

Stereopsis, accommodative and vergence facility: do they relate to dyslexia?

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Abstract

The relation between visual functions and reading performance has been the subject of conflicting opinion over the years. The purpose of this study is 2-fold: first, to examine factors other than visual acuity, i.e., stereopsis, accommodative facility and vergence facility, which might show a greater impact on reading achievement; and second, to utilize well defined dyslexic and normal controls to ensure that the reading deficits were not caused by overt neurological, psychological, educational, or environmental factors. Thirteen normal readers and 13 dyslexics were carefully matched by rigorous quantitative criteria. The performance of both groups on tests of visual acuity and stereopsis was similar. The dyslexic readers tended to show better accommodative facility. Dyslexics performed significantly worse than the matched normal readers on a test of vergence facility. These results, in agreement with those reported by other studies, indicate that less efficient dynamic vergence facility may contribute to reading impairment, unlike other static functions such as visual acuity and stereopsis. It may be that the vergence problems of the dyslexics are related to sequential oculo-motor abnormalities. The dyslexics' vergence problems may also be partly responsible for their large number of small eye movements.

PMID: 1766644 [PubMed - indexed for MEDLINE]