

Vision Screening Failure

FAST FACTS

174K+

preschool-age children in the US have some form of visual impairment

26/50

states require vision screenings for preschool-age children

75%

of children with myopia are diagnosed between ages 3 – 12 years

2 – 4%

of children worldwide suffer from amblyopia

12 million

children worldwide are visually impaired due to uncorrected refractive error and amblyopia

If you have urgent clinical questions or wish to make an urgent referral, contact an Ophthalmologist via Physician Priority Link at 513-636-7997 or 1-888-636-7997. For non-urgent questions, email eye@cchmc.org.

Vision screenings in your practice play a vital role in early detection of potential visual impairment or eye conditions likely to lead to vision loss. Because children and parents are not always aware of visual impairment at an early age, a failed vision screen is often the primary indicator for referral to a pediatric ophthalmologist or optometrist for a comprehensive exam. Early diagnosis of a condition causing visual impairment is critical to a child's long-term vision health.

ASSESSMENT

Perform vision screening using one of these methods:

Objective — inspect eye, pupil, red reflex and motility at every visit.

Instrument-based screening (e.g., photoscreening) — for children aged 12 months to 3 years; recheck annually until patient can participate in visual acuity testing.

Recognition visual acuity testing — by age 3 to 4 years, children generally can participate in matching/naming acuity testing with age-appropriate symbols (optotypes). Use an adhesive monocular patch for testing. In some cases, instrument-based can be considered (ages 3 to 6 years) when cooperation is limited. If the child is already wearing glasses, then glasses should be worn for testing.

HISTORY RED FLAGS

Patient Medical History

- Strabismus (persistent eye misalignment after 4 – 6 months of age)
- Neurodevelopmental disorders, genetic disorders with known ocular impact: chromosomal disorders (e.g., Down syndrome), Neurofibromatosis, Stickler syndrome, acquired CNS injury (trauma, infection, malignancy)
- Premature birth (<32 weeks gestation)

- Persistent red eyes, severe ocular allergy, acquired or congenital conditions with ocular involvement

Family History

- Strabismus
- Amblyopia
- High refractive error
- Retinal disorders or eye malignancies (e.g. retinoblastoma)
- Congenital cataracts

WHEN TO REFER

Refer to Cincinnati Children's Eye Clinic:

Objective failure — asymmetric/absent red reflex; pupil asymmetry especially associated with drooping eyelid or problems moving the eye (urgent referral); persistent red eye(s) or photophobia

Pediatric vision screening test — varies base on instrument, age-appropriate screening thresholds

Visual acuity thresholds (eye chart tests, age-dependent)

- **Ages 3 – 4 years** — Refer if worse than 20/50 line in one or both eyes
- **Ages 4 – 5 years** — Refer if worse than 20/40 line in one or both eyes

- **Ages 5+ years** — Refer if worse than 20/30* line in one or both eyes (*or 20/32 line, depending on chart used)
- **At any age** — Refer for difference of 2 lines of vision or more between the right eye and left eye

Note: If patient is non-cooperative with exam and you have a low suspicion for ocular pathology, consider a second screening attempt within 6 months. If retesting is inconclusive, refer to a pediatric eye care specialist for a comprehensive eye exam.

If you would like additional copies of this tool, or would like more information, please contact the Physician Outreach and Engagement team at Cincinnati Children's.

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Inclusion Criteria

Patients with pertinent ocular findings on examination that can inhibit vision development (e.g., strabismus, ptosis) and patients who do not pass a vision screening with instrument-based screener (ages 12 months to 3 years) or visual acuity-based screening (ages 3 to 4 years and up)

Patient Presents

Standard Workup

- Patient Medical History
- Family History
- Physical Exam

HPE (HISTORY AND PHYSICAL EXAM) RED FLAGS

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- Premature birth (<32 weeks gestation)
- Conditions associated with ocular involvement

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- Strabismus
- Amblyopia
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Physical Exam

Any abnormal or unusual findings such as:

- Eye misalignment
- Abnormal motility
- Pupil abnormalities
- Ptosis
- Cloudy cornea, buphthalmos (associated with congenital glaucoma)
- Leukocoria

Yes

Prompt Management Required

No

- Examples: Acute strabismus/ptosis, papilledema, abnormal red reflex, new onset pupillary abnormalities
- Call Priority Link to speak with an Ophthalmologist — 513-636-7997 or 1-888-636-7997

- Refer to Cincinnati Children's Eye Clinic for eye exams. Patient's family should call the Scheduling Center at 513-636-3200 to make an appointment.