

# Preventing childhood blindness and protecting children's eye health: what should we know?

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## Opinion

It is estimated that about 5% of worldwide blindness involved children younger than 15 years of age. In developing countries, 50% of the population is in this age group.<sup>1</sup> World Health Organization (WHO) defined blindness as a visual acuity less than 3/60 or a corresponding visual field loss of less than 10 diopters in the better eye with the best possible correction.<sup>2</sup> By WHO criteria, there are 1.5 million children worldwide who are blind: 1.0 million in Asia, 0.3 million in Africa, 0.1 million in Latin America and 0.1 million in the rest of the world. In addition to these data, more than 12 million children suffer from vision impairment. Fortunately, most causes of childhood blindness are treatable or preventable. Knowledge of parent's awareness and perception of eye problems are important and necessary for early detection and early age intervention.

Leukocoria or white pupillary reflex is an abnormal white reflection from the retina of the eye. Leukocoria in the newborn is a medical sign for a number of conditions, including congenital cataract, persistence of the tunica vasculosa lentis, retrolental fibroplasia, coats disease and intraocular tumors. Although the prevalence of congenital cataracts is low, in developing countries up to 15/10,000 newborns have bilateral cataract<sup>3</sup> caused by rubella and other diseases such as toxoplasmosis, cytomegalovirus or herpes. Retinoblastoma is the most frequent eye tumor in children, with an incidence of 1/15,000 to 20,000 live births.<sup>4</sup> Sixty percent are unilateral: the median age at diagnosis is 2 years and most of these forms are not hereditary.

Other disorders that require monitoring by an ophthalmologist from birth are prematurity (less than 1500g birth weight or 32 weeks), congenital ptosis (drooping eyelid), and although it is rare, a continuous tearing associated with photophobia, blepharospasm and increased corneal diameter must rule out a congenital glaucoma.<sup>5</sup> But the two leading causes of visual impairment during childhood are refractive errors and strabismus (squint). Both diseases if not detected early and corrected before 7 years of age are the mean cause of unrecoverable low vision, which is known as amblyopia. That's why child's eyes should be examined during regular pediatric appointments and vision testing should be conducted around age three. The prevalence of both diseases is much higher in children with special needs such as those with cerebral palsy.<sup>6</sup>

Some signs that may indicate parents should be aware that their child has vision problems are wandering or crossed eyes, disinterest in reading or viewing distant objects, squinting or turning the head in an unusual manner while watching TV and family history of childhood vision problems. Our children spend most of their time at school, so an involvement by teachers to detect these signs would be highly recommended. We must take particular account in protecting child's

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eyes from solar radiation with appropriate sunscreens and prevent eye trauma during play and sports, especially in children with amblyopia or one healthy eye. Because sometimes it is not easy to have a proper appreciation of the visual health in childhood, programs to increase awareness of the causative factors, spectacle wearing, and on the harmful effects of squint should be conducted for both parents and teachers.

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## Conflicts of interest

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