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## Visual predictors of reading performance in kindergarten and first grade children.

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#### Abstract

**PURPOSE:** A masked investigation of the relation between performance on various vision tests and reading was conducted with 90 kindergartners (mean age 5.73 years) and 91 first graders (mean age 6.76 years) from a middle class, suburban, elementary school near Cleveland, Ohio.

**METHODS:** Vision testing included the Modified Clinical Technique (MCT), +/- 2.00 D flipper lenses with red/green suppression check for accommodative facility, and Randot for stereoacuity. Reading performance was independently evaluated with the Metropolitan Achievement Test 6 Reading Test and teachers' assessments.

**RESULTS:** The results revealed that accommodative facility was predictive of successful reading performance in 7-year-olds ( $p = 0.0431$ ), first graders ( $p = 0.0125$ ), and in the entire subject group when age ( $p = 0.0254$ ) or grade ( $p = 0.0224$ ) was controlled. Failure on the MCT was significantly associated with decreased reading skill in 5-year-olds ( $p = 0.0431$ ). In addition, stereoacuity worse than 100 sec arc ( $p = 0.0316$ ), MCT failure plus stereoacuity worse than 50 sec arc ( $p = 0.0316$ ), and accommodative facility ( $p = 0.0155$ ) were predictive of whether children of average intelligence would show successful or unsuccessful reading ability.

**CONCLUSIONS:** Thus, visual performance was significantly related to reading performance even in children of average intelligence when IQ was partially controlled. Also, the predictive value of the MCT for reading achievement could be improved by the addition of a referral criterion for stereoacuity. This would make the results of MCT screening more readily applicable to educators.

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