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Investigation of accommodative and binocular function in dyslexia.

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Abstract

The visual correlates of dyslexia are the subject of controversy, and much evidence suggests that they may include some aspects of binocular and accommodative function. These factors were investigated in 43 control and 39 dyslexic children, who were matched for age, sex and performance intelligence quotient. The dyslexic group exhibited significantly lower positive and negative vergence reserves, and vergence instability when the eyes were dissociated at near. Their amplitudes of accommodation also were significantly reduced. However, other measures including dissociated and associated heterophoria and accommodative lag and facility were similar in both groups. The stability of motor ocular dominance, as assessed with a modified Dunlop test, was similar in both groups. The results of a simulated reading visual search task suggested that the vergence and accommodative dysfunction were not a major cause of the dyslexia. Further analyses, using reading-age matched groups, suggested that these ocular motor correlates were not attributable to the better reading performance in the control group. The most likely remaining explanation is that they are, in most cases, non-causal correlates of the dyslexia.

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