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Abnormal Red Reflex: Etiologies in a Pediatric Ophthalmology Population

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Leukocoria is often noticed by parents or relatives on flash photography, but previous literature suggests that this finding is not a useful predictor of pathology and cannot be reliably used for red reflex screening.¹² With the advent of new technologies, however, improved methodology in smartphone-based applications and artificial intelligence can enhance the detection of RB. Many smartphone applications, such as MDEyeCare¹³ and CRADLE^{13,14} for RB screening, Peek Acuity^{15,16} for visual acuity screening, and GoCheckKids¹⁷ for amblyopia screening in children aged 1 to 6 years, have shown great promise in helping primary care physicians make more informed referrals. While these applications still require further development to improve sensitivity across all pediatric age groups, they have the potential to become useful screening tools for common pediatric ocular conditions. According to Google AI research group,¹⁸ artificial intelligence can improve physicians' diagnostic accuracy; with improvement of traditional red reflex screening through augmented data-driven

logical development of a child. Unilateral cataracts, the only type detected in our study, carry a less favorable prognosis than bilateral cataracts, as even a small lenticular opacity can cause significant deprivation amblyopia.²³ In patients with congenital cataracts, unilateral cataract surgery should typically occur around 4 to 6 weeks of age and bilateral cataract surgery by 3 months of age.²³ If the cataract is not deemed visually significant, children can be treated with close observation, patching, and sometimes glasses.^{23,24} Children with later onset cataracts should be managed based on the visual significance of the cataracts. While the mean age of cataract surgery that we reported in our study was older than the age recommended, this may be due to the presence of an acquired cataract, delayed onset of presentation, or delayed referral to an ophthalmologist. When a cataract is suspected in a pediatric patient, the patient should be referred to an ophthalmologist in a timely fashion.

With the possibility of blindness or even death in certain ARR-associated pathologies, pediatricians

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