

Vision and hearing testing

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Vision testing

A. Examination of the visual acuity

The most rewarding single test of ocular function is the evaluation of visual acuity. Reduced acuity will betray the presence of great variety of diseases as well as the need for refractive correction. Determination of visual acuity should be a part of every complete physical examination.

1. Distant acuity is measured with Snellen's chart. The chart is placed 5 m from the patient. Acuity is examined with one eye at a time. Glasses should be worn if the patient customarily uses them for distance. Reading glasses will often blur distant vision.

Acuity is recorded as a fraction

$$\text{Visus /V/= } d / D$$

d – represents the distance to the chart

D – represents the distance at which a normal eye can read the line

Thus 5 /10 means the patient is 5 m away and can read the line that a normal eye should read at 10m.

By 5 / 50 is meant that he can read only the largest letter, ordinarily legible to the normal eye at 50 m. Lesser visual acuity than this may be recorded as hand movement /H.M./ or light perception /L.P./.

Your acuity is....., because:

.....
.....
.....
.....
.....

2. Measurement of near vision is relatively unimportant as a routine procedure except in patients complaining specifically of reading difficulty or in persons over 40 years of age. With increasing age the lens of the eye becomes less flexible, resulting in loss of accommodation for near vision, which interferes with reading. This condition is referred to as presbyopia.

B. Examination of the color vision with Ishihara charts

1. The Ishihara charts are the plates on which are printed figures or numbers. The figures and numbers are made up of colors that are liable to look the same as the background to an individual who is color-blind.

2. Anamaloscope is useful in examination of color vision

3. Disorders of color vision may be diagnosed as color- blindness or as color weakness. Suffix anopia denotes color-blindness and suffix anomalia denotes color-weakness.

C. Examination of the visual field

The visual field of the eye is the portion of the external world visible out of the eye. The visual fields are mapped with an instrument called a perimeter. The process is referred to as perimetry.

D. Ophthalmoscopic examination

Physical examination should include careful study of the details of the posterior eye /fundus/ with an ophthalmoscope. In addition to the detection of ocular disease this procedure will permit the diagnosis of serious systemic disorders.

E. Devices useful in examination of outer structures of the eyeball

1. Keratoscope
2. Split lamp

Hearing testing

A. Tests with tuning fork

1. Weber test
2. Rinnie test
3. Bone and air conduction
4. Comparison of conduction and nerve deafness

B. Audiometry

An audiometer is an electronic instrument used in medical clinics to test for hearing loss. From "normal" values: plot the hearing loss in decibels at frequencies from 8000 Hz in descending steps of 2000 Hz.

C. Other methods of hearing testing

1. Tympanometry
2. Otoemission