

Attentional processes in adults with dyslexia

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ABSTRACT

Many studies have shown that, in addition to phonological difficulties, children with dyslexia experience difficulties in processing visual information, and, in particular, visual information associated with the magnocellular pathway. Although not all researchers have found difficulties associated with early processing in this pathway, attentional problems related to parietal cortex function (a later processing stage of this pathway which primarily receives magnocellular inputs) appear more consistent. There has also been some indication that individuals with dyslexia demonstrate visual field response differences, suggesting a left visual field “mini-neglect” with “over distractibility” in the right visual field. These conclusions usually rely on comparisons between a group of individuals with dyslexia and one without, often with the dyslexia group showing large variations in performance. Recent research has also suggested that these difficulties continue into adulthood. In this paper, the results of several visual attentional experiments examining performance of adults with dyslexia are presented, with analysis of group comparisons and also individual case to control group comparisons. Several questions are addressed in the analyses: Do adults with dyslexia demonstrate difficulties in shifting visual attention on both response time and accuracy measures? Do these individuals experience spatial-based and object-based attentional difficulties? What is the nature of the visual field differences demonstrated in performance on attention tasks? Do adults with dyslexia demonstrate prolonged attentional dwell times? Does a relationship exist between performance on the attentional tasks and reading ability? Overall, the results indicate that individuals with dyslexia present with spatial attentional difficulties related specifically to visual orienting of attention in the periphery. A significant relationship between orienting ability and phonological ability was also found. The results demonstrate the importance of carrying out both individual case to control group analyses in addition to group comparisons. Implications of the findings to the process of reading and future directions of research are discussed.