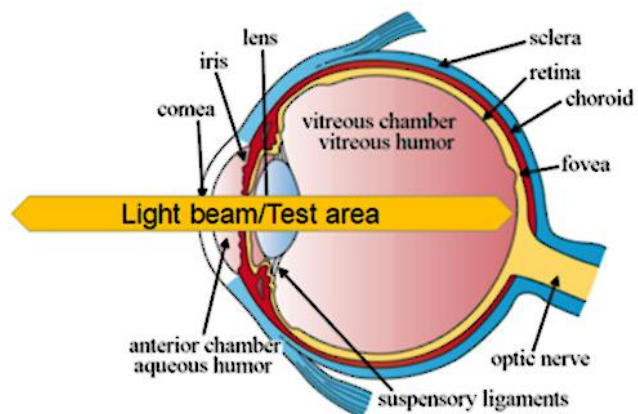


Working principle of a transillumination test


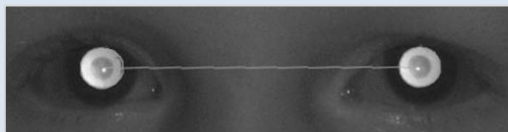
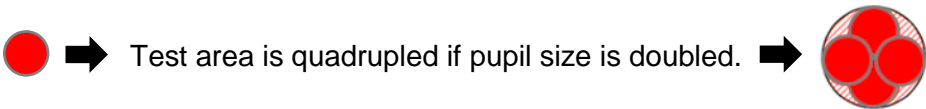
All Plusoptix devices use the measuring principle of the transillumination test. In a transillumination test, a beam of light is projected into the eye and reflected by the retina. The light beam illuminates the central part of the cornea, the lens, the vitreous humor and the retina. This measuring principle is used in many eye examinations. Depending on the task, a direct ophthalmoscope (red reflex test), an indirect ophthalmoscope (fundus exam) or a retinoscope (retinoscopy) are used.






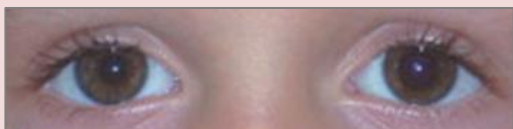











A transillumination test observes only those areas of a subject's eye that are illuminated!



Unlike other transillumination tests, Plusoptix devices avoid glare of the patient, by using infrared light. The pupils remain large even without dilation. The device records camera images of the illuminated pupils, which can be stored or printed for further analysis and documentation. The camera images are therefore particularly suitable for checking whether abnormal retinal reflexes or media opacities are present (Red Reflex or Bruckner test).

Since Plusoptix devices additionally measure the refraction and the measuring principle of the transillumination test is also used for the retinoscopy, measurements with Plusoptix devices were initially often referred to as video or photo retinoscopy.

	Test area with...	
	...Ophthalmoscope	...Plusoptix
<p>Without cycloplegia (non-invasive)</p>	 <p>www.heine.com</p> <p>Light emitted by ophthalmoscope reduces pupil size and limits test area.</p>	 <p>Infrared light has no effect on pupil size. Binocular, central media opacities (above) and peripheral abnormal reflexes or media opacities can be identified.</p>
		

	Transillumination test with...	
	...Ophthalmoscope (Red reflex or Bruckner test)	...Plusoptix
Regular image	 www.webeye.ophth.uiowa.edu	
Hyperopia, Myopia, Astigmatism and Anisometropia	 www.webeye.ophth.uiowa.edu	 Auto  detection
Anisocoria	 www.jim.fr	 Auto  detection
Hirschberg test (Gaze asymmetry)	 www.mrcophth.com	 Auto  detection
Abnormal reflex	 www.abcd-vision.org	 manual  evaluation
Media opacity	 www.webeye.ophth.uiowa.edu	 manual  evaluation

auto  detection:

Plusoptix analyzes image and provides readings for sphere, cylinder, axis, pupil sizes, gaze asymmetry and pupil distance, automatically.

manual  evaluation:

In order to detect an abnormal reflex or a media opacity, an eye care professional needs to review the image provided by Plusoptix, and document his observation, manually.