



Humphrey Visual Field Test

Visual field testing is one of many methods used to diagnose and monitor glaucoma progression. Used in concert with other tests such as intraocular pressure measurements, optic nerve examination and other tests, field testing can be an important part of care for the glaucoma patient. In Glaucoma the visual field is often the first affected, though this may not be noticed by the patient initially. Glaucoma advances without symptom in most cases, and usually by the time the central vision is affected glaucoma is far advanced, leaving the patient with the loss of almost all peripheral vision. Eye chart tests test only the central field of vision, and so an alternative method was developed for testing peripheral vision. People under the age of 50, should have their eyes checked every 3 - 5 years. Those 50 years of age or older, or those with risk factors for glaucoma, should have their eyes checked every 1-2 years.

Today, computerized field of vision analyzers, such as the Humphrey Field of Vision Analyzer are used to perform and monitor the entire field of vision. Generally a point of light is presented to the patient while they concentrate on a central target straight ahead. The patient is asked to press a button when they see the light point enter their peripheral vision. The responses are analyzed statistically and compared to normal responses. Vision or Field Defects are printed out and the ophthalmologist can then determine blind spots in the peripheral vision.



If a test result is abnormal, the doctor may retest certain areas of the patient's visual field. The printed results of this test will help the doctor verify the first test was correct. To confirm a blind spot, the computer may recheck an area several times. It is important for the patient to be alert and focused and doing their best.

Although the Humphrey field test is the most likely to be used in the US, there is a different type of perimeter test, the Goldmann Test. This test is rarely used in clinical practice now, except in circumstances where the patient has limited ability to cooperate or extremely poor vision. A goldmann test maps out the outer margins of the visual field.

One of the criteria for meeting the requirement of "legal blindness" is based on the goldmann test of peripheral vision. This criteria, which is equivalent to complete loss of peripheral visual field when there is normal vision within the central 20° of visual field, represents a 'Mean Deviation (MD)' of approximately 22 dB on a Humphrey visual field test. In other words, a Humphrey Field Test result or 'MD' of worse than 22 dB would represent a level consistent with legal blindness.

For Glaucoma patients, monitoring of peripheral vision is perhaps the most common method of monitoring the peripheral vision. Because it can be a challenge to quantify worsening of field defects it is important to establish a baseline result so that visual comparisons of a reliable sequence of field tests taken over several months or years can be made. This is the method for determining changes in the visual field defect pattern, and modifications in treatment.

Limitations

Up to 50% of optic nerve fibers can be lost without any field defects showing up on visual field testing. Some patients find it difficult to maintain their focus on the central target during field testing.

Tips for field testing:

- let the field technician know
- ask for a short break, if necessary
- book the test during the hours when you feel most alert
- discuss difficulties with the doctor

Further Reading:

[Humphrey Field Analyzer](#)
[Medline.com](#)