- Children born from high-risk pregnancy (e.g., maternal drug use, infection during pregnancy, preterm delivery).

b. Developmental Disabilities

Many children with special needs have undetected and untreated visual problems[167] (see Appendix Table 4: Partial Listing of Ocular Manifestations of Neurodevelopmental Disorders and Other Syndromes). Children with developmental or intellectual disabilities have a higher rate of vision disorders and should receive a comprehensive pediatric eye and vision examination.[21, 25, 168] Although clinically more challenging, visual assessment is possible in the majority of these children.[167] (Evidence Grade: B),[169] (Evidence Grade: B) Early identification of specific visual deficits could lead to interventions to improve the educational and occupational achievement and quality of life for these high-risk children.

CONSENSUS-BASED ACTION STATEMENT: Many children with developmental or intellectual disabilities have undetected and untreated vision problems and should receive a comprehensive pediatric eye and vision examination.
Evidence Quality: There is a lack of published research to support or refute the use of this recommendation.
Benefit and Harm Assessment: Implementation of this recommendation is likely to result in improved quality of life and educational and occupational achievement for these high-risk children. The benefits of this recommendation were established by expert consensus opinion.

8. Trauma and Ocular Manifestations of Child Abuse/Neglect

a. Trauma (Accidental)

A majority of concussions occur in the pediatric and adolescent population (5 to 17 years of age), with the 11 to 17-year-old group representing the largest proportion of those injured.[170, 171] Children are particularly vulnerable to the consequences of concussion, often having a more prolonged recovery and poorer outcomes, from a cognitive and developmental perspective, than adults with concussion.[172-175] A recent study found a high prevalence of vision problems in adolescents with concussion along with significant symptoms associated with these vision disorders.[176] The most common binocular vision disorder occurring in post-concussion syndrome is convergence insufficiency (CI) with a prevalence of 49% in children. Other common problems are accommodative insufficiency and saccadic dysfunction.

All children with concussion should see their general practitioner in the event they should need more emergent care and should be scheduled for a comprehensive eye examination to confirm visual capabilities are protected.

b. Ocular Manifestations of Child Abuse and Neglect (Non-accidental)

External eye trauma (e.g., conjunctival hemorrhages, lid lacerations, corneal scars and/or opacities) and retinal trauma (e.g., hemorrhages, folds, tears, and/or detachments) are common ocular findings from child abuse and can have an important role in its diagnosis.[177-180] Most often the child is between 2 and 18 months of age at the time of abuse.[179, 181]

The eyes can be direct or indirect targets of child abuse and may provide valuable diagnostic information, particularly when there are limited external signs of abuse. In children, the leading cause of retinal hemorrhages with retinal folds and macular retinoschisis, in the absence of skull fractures or automobile accident history, is typically abusive head trauma.[182, 183] Retinal hemorrhages, poor visual response, and poor pupil response in an infant may indicate abusive head trauma, or Shaken Baby Syndrome,[177] (Evidence Grade: B),[178] (Evidence Grade: C) a form of child abuse in which the child is injured secondary to violent shaking.

A vague history provided by the parent/caregiver that changes on re-questioning or is inconsistent with the age of the child or extent of the injury should be an alert for abuse. In such cases, a detailed history is one of the most important factors to consider when assessing whether a child has been abused.[180]