

# Exercise for Children with Communication Disorders

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## Key Points:

- **The positive benefits of exercise may not be as easy to realize for children with communication disorders who are less active than their peers.**
- **Emerging research shows that exercise can improve reading performance in individuals with dyslexia.**
- **Exercise has the significant potential to improve children's speech and language deficits and should be further investigated.**

Exercise has been shown to benefit cognition, academic performance, mental health, and self-esteem in typically-developing children<sup>1 2 3 4</sup>. Similarly, in children with varying neurodevelopmental disorders, it seems that exercise interventions lead to both physiological and cognitive benefits<sup>5 6 7</sup>. In everyday life, though, children who have disabilities such as communication disorders may not be reaping these benefits. Data suggests that children with neurodevelopmental disabilities (e.g., cerebral palsy, epilepsy, and learning disorders), exhibit lower levels of physical activity compared to typically-developing children<sup>8</sup>. One possible explanation is that children with neurodevelopmental disabilities have poorer motor skills, leading to greater inactivity and poorer fitness<sup>9</sup>.

Over half of children with communication disorders show co-occurring motor deficits, with higher rates of motor impairments associated with certain diagnoses (e.g., developmental language disorder, a condition that affects 1/13 children)<sup>10 11</sup>. Exercise interventions may be effective for children in this population with potential benefits including physical, cognitive-linguistic, and social-emotional gains!

Could exercise also have an impact on speech or language deficits? Although little research has been done in this area, the extant literature suggests exercise could have this potential. In a study

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by Ben-Soussan et al. (2014), a daily, brief exercise session was shown to improve reading performance in adults with dyslexia<sup>12</sup>. One possible explanation for these gains is that exercise improves the underlying cognitive impairment associated with dyslexia<sup>13 14</sup>.

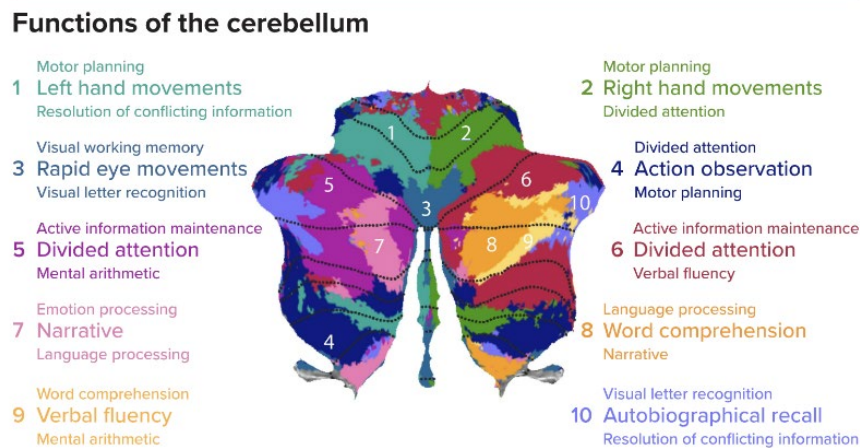


Figure 1: Ten Functional Regions of the Cerebellum. Graphic: [King et al., 2019](#).

Research from King et al. (2019) (Figure 1), suggests that the cerebellum, an area of the brain involved in motor domains, also contains functional regions devoted to cognitive-linguistic tasks (e.g., language processing, word comprehension)<sup>15 16</sup>. Exercise interventions have the potential to improve the function of the cerebellum, thereby affecting not only motor skills, but also cognitive skills essential for reading. Especially as exercise is a relatively inexpensive intervention, more research should be done into the effects of exercise on communication deficits. Additional studies that determine potential cognitive-linguistic benefits of exercise could pave the way for exercise interventions for children with dyslexia and other communication disorders.

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