



Children who should bypass vision screenings and go straight to an eye exam



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Vision Impairments in Children

5 to 10% of all preschool-aged children

- Significant refractive error
- Amblyopia
 - Poor vision
- Strabismus
 - Misalignment of the eyes

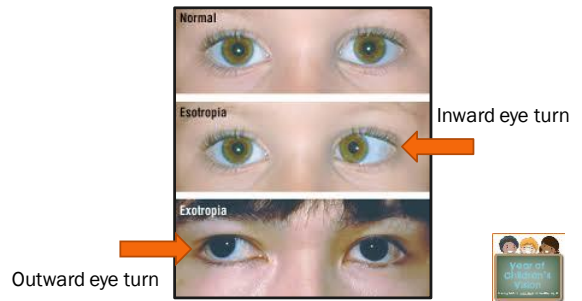


Refractive Error

- ☞ Myopia
 - nearsightedness
- ☞ Hyperopia
 - farsightedness
- ☞ Astigmatism



Strabismus



Amblyopia

- ☞ High refractive error
- ☞ Visual deprivation
- ☞ Strabismus



Vision Impairments in Children

- ☞ Majority of human learning occurs visually
- ☞ Vision impairments – more than just “poor vision”
 - Emotional development
 - Neurological development
 - Physical development



Vision Screenings

- ⌘ Done to detect children who have or are at a risk for having visual impairments
 - Significant refractive error
 - Strabismus
 - Amblyopia
- ⌘ Early screening/detection and treatment = very important



Bypass Vision Screenings

- ⌘ Children at risk for vision impairments
- ⌘ Comprehensive eye examination
- ⌘ Screenings versus Comprehensive eye examination
 - *Very common myth: They are both the same thing.*
- ⌘ Which children are considered to be "at risk"....?



High Risk Populations

- ⌘ Neurodevelopmental disorders
- ⌘ Readily recognized eye abnormalities
- ⌘ Born premature
- ⌘ Maternal smoking, drug, alcohol use
- ⌘ Family history of eye disorders
- ⌘ Suspected to have an eye disorder
- ⌘ Difficult to screen



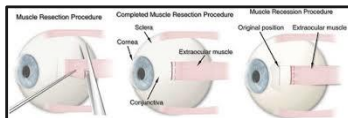
Treatment Options

- ⌘ Refractive Error
 - Glasses
 - Contact lenses



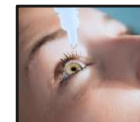
Treatment Options

- ⌘ Strabismus
 - Glasses
 - Prisms
 - Vision Therapy
 - Surgery



Treatment Options

- ⌘ Amblyopia
 - Glasses
 - Patching
 - Eye drops



Neurodevelopmental disorders

- ∞ Visual impairment affects their learning ability
- ∞ In addition, may have difficulty with:
 - Speech
 - Motor
 - Hearing
 - Cognition
- ∞ Early identification and intervention is critical



Cerebral Palsy

- ∞ Brain maldevelopment – characterized by motor dysfunction
 - *Refractive error
 - *Strabismus
 - *Amblyopia
 - Poor eye focusing skills
 - Poor eye tracking skills



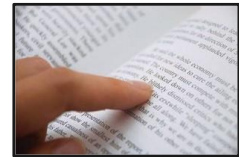
Down Syndrome

- ∞ Chromosomal abnormality – cognitive delays
 - *Refractive error
 - *Strabismus
 - *Amblyopia
 - Poor eye focusing skills
 - Blepharitis/conjunctivitis



Autism

- ∞ Genetic risk and environmental factors
 - *Refractive error
 - *Strabismus
 - Poor eye tracking skills



Attention Deficit Hyperactivity Disorder

- ∞ Genetic risk and environmental factors
 - Poor eye teaming skills
 - Convergence Insufficiency – may be mislabeled as ADHD



Readily recognized eye abnormalities

- ∞ Strabismus
 - Esotropia
 - Inward eye turn
 - Exotropia
 - Outward eye turn
 - Hypertropia
 - Vertical misalignment
- ∞ Ptosis
 - Droopy eye lid



Readily recognized eye abnormalities

Leukocoria ("white pupil")

- Uncorrected refractive error
- Strabismus
- Congenital cataract
- Retinopathy of Prematurity
- Coat's disease
- Retinoblastoma



Children with risk factors for eye disorders

- ✎ Born prematurely
 - <32 weeks of gestation
 - Low birth weight (<1500 grams = 3 lbs, 4 ounces)
 - At risk for retinopathy of prematurity
- ✎ Maternal smoking, drug or alcohol use during pregnancy
- ✎ Family history of eye disorders



Children suspected to have an eye disorder

Complains about:

- Blurry vision
- Double vision
- Headaches with near work

Squinting

Rubs eyes



Reading text that is double can be very confusing. The letters overlap, words run together, and sometimes the words appear to swim on the page. No one should have to suffer with double vision!



Children suspected to have an eye disorder

- ✎ Avoids reading
- ✎ Holds reading material very close
- ✎ Sits close to the TV
- ✎ Bumps into things
- ✎ Behavioral issues or refuses to do something



Children who are difficult to screen

Something we can all relate to...



Conclusion

- ✎ Early detection and treatment is extremely critical
- ✎ Importance of follow up care
- ✎ Teamwork is key!!



Thank you for your attention!



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References

1. Calonge N. Screening for visual impairment in children younger than age 5 years: Recommendation Statement. *Ann Fam Med.* 2004;2:263-266.
2. National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention. Vision impairment among children. Available at: <http://www.cdc.gov/ncbddd/developmentaldisabilities/documents/Visionimpairment.pdf>. Accessed August 23, 2013.
3. Black, P. Visual disorders associated with cerebral palsy. *Br J Ophthalmol.* 1982;66:46-52.
4. Merrick J, Koslowe K. Refractive errors and visual anomalies in Down syndrome. *Downs Syndr Res and Pract.* 2001;6(3):131-134.



References

5. Denis D, Burillon C, Livet MO, Burguiere O. Ophthalmic signs in children with autism. *J Fr Ophthalmol.* 1997;20(2):103-10.
6. Granet DB, Gomi CF, Ventura R, Miller-Scholte A. The relationship between convergence insufficiency and ADHD. *Strabismus.* 2005;13(4):163-8.
7. The Vision in Preschoolers Study Group (2007). Children unable to perform screening tests in Vision in Preschoolers Study: Proportion with ocular conditions and impact on measures of test accuracy. *Invest Ophthal Vis Sci,* 48(1):83-87.

