Research

Prenatal AEDs and Cognitive Outcomes in School-aged Children 663
Use of antiepileptic drugs (AEDs) is common in women of child-bearing age. However, the effects of long-term AED use are unknown. In this population-based cohort study of children born between 1997 and 2006, Elkjær and coauthors investigated school performance among 477,162 children unexposed to AEDs prenatally and 18,652 children exposed to different types of AEDs prenatally (valproate sodium, 253; phenobarbital, 86; oxcarbazepine, 236; lamotrigine, 396; clonazepam, 188; and carbamazepine, 294). Children were linked across national registries, and school performance was measured as test scores that were standardized to z scores and adjusted for risk factors. Long-term impairment was found among the valproate-exposed children, who performed significantly worse than unexposed children in all tests administered between the third and eighth grades. In sixth grade testing (mean [SD] age, 12.9 [0.39] years), valproate-exposed children performed worse than children exposed to lamotrigine. Editorial perspective is provided by Pennell.

Excessive Daytime Sleepiness and Alzheimer Disease 672
Sleep has been proposed to be important for clearance of brain β-amyloid (Aβ), one of the earliest hallmarks of Alzheimer disease. Excessive daytime sleepiness (EDS) is associated with aging, but it is not clear if EDS is associated with Alzheimer disease. In a cohort analysis of 283 elderly participants without dementia (mean [SD] age, 77.1 [4.8] years) with longitudinal amyloid imaging enrolled in the Mayo Clinic Study of Aging, Carvalho and coauthors found that self-reported EDS was associated with increased accumulation of Aβ over time. Early identification of patients with EDS and treatment of underlying sleep disorders could potentially reduce Aβ accumulation in this vulnerable group and merits further investigation. Editorial perspective is provided by Winer and Mander.

Intravenous and Oral Corticosteroids for Acute Optic Neuritis 690
Intravenous (IV) administration of corticosteroids is the standard of care in the treatment of acute optic neuritis, but it is not known whether a bioequivalent oral dose is equally effective. In a single-blind randomized clinical trial, Morrow and coauthors assigned 55 participants with acute optic neuritis (mean [SD] age, 34.6 [9.5] years) to high-dose IV methylprednisolone sodium succinate (1000 mg) or oral prednisone (1250 mg) daily for 3 days and compared recovery of vision over time. There were no differences found at 1 and 6 months on measures of optic nerve function or visual acuity, and there were also no differences in the rate or type of adverse effects with either treatment. This study shows that the use of high-dose oral corticosteroids is as effective as high-dose IV corticosteroids for treatment of acute optic neuritis and has immediate implications for clinical practice.

Accuracy of Testing for Concussion in Young Athletes 697
There have been growing concerns about the validity of data gathered during baseline neurocognitive testing for sport-related concussion management. In this cross-sectional study of 7897 participants (mean [SD] age, 14.71 [1.78] years) who completed baseline neurocognitive testing, 56% failed at least 1 of 4 published validity indicators. Abare and coauthors found that estimates of the prevalence of invalid test scores varied considerably across age groups, from as high as 84% in those aged 10 years to 29% in those aged 21 years. Baseline rates of failure were surprisingly high overall, suggesting a need for increased scrutiny of performance validity measures on testing in concussion management programs.