analysis.

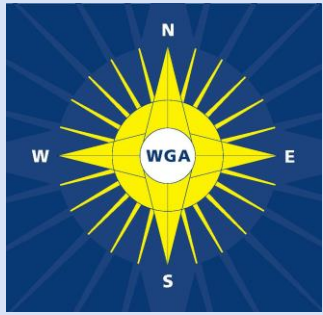


**WGA**

***Structure: 2007 addition***

**4b. Automated analysis of change using appropriate assessment of variability is helpful for identifying change consistent with glaucoma.**

**Explanation: An eye can be changing and still be within normal limits of a normative database.**



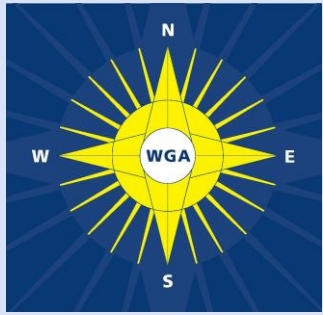
# Diagnostic Testing for Glaucoma

## *Structure*

5. Different imaging technologies may be complementary, and detect different abnormal features in the same patients.

**Note:** At this time, evidence does not preferentially support any one of the above structural tests for diagnosing glaucoma.

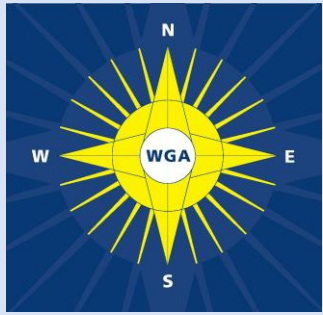




# Diagnostic Testing for Glaucoma

## *Function*

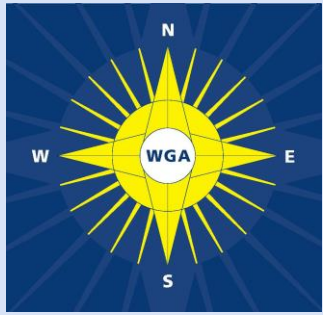
6. A method for detecting abnormality and documenting functional status should be part of routine clinical management of glaucoma.



# Diagnostic Testing for Glaucoma

## *Function*

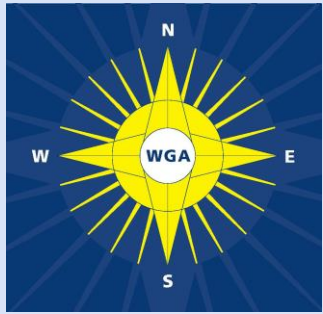
7. It is unlikely that one functional test assesses the whole dynamic range.



# Diagnostic Testing for Glaucoma

## *Function*

8. Standard Automated Perimetry (SAP), as usually employed in clinical practice, is not optimal for early detection.



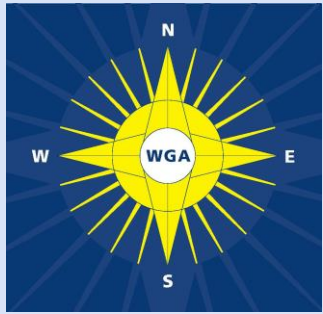
# Diagnostic Testing for Glaucoma

## *Function*

9. With an appropriate normative database, there is emerging evidence that short wavelength automated perimetry (SWAP) and possibly also frequency doubling technology perimetry (FDT) may accurately detect glaucoma earlier than SAP.

Updated comment 2007: SAP-SITA has similar sensitivity to detect visual field abnormalities as SWAP-full threshold.



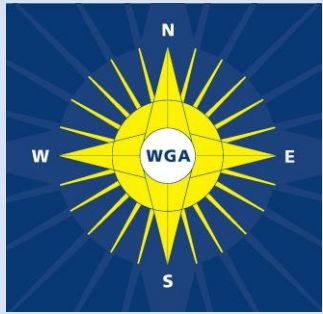


# Diagnostic Testing for Glaucoma

## *Function*

10. There is little evidence to support the use of a particular selective visual function test over another in clinical practice because there are few studies with adequate comparisons.

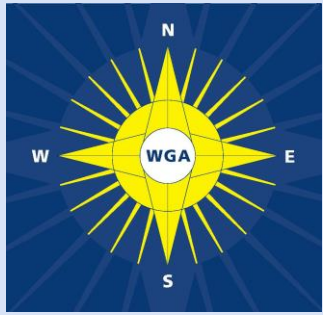
Updated comment 2007: FDT N30 may provide better sensitivity than SAP-SITA or SWAP-full threshold. Evidence concerning the sensitivity of SWAP-SITA and FDT Matrix 24-2 is not yet available.



# Diagnostic Testing for Glaucoma

## *Function & Structure*

11. Published literature often lags behind the introduction of new technology. Therefore literature based on previous versions of current technology should be viewed with caution.



# Diagnostic Testing for Glaucoma

## *Function & Structure*

12. In different cases, either structural examination or functional testing may provide more definitive evidence of glaucoma, so both are needed for detection and confirmation of the subtle early stages of the disease.

Note: Data from both functional and structural examinations always should be evaluated in relation to all other clinical data.