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There have been surprisingly little study on the influence of dehydration on children cognitive abilities, particularly in children living in temperate climates (20°C). As children are more dependent upon others for the provision of water, they might be more at risk of dehydration.

The benefit of water intake on cognitive function during school days was therefore examined in this randomized clinical trial. Forty children (18 girls, 22 boys), on average age of 8 years and 7 months, were allocated to two groups. The temperature of the classroom was 20°C. They performed cognitive tests twice on two separate afternoons, once either 20 or 35 minutes after drinking 300 ml of water and the other day when no additional water was provided. The following criteria were assessed: immediate memory, ability to sustain attention and delayed memory (5 minutes after presenting objects). No attempt was made to influence the normal pattern of eating and drinking, and school policy was favourable to spontaneous drinking.

Memory, as assessed by the recall of 15 previously presented objects, was significantly better on the day that water had been consumed whereas the ability to sustain attention was not changed. Moreover, the effect of drinking water was significantly greater on delayed memory.

The effects reported here might indicate that children are more susceptible to dehydration.

Key Messages: Overall, this study tends to confirm the hypothesis that memory might be particularly sensitive to water intake in children.

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