

COMMENT. The prevalence of tension-type headache (TTH) in children and adolescents has been estimated variously from 11% to 73%. In one large series of 8255 adolescents in Norway, a 1-year-prevalence of TTH was 18%, compared to 7% for migraine (Zwart J et al. *Cephalalgia* 2004;24:373-379 – cited by above authors). Since the differentiation of TTH and migraine is questionable, except in terms of severity, treatment strategies are similar. Other primary headaches listed above would require more specific therapies.

ATTENTION DEFICIT AND LEARNING DISORDERS

FUNCTIONAL MRI AND ATTENTION DEFICIT HYPERACTIVITY DISORDER

The Stroop effect, a measure for selective attention, on behavioral and brain activation of attention deficit hyperactivity disorder (ADHD) children (9 boys, ages 9.8-14.5 years, off or on methylphenidate) and 9 controls was studied using event-related functional magnetic resonance imaging (fMRI) at the Institute of Mental Health, Peking University, Beijing, China, and other centers in China and at Harvard Medical School, Boston, MA, USA. The Stroop effect (reaction time in IC [interference condition with high cognitive load] longer than in NC [neutral condition and low cognitive load]) was present in the behavioral performance of control children, but was absent in untreated ADHD children, not receiving MPH. When MPH was administered to ADHD children a Stroop effect was obtained. The activation volume (AV) of prefrontal cortex (PFC) in both the neutral (NC) and interference conditions (IC) in ADHD children off MPH was smaller than in controls, indicating frontal lobe hypofunction in either high (IC) or low (NC) cognitive load. The anterior cingulate cortex (ACC), basal ganglia (BG), insula and cerebellum showed hypofunction in high cognitive load (IC). In low cognitive load (NC), the ACC was normal, while the BG, insula and cerebellum showed compensatory hyperfunction, suggesting a compensatory neural network when ADHD children have a lower cognitive load. (Zang Y-F, Jin Z, Weng X-C et al. Functional MRI in attention-deficit hyperactivity disorder: evidence for hypofrontality. *Brain & Dev* December 2005;27:544-550). (Respond: Dr Yu-Feng Wang, Institute of Mental Health, Peking University, Huayuanbeilu 51, Haidian District, Beijing 100083, China).

COMMENT. These findings confirm previous reports of hypofrontality in ADHD adults, using PET studies and cerebral glucose metabolism (Zametkin AJ et al. *N Engl J Med* 1990;323:1361-6). A compensatory network involving basal ganglia and cerebellum may be implicated, when ADHD children are presented with lower cognitive load tasks. Functional MRI studies should offer an “in vivo” window, not only to brain regions that control cognitive and behavioral functions in ADHD, but also to the effect of medications on the circuits involved in attention ((Curatolo P. Editorial. The neurology of attention deficit/hyperactivity disorder. *Brain & Dev* Dec 2005;27:541-543).