

PHOTOSTRESS TEST

The photostress test is a simple clinical technique that can differentiate between retinal (macular) and postretinal (e.g. optic nerve) disease. The test involves exposing the eye to the light from the ophthalmoscope for 10 s and measuring the time taken for acuity to return to within one line of pre-bleach acuity. Subject with normal healthy macular function should be able to read line in the 50-60 s.

Patients with a macular problem may have recovery times lasting 1.5 to 3 min or longer. In car drivers with macular degeneration photostress effects from opposing cars may bleach retinal pigments and cause a dramatic drop in visual acuity. In patients with optic nerve disease the bleaching of the retina will have no effect on the recovery time. Photostress recovery time increases with age but is independent on pupil size, ametropia and visual acuity.

Material

Ophthalmoscope (see Chapter 7.1) or alternative source of light (e.g. penlight), stop watch, Snellen's optotypes (see Biophysics).

Method

Testing is done monocularly. Ask the subject to cover or occlude one eye. Measure the visual acuity of the other eye by Snellen's optotypes. Afterthat, the investigated eye is subjected to a bright light from ophthalmoscope directed onto macula for 10 s. Then, the subject is asked to read the line of letters just above his/her best line of acuity. The timing starts when the ophthalmoscope or penlight is removed. Photostress recovery time is measured. The same procedure is then repeated for the fellow eye.

Protocol

Write down the values for recovery time for both eyes and compare them with reference values.