

In newborns, vision is tested mainly by checking for **light perception** by shining a light into the eyes and noting responses, such as pupillary constriction, blinking, following the light to midline, increased alertness, or refusal to open the eyes after exposure to the light. Although the simple maneuver of checking light perception and eliciting the pupillary light reflex indicates that the anterior half of the visual apparatus is intact, it does not confirm that the infant can see. In other words, this test does not assess whether the brain receives the visual message and interprets the signals.

Another test of visual acuity is the infant's ability to fix on and follow a target. Although any brightly colored or patterned object can be used, the human face is excellent. Hold the infant upright while moving your face slowly from side to side. Other signs that may indicate visual loss or other serious eye problems include fixed pupils, strabismus, constant nystagmus, the setting-sun sign, and slow lateral movements. Unfortunately, it is difficult to test each eye separately; the presence of such signs in one eye could indicate unilateral blindness.

Special tests are available for testing infants and other difficult-to-test children to assess acuity or confirm blindness. For example, in **visually evoked potentials**, the eyes are stimulated with a bright light or pattern, and electrical activity to the visual cortex is recorded through scalp electrodes (see [Research Focus](#) box).

Research Focus

Instrument-Based Vision Screening

Evidence supports the use of elective instrument-based vision screening, primarily photo screening and autorefraction, in children 6 months old to 3 years old, and as an alternative for children from 3 through 5 years old, particularly in those who are unable or unwilling to cooperate with routine vision charts ([American Academy of Pediatrics Section on Ophthalmology and Committee on Practice and Ambulatory Medicine, 2012](#)). Photo screening uses optical images of the eye's red reflex to estimate refractive error, media opacity, ocular alignment, and other factors putting a child at risk for amblyopia. Handheld autorefraction is