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RAISING AWARENESS OF THE MYTH OF THE "UNAFFECTED HAND" IN CHILDHOOD HEMIPLEGIA

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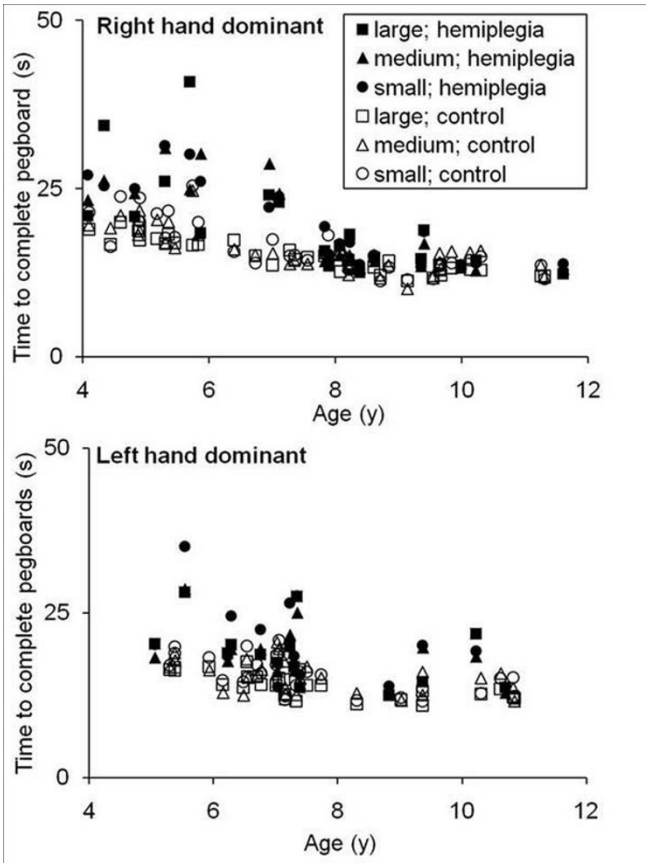
Background and aims: The term 'hemiplegia' implies a unilateral deficit, yet several studies have demonstrated abnormal limb control ipsilateral to the brain lesion. This is under-recognised by clinicians and has implications for function and therapy. We documented deficits in the "unaffected" hand in children with hemiplegia using a dexterity test developed by our group for use in children with motor disorders.

Methods: *Participants*: 33 children (4-11y) with hemiplegia (18 male; 19 left hemiplegia); 66 age, sex and handedness matched controls.*Assessment*: Adapted 9-hole pegboard test (2 adjacent boards; 3 peg sizes; electronically timed). *Analysis*: ANOVA (between-group factors *group* (hemiplegia/control), *age* (4-5, 6-7, 8-11), *sex, dominant hand*) performed separately for each peg size.

Results: Some hemiplegic children with radiologically confirmed unilateral lesions had prolonged pegboard completion times whereas others scored similarly to controls (**Figure:** filled symbols - hemiplegia). For all peg sizes, main effects of *group* ($p < 0.001$) and *age* ($p < 0.001$) were significant but *sex* and *dominant hand* were not. There was a significant interaction between *group* and *age* ($p < 0.005$), with smaller difference in group means in the oldest age-group. This deserves exploration with a longitudinal study.



[Figure]

Conclusion: The "unaffected" hand in children with hemiplegia is less dextrous than the dominant hand of controls. Therapy to improve function of the more-affected hand should be designed to achieve optimal outcomes bilaterally.