

Dyslexia could be linked to mixed-handedness

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Researchers from the University of St Andrews have collaborated with a multinational team of researchers from Greece, the Netherlands, Germany, and the UK to explore the intriguing connection between hand

preference and dyslexia.

The original hypothesis was that there could be a link between left-handedness and dyslexia. However, as published in the journal [*Neuroscience and Biobehaviours*](#), the study found that the mechanisms involved in dyslexia development seem linked to a reduction in asymmetry, rather than a complete reversal. In other words, dyslexia was not found to be robustly linked with left-handedness, but with mixed-handedness.

One of the authors of the study, Professor Silvia Paracchini from the School of Medicine at the University of St Andrews, said, "A stronger association for mixed-handedness rather than left-handedness was somehow unexpected. It is important to stress that this association between mixed-handedness and dyslexia is small translating in only a 2% increase of mixed-handedness observed in individuals with dyslexia compared to the [general population](#). Large studies like this one are needed to detect such patterns."

The research team conducted a systematic review of the literature, including studies featured in previous seminal meta-analyses, as well as an examination of new research. Led by Dr. Marietta Papadatou-Pastou, Assistant Professor of Neuropsychology at the National and Kapodistrian University of Athens the team identified 68 studies which were then entered into three [meta-analyses](#), totaling more than 45,000 individuals.

The category of mixed-[hand preference](#) was found to be under-defined, lacking a consistent definition across studies. Therefore, the authors emphasize the need for further research to elucidate this 'middle' category between [left-handedness](#) and right-handedness and the subtleties of its connection to dyslexia.

The study could not assess differences in hand skill or the strength of hand preference due to the absence of relevant studies.

More information: Julian Packheiser et al, Elevated levels of mixed-hand preference in dyslexia: Meta-analyses of 68 studies, *Neuroscience & Biobehavioral Reviews* (2023). [DOI: 10.1016/j.neubiorev.2023.105420](https://doi.org/10.1016/j.neubiorev.2023.105420)

Provided by University of St Andrews

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