In Focus

Spotlight on the March 26 Issue

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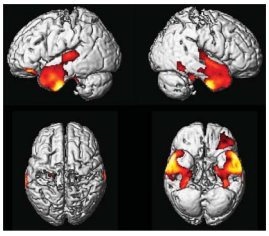
Pathways to neurodegeneration: Effects of HIV and aging on resting-state functional connectivity

This study used resting-state functional connectivity MRI (rs-fcMRI) to investigate within- and between-network connectivity among 5 functional brain networks in 58 HIV-infected participants and 53 HIV-uninfected controls. HIV-infected individuals showed decreases in rs-fcMRI intranetwork and internetwork correlations, leading to a baseline decrease in brain function similar to but independent of deterioration seen with aging.

See p. 1186; Editorial, p. 1178

Cognitive reserve associated with FDG-PET in preclinical Alzheimer disease



The authors examined the effect of education on FDG-PET brain metabolism in 52 cognitively healthy subjects with preclinical Alzheimer disease (AD). Higher education was associated with lower FDG-PET activity in preclinical AD for a given level of cognitive performance, suggesting that cognitive reserve has a compensatory function to sustain cognitive ability in presence of early AD pathology and hypometabolism.

See p. 1194, p. 1202; Editorial, p. 1180

Neural reserve, neuronal density in the locus ceruleus, and cognitive decline

In 165 older persons, higher density of noradrenergic neurons in the locus ceruleus was associated with slower cognitive decline, even when controlling for neurodegenerative markers, and modified the correlation of Lewy bodies with cognitive decline. Density of noradrenergic neurons in the locus ceruleus may be a structural component of neural reserve.

See p. 1202, p. 1194; Editorial, p. 1180

Infectious burden and cognitive function: The Northern Manhattan Study

Serologies and cognitive assessments were available in 1,625 participants of the Northern Manhattan Study cohort. In unadjusted analyses, higher infectious burden index was associated with worse cognition as assessed by the Mini-Mental State Examination and the modified Telephone Interview for Cognitive Status. Previous infections may contribute to cognitive impairment.

See p. 1209

From editorialists Strandberg & Aiello: "According to the current state of knowledge, an ideal trial to prove the microbe-dementia connection would involve not only antiviral but also antibacterial (e.g., spirochete or chlamydia) and anti-inflammatory therapy."

See p. 1182

Hypertension at time of diagnosis and long-term outcome after childhood ischemic stroke

At the time of first stroke, 53 of 84 pediatric patients with available blood pressure readings had at least 1 episode of hypertension, and 19 had hypertension on 3 consecutive days. Hypertension was thus prevalent in children with ischemic stroke and was associated with an increased risk of death.

See p. 1225

Time to pediatric epilepsy surgery is related to disease severity and nonclinical factors

Data were abstracted from records of 430 children who had epilepsy neurosurgery from 1986 to 2010. Shorter intervals to surgical treatment were associated with greater epilepsy severity and insurance type. Shorter times to treatment were also associated with having a brain MRI before referral or Hispanic ethnicity; such findings were unexpected and warrant further investigation to uncover the reasons for more rapid referral.

See p. 1231

Hippocampal volume and cell density changes in a mouse model of human genetic epilepsy

Pre-epilepsy structural differences may be fundamental to understanding susceptibility for seizures. In a validated seizure-naive genetic mouse model of human epilepsy that has febrile seizure susceptibility, there were increases in MRI hippocampal dentate granule cell volume and density, suggesting a morphologic biomarker for seizure susceptibility.

See p. 1240

VIEWS & REVIEWS

Pediatric neuroenhancement: Ethical, legal, social, and neurodevelopmental implications

This ethics position paper on pediatric neuroenhancement is a follow-up to the 2009 Ethics, Law and Humanities Committee guidance statement on adult neuroenhancement. In healthy and developmentally nonautonomous children and adolescents, neuroenhancement is not justifiable.

See p. 1251

NB: "Neuro kids," see p. e132. To check out other Reflections: Neurology and the Humanities, point your browser to www.neurology.org.

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