Traditional and Instrument-Based Vision Screening in Third-Grade Students

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Introduction: AAPOS recommends optotype-based vision screening for children >5 years old. Instrument-based screening for 3-4 year olds are more time-efficient and have higher positive predictive value than traditional optotype screening. This study evaluates instrument-based vision screening and traditional screening for third-grade students.

Methods: Third-graders from 16 schools in a single county in Virginia were screened by traditional methods (optotypes and stereoacuity) and Plusoptix S12. Children referred from either method received a comprehensive eye examination with cycloplegic refraction in the schools (MD/OD). Time to screen was recorded.

Results: Screened: 1593 children. Referred: 516(32.4%). Examined: 247(47.9%).

Discussion: The Plusoptix has similar PPV to traditional vision screening and detects children with acceptable visual acuity but may have a need for glasses. Children with non-refractive decreased visual acuity may be missed by instrument-based screens.

Conclusion: Instrument-based vision screening is more time efficient than traditional screening and has a similar PPV in third-grade students. Input from teachers to identify struggling students may be helpful if students are screened solely with autorefractors or photoscreeners.