Introduction: Previous studies have shown that hydration status and water consumption affects cognitive performance but, to date, little research has looked at the effects on fine motor skills.

Objective: To investigate whether water consumption improved performance on tasks that require predominantly fine motor skills.

Method: In Study 1, 57 children (mean age 10.11 years) were tested individually. In one occasion children were given a drink of water (500 millilitres) and on the other occasion they were not. They completed a selection of cognitive tasks and a finger-tapping task pre and post-intervention; a urine sample was collected and urine osmolality (Uosm) analysed. In Study 2, 86 children (mean age 10.1 years) were tested pre and post-intervention in a drink or no drink condition on a bead threading, finger tapping, handwriting and Figure-Ground task.

Results: In Study 1, the number of finger taps were significantly higher on the occasion that children had a drink compared to when they did not (p<0.05). Exploratory analysis suggests that this effect was moderated by Uosm. In Study 2, having a drink of water increased handwriting speed (p<0.05) and there was a trend for finger-tapping speed to increase but handwriting quality and Figure-Ground performance was not affected.
Conclusions: Fine motor speed increased when children had a drink of water. This finding is important because children spend a large proportion of the school day using fine motor skills and handwriting skill can predict future academic performance.

Key words: children, hydration, motor skills, cognition.

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