
Dynamic visual perception of dyslexic children.

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Abstract
This study describes the capacity of children to detect fast changes of a small visual pattern. Three visual detection tasks for a group of normally reading (N = 140) and another group of dyslexic children (N = 366) in the age range of 7 to 16 years have been used. All three tasks require the detection of the fast changing orientation of a small pattern before it disappears. In one task, stationary fixation was required, because the orientation changes took place always at the same location. In the saccade condition, the pattern was displaced suddenly to one or the other side and a saccade was required to detect the orientation. In a third condition, a distractor was presented at one side shortly before the oriented pattern appeared at the opposite side. In this case, an antisaccade with respect to the distractor was required. In all three conditions, the dyslexic group as a whole performed significantly below the level of the control group. The performance improved with age in both groups. The differences between the test and control group were largest in the distractor condition. When compared with eye-movement performance in an antisaccade task, a parallel development of the performance of both tasks was observed in both groups. The study shows that a certain percentage of dyslexic children has difficulties in the perception of fast changing stimuli, a task presumably challenging the magnocellular system.

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