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Global motion perception thresholds of good and poor readers

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Global motion perception is the perception of coherent motion in a noisy motion stimulus and it is one of the most important components in visual perception. This task strongly involves extrastriate brain areas, particularly V5/MT, where the dorsal stream dominates [R.Laycock et al, 2006, Behavioral and Brain Function, 2(26), 1-14]. Aim of this study was to determine global motion perception thresholds of typically developing children with different reading skills, using modified random dot kinematograms (RDK). 2055 children in 14 age groups from 6 to 19 years participated in the study. Stimulus consisted of moving 100 black dots (7 arc min), displayed for 1.7 seconds on the 12° white background of rectangular form. Signal and noise dots moved with identical velocities of 2, 5 or 8 deg/s. Global motion detection threshold decreased with age for all dot velocities. Motion perception threshold was significantly higher at 8deg/s velocity ($p<0,0001$), with mean value of 51,3%±0,6, while for 2 and 5 deg/s mean values were 31,7%±0,6 and 33,7%±0,6. Motion perception for poor and good readers differed only for velocity of 2deg/s ($p=0,045$). To determine reading skills we used modified One minute reading test.

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