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Childhood hypertension associated with cognitive issues

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Hypertension, more commonly known as high blood pressure, has increased significantly in children, paralleling the current childhood obesity epidemic. Although we know that adult hypertension can affect the brain, little research has been done on the cognitive effects of childhood hypertension. In a new study scheduled for publication in the *Journal of Pediatrics*, researchers found that hypertension is associated with cognitive issues in children and adolescents.

Marc B. Lande, MD, MPH, and researchers from the University of Rochester, Emory University, Maimonides Medical Center, University of Texas at Houston, University of North Carolina, Thomas Jefferson University, University of Maryland, and the University of California at Los Angeles, compared different tests of cognitive skills between 75 10-18-year-old children with newly-diagnosed hypertension and 75 matched children without hypertension. Children who had other factors that are known to affect cognitive skills were excluded from the study (e.g., ADHD, learning disabilities, sleep disorders). According to Dr. Lande, "We wanted to make sure that if we found differences between children with and without hypertension, it was likely associated with the hypertension itself, not any of these other factors."

The researchers found that the children with hypertension performed worse on the cognitive tests that measured visual and verbal memory, processing speed, and verbal skills. Additionally, more children with sleep issues had hypertension, which intensified the effect of poor sleep on cognition and executive function. It is important to note that the

differences between groups were small and that the average cognitive test scores of both groups were largely within normal ranges. The children with hypertension were not cognitively impaired, but rather performing less well than children without hypertension.

Overall, this study provides evidence that hypertension in children is associated with a subtle pattern of decreased performance on cognitive testing. Notes Dr. Lande, "In the future, we want to better understand if there are physical changes to the brain in children who have hypertension that could explain these cognitive test results." Knowing how these physical changes might affect cognitive skills could be important in future studies that assess whether antihypertensive treatments could improve cognitive performance in children with hypertension and reverse or prevent future adult hypertension-related problems.

More information: "Neurocognitive Function in Children with Primary Hypertension," *Journal of Pediatrics*, DOI: 10.1016/j.jpeds.2016.08.076

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