Nature Reviews Neurology **7**, 597 (2011);
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IN BRIEF

STROKE

Ischemic stroke on the rise in children and young adults

Hospitalization for ischemic stroke became more frequent among children and young adults between 1995 and 2008, according to research conducted in the USA. This trend was accompanied by a rise in traditional stroke risk factors, including obesity, hypertension and diabetes, in individuals aged 15–44 years within the study population. The authors of the report suggest that public health initiatives aimed at reducing such risk factors should be targeted towards adolescents and young adults.

Original article George, M. G. *et al.* Trends in stroke hospitalizations and associated risk factors among children and young adults, 1995–2008. *Ann. Neurol.* doi:10.1002/ana.22539

MULTIPLE SCLEROSIS

MicroRNA profiling reveals impaired neurosteroidogenesis

Three microRNAs that suppress the expression of enzymes involved in neurosteroid synthesis are upregulated in the cerebral white matter of patients with multiple sclerosis (MS), a Canadian study shows. Levels of neurosteroids such as allopregnanolone were reduced in the brains of these patients, and allopregnanolone treatment in a mouse MS model ameliorated some of the neuropathological and neurobehavioral features of the disease. These findings raise the possibility of using neurosteroids as biomarkers or therapeutic agents in MS.

Original article Noorbakhsh, F. *et al.* Impaired neurosteroid synthesis in multiple sclerosis. *Brain* **134**, 2703–2721 (2011)

MOTOR NEURON DISEASE

Mutant SOD1 induces misfolding of the wild-type protein

Over 150 mutations in the superoxide dismutase 1 (*SOD1*) gene have been associated with amyotrophic lateral sclerosis (ALS), but the disease-causing mechanisms are still being elucidated. Previous studies demonstrated SOD1 aggregates in motor neurons from patients with SOD1-ALS, and new research shows that misfolded mutant SOD1 protein can induce misfolding of the wild-type protein, thereby enabling propagation of SOD1 aggregates via a prion-like mechanism.

Original article Grad, L. I. *et al.* Intermolecular transmission of superoxide dismutase 1 misfolding in living cells. *Proc. Natl Acad. Sci. USA* **108**, 16398–16403 (2011)

PERIPHERAL NEUROPATHIES

Progression-associated gene expression profiles in diabetic neuropathy

Microarray experiments performed in sural nerve biopsy samples have a uncovered a unique gene signature that characterizes progressing diabetic neuropathy. The study, published in *Brain*, identifed 532 genes that were differentially expressed between patients with progressing and non-progressing diabetic neuropathy. The investigators developed a computational model that incorporated 14 of these genes and could accurately classify the progression status in 92% of cases.

Original article Hur, J. *et al.* The identification of gene expression profiles associated with progression of human diabetic neuropathy. *Brain* doi:10.1093/brain/awr228