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Articles

Effects of replicating primary-reflex movements on specific reading difficulties in children: a randomised, double-blind, controlled trial

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Summary

Background

Children with specific reading difficulties have problems that extend beyond the range of underlying language-related deficits (eg, they have difficulties with balance and motor control). We investigated the role of persistent primary reflexes (which are closely linked in the earliest months of life to the balance system) in disrupting the development of reading skills.

Methods

We assessed the efficacy of an intervention programme based on replicating the movements generated by the primary-reflex system during fetal and neonatal life. A randomised, individually matched, double-blind, placebo-controlled design was used and children (aged 8–11 years) with persistent primary reflexes and a poor standard of reading were enrolled into one of three treatment groups: experimental (children were given a specific movement sequence); placebo-control (children were given non-specific movements); and control (no movements).

Findings

From an initial sample of 98 children, 60 children, 20 in each group were matched on age, sex, verbal intelligence quotient (IQ), reading ability, and persistent asymmetrical tonic neck reflex. For asymmetrical tonic neck-reflex levels there was a significant (group by time) interaction ($p < 0.001$). The experimental group showed a significant decrease in the level of persistent reflex over the course of the study (mean change -1.8 [95% CI -2.4 to -1.2], $p < 0.001$), whereas the changes in the placebo-control and control groups were not significant (-0.2 [-0.9 to 0.6] and -0.4 [-0.9 to 0.2]).

Interpretation

This study provides further evidence of a link between reading difficulties and control of movement in children. In particular, our study highlights how the educational functioning of children may be linked to interference from an early neurodevelopmental system (the primary-reflex system). A new approach to the treatment of children with reading difficulties is proposed involving assessment of underlying neurological functioning, and appropriate remediation.

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