**INTRODUCTION**

Preschool vision screening and health problems are common among children living below the poverty line. In order to prevent amblyopia and other vision-related problems, early identification of risk factors is important. The authors conducted a study to determine the effectiveness of the PediaVision screening device in detecting amblyopia risk factors in children ages 3-5 years.

**METHODS**

288 preschool-aged children were screened by the PediaVision S09 at the Albina Head Start in Portland, Oregon. The device gives an immediate Pass or Refer result. Amblyopia risk factors include anisometropia, astigmatism, myopia, hyperopia, and cycloplegic retinoscopy. The study compared the PediaVision S09 with cycloplegic retinoscopy in detecting amblyopia risk factors.

**RESULTS**

The PediaVision S09 correctly identified 30 of 44 children with significant refractive error using the default settings. AAPOS referral criteria failed to detect 7 children with borderline anisometropia, providing a sensitivity for anisometropia of 29%. The default factory settings failed to identify 4 children with myopia, producing a sensitivity for myopia of 71%. The PediaVision S09 correctly identified 30 of 44 children with significant refractive error using the default settings. AAPOS referral criteria failed to detect 7 children with borderline anisometropia, providing a sensitivity for anisometropia of 29%. The default factory settings failed to identify 4 children with myopia, producing a sensitivity for myopia of 71%.

**DISCUSSION**

The very low incidence of myopia (2%) in this study group makes it difficult to recommend a failure criteria for myopia. Future research should investigate the utility of anisometropia criteria to further optimize screening accuracy.

**CONCLUSION**

PediaVision screening has a high level of accuracy in detecting amblyopia risk factors in the preschool population. The device is an effective tool in detecting anisometropia, astigmatism, myopia, and hyperopia. The device provides a pass or refer result in less than 20 seconds.

**FURTHER INFORMATION**

Elks Children’s Eye Clinic Vision Screening Program 3375 SW Terwilliger Blvd. Portland, OR 97239-3998 503 545-8115 www.ohsucasey.com/vision_screen

**ACKNOWLEDGEMENTS**

Funding: Oregon Health & Science University Case Study Endowment.

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**HOW EFFECTIVE IS THE PEDIAVISION S09 IN DETECTING AMBYLOPIC RISK FACTORS IN CHILDREN, AGES 3-5 YEARS?**

**RESULTS**

The PediaVision S09 was compared with cycloplegic retinoscopy. Acuity with cycloplegic refraction was not obtained if the child could not be refocused or if refraction was considered. Cycloplegic retinoscopy was performed if the PediaVision screening did not detect at least one risk factor. Overall, 212 children were screened with the PediaVision S09 and the remaining 76 children were screened with cycloplegic retinoscopy. The PediaVision screening correctly identified 30 of 44 children with significant refractive error using the default settings. AAPOS referral criteria failed to detect 7 children with borderline anisometropia, providing a sensitivity for anisometropia of 29%. The default factory settings failed to identify 4 children with myopia, producing a sensitivity for myopia of 71%.

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