

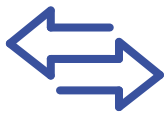
MUSIC LEARNING HELPS DYSLEXIA

SPEECH PERCEPTION



Music learning improves **impaired perception of speech** in background noise¹

ATTENTION SWITCHING



Music learning improves **difficulties with switching auditory attention**²

READING DIFFICULTIES



Music learning improves **auditory perception abilities** connected with reading difficulties³

BIOMARKER



Music learning assists in locating a **biomarker for dyslexia**⁴

SPEECH PROCESSING



Music learning helps amend **abnormal neural representation** of speech⁴

ATTENTION DIRECTION



Music learning improves **difficulties with directing auditory attention**²

It has been suggested in the research that the study of music processing and dyslexia may enhance our understanding of the disorder.

It has also been suggested that the use of music learning, especially rhythm learning, may be an effective intervention tool for dyslexic children in their pre-literacy and literacy periods of learning.

REFERENCES

1. Ziegler, J. C., Pech-Georgel, C., George, F., & Lorenzi, C. (2009). Speech-perception-in-noise deficits in dyslexia. *Developmental science*, 12(5), 732-745.
2. Lallier, M., Tainturier, M. J., Dering, B., Donnadieu, S., Valdois, S., & Thierry, G. (2010). Behavioral and ERP evidence for amodal sluggish attentional shifting in developmental dyslexia. *Neuropsychologia*, 48(14), 4125-4135.
3. Besson, M., Schön, D., Moreno, S., Santos, A., & Magne, C. (2007). Influence of musical expertise and musical training on pitch processing in music and language. *Restorative neurology and neuroscience*, 25(3-4), 399-410.
4. Hornickel, J., & Kraus, N. (2013). Unstable representation of sound: a biological marker of dyslexia. *Journal of Neuroscience*, 33(8), 3500-3504.