

Motion deficits in dyslexia are restricted to high external noise displays

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Studies of motion perception in dyslexia have usually used random dot kinetograms with high external noise. Is the reported motion deficit in dyslexia due to deficiencies in motion perception per se, or due to deficiencies in excluding noise in the displays? In this study, we compared the motion perception thresholds of both dyslexic and non-dyslexic children, and dyslexic and non-dyslexic adults using first-order coherent motion displays that varied in noise level and signal salience. Both dyslexic children and adults had higher motion thresholds than non-dyslexic children and adults when the task involved first-order motion processing in high noise. Dyslexics performed as well as non-dyslexics, however, when the signal was clearly separated from the noise or noise was reduced. Thus dyslexics appear to have normal motion perception, but have difficulty processing motion in high external noise. The ability to exclude noise or ignore distractors while focusing on the what is relevant may play a role the creation of appropriately flexible yet solid phonological and orthographic categories, a fundamental process in learning to read.