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Early sign language experience and visual attention in young deaf readers: an eye tracking and fNIRS investigation

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Abstract

Researchers have found that deaf children's early exposure to a visual sign language and its visual sign phonological-syllabic structure promotes success in reading English. However, little is known about the multitude of visual cues to which deaf children attend when learning to read.

Nothing is known about the relative weighting of these visual cues, nor what processing principles underlie deaf children's decoding of meaning from print. How does the young deaf reader allocate attention to, and process, linguistic sign phonological-syllabic cues (one key cue being fingerspelling, a manual representation of English orthography), orthographic text-based print cues, and nonlinguistic meaningful images on the page? From the perspective of brain development and neural plasticity, do differences in the age of language exposure (AoE) impact visual attention, allocation, and processing of text in the emergent reader?