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Vergence control across saccades in dyslexic adults.

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Abstract

Many aspects of vision have been investigated in developmental dyslexia. Some research suggests deficits in vergence control (e.g. Buzzelli, 1991, Optom. Vision Sci. 68, 842-846), although ability tocontrol vergence across saccades has not yet been investigated. We have explored this question indirectly using Enright's (1996 Vision Res. 36, 307-312.) sequential stereopsis task. The task requires observers to set two adjacent targets (whose textures cannot be resolved simultaneously if either is fixated) to appear equi-distant. Enright has argued that sequential stereopsis stereoacuity thresholds offer an indication of vergence control across saccades. We report two experiments using a total of 17 dyslexic and 18 control adults. Performance was measured on a sequential stereopsis task and an ordinary 'simultaneous' stereopsis task. No significant differences betweengroups were found. However, whereas practice of the sequential task lowered control group thresholds on the simultaneous task, for the dyslexic group it significantly raised thresholds, suggesting that visual fatigue is especially important in investigations of visual functions in dyslexia. Although the small samples used limit conclusions at this stage, the main sequential stereopsis results suggest that, if Enright is correct, dyslexic adults can show normal vergence control acrosssaccades.

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