## **IN BRIEF**

## MULTIPLE SCLEROSIS

### Successful trial of amiselimod for multiple sclerosis

A phase II trial of the sphingosine 1-phosphate 1 receptor modulator amiselimod has indicated that the drug is effective and safe in patients with relapsing–remitting multiple sclerosis. 415 patients were randomly assigned to receive 0.1 mg, 0.2 mg or 0.4 mg amiselimod or a placebo. The median total number of gadolinium-enhanced T1-weighted lesions during a 24-week treatment period was lower among patients who received 0.2 mg or 0.4 mg amiselimod than among those who received 0.1 mg or placebo. No serious adverse events were reported.

 $\label{lem:original_article} \textbf{ORIGINAL ARTICLE} \ Kappos, L. et al. \ Safety and efficacy of amiselimod in relapsing multiple sclerosis (MOMENTUM): a randomised, double-blind, placebo-controlled phase 2 trial. \ Lancet Neurol. \ http://dx.doi.org/10.1016/S1474-4422(16)30192-2 (2016)$ 

### NEUROMUSCULAR DISEASE

### Benefit of thymectomy in myasthenia gravis

Thymectomy is commonly performed in the treatment of myasthenia gravis, yet its benefit is unclear. A new randomized trial has shown that in patients with generalized nonthymomatous myasthenia gravis, thymectomy in combination with prednisone treatment is more effective than prednisone treatment alone. 126 patients were randomly assigned to the two treatment arms, and their average Quantitative Myasthenia Gravis score was assessed over a 3-year period. Those who underwent thymectomy had lower time-weighted average scores, and were less likely to require immunosuppression or hospitalization for disease exacerbations.

**ORIGINAL ARTICLE** Wolfe, G. l. et al. Randomized trial of thymectomy in myasthenia gravis. N. Engl. J. Med. **375**, 511–522 (2016)

#### **EPILEPSY**

### Tau pathology found in temporal lobe epilepsy

Tauopathy contributes to cognitive decline in temporal lobe epilepsy, according to a recent study of brain tissue from 33 patients who underwent temporal lobe resection. Tau neuropil threads, neurofibrillary tangles and/or pre-tangles were found in resected tissue from 31 of the 33 patients. The patterns of tau pathology resembled those seen in Alzheimer disease and chronic traumatic encephalopathy. More-extensive tau pathology was associated with a greater decline in cognitive function in the year before surgery, and between 3 months and 1 year after surgery. These results add epilepsy to the growing list of disorders in which tau pathology contributes to neurodegeneration, and could lead to new approaches to the diagnosis and treatment of cognitive decline in epilepsy.

**ORIGINAL ARTICLE** Tai, X. Y. *et al.* Hyperphosphorylated tau in patients with refractory epilepsy correlates with cognitive decline: a study of temporal lobe resections. *Brain* http://dx.doi.org/10.1093/brain/aww187 (2016)

### **STROKE**

### Aortic stiffness predicts cognitive impairment

Aortic stiffening increases the risk of incident mild cognitive impairment (MCI) and dementia, according to a recent study. The study included 1,101 dementia-free participants, in whom aortic stiffness was measured and related to the 10-year risk of mild cognitive impairment and dementia. Aortic stiffness was predictive of incident MCI in the entire population, and of incident dementia in people without diabetes.

 $\label{eq:original_article} \textbf{ORIGINAL ARTICLE} \ Pase, M. P. \textit{et al.} \ A ortic stiffness and the risk of incident mild cognitive impairment and dementia. \\ Stroke \ \underline{\text{http://dx.doi.org/10.1161/strokeaha.116.013508}} (2016)$ 

## **IN BRIEF**

## **NEURO-ONCOLOGY**

# Exercise could help to counteract radiation damage in children with brain tumours

Results from a newly published crossover trial suggest that exercise training promotes white matter and hippocampal recovery after brain irradiation. Paediatric brain tumour survivors who had received radiotherapy were assigned to a 12 week period of group exercise followed by 12 weeks of no training, or vice versa. The participants underwent MRI and reaction time testing at baseline and at the end of the two 12 week periods. Exercise resulted in increased brain connectivity (as measured by fractional anisotropy) that was sustained over the 12 week off-training period. Moreover, exercise increased hippocampal volume and improved reaction times.

**ORIGINAL ARTICLE** Riggs, L. et al. Exercise training for neural recovery in a restricted sample of pediatric brain tumor survivors: a controlled clinical trial with crossover of training versus no training. *Neuro Oncol.* http://dx.doi.org/10.1093/neuonc/now177 (2016)

## TRAUMATIC BRAIN INJURY

### Impaired medical decision-making capacity in TBI

Many patients with mild to severe traumatic brain injury (TBI) have long-term deficits in comprehending medical information and making informed treatment decisions, according to a new study comprising 111 individuals with TBI. The participants' medical decision-making capacity was evaluated at several time points 1 year after injury. In patients with mild TBI or complicated mild TBI, the deficits in some of the cognitively complex aspects of medical decision-making were transient, whereas in patients with more-severe TBI, the capacity for reasoning and understanding medical information often remained compromised.

ORIGINAL ARTICLE Steward, K. A. *et al.* Twelve-month recovery of medical decision-making capacity following traumatic brain injury. *Neurology* <a href="http://dx.doi.org/10.1212/WNL.00000000000003079">http://dx.doi.org/10.1212/WNL.0000000000003079</a> (2016)

### **PARKINSON DISEASE**

#### Retinal changes could be an early marker of PD

Neurodegeneration in the retina precedes damage to the substantia nigra and striatum in Parkinson disease (PD), as demonstrated in a recently published study using a rotenone-induced rat model of PD. 20 days after the rotenone insult, *in vivo* imaging and optical coherence tomography revealed increased retinal ganglion cell apoptosis and swelling of the retinal layers. These findings could pave the way for strategies to diagnose PD early in the disease course.

**ORIGINAL ARTICLE** Normando, E. M. et al. The retina as an early biomarker of neurodegeneration in a rotenone-induced model of Parkinson's disease: evidence for a neuroprotective effect of rosiglitazone in the eye and brain. *Acta Neuropathol. Commun.* **4**, 86 (2016)

### MULTIPLE SCLEROSIS

### Dehydration might contribute to fatigue in MS

Fluid hydration status correlates with fatigue in multiple sclerosis (MS), according to a new study of 50 women with MS. Patients with good hydration status (defined by urine-specific gravity (USG) <1.015) reported lower fatigue scores on Fatigue Performance Scale than did patients with low hydration status (USG >1.015). Moreover, USG correlated with MS Fatigue Severity Scale scores. Bladder dysfunction is common in MS, and some patients manage their bladder dysfunction by limiting fluid intake, which could explain the dehydration in some cases.

 $\label{eq:original_article} \textbf{ORIGINAL ARTICLE} \ Cincotta, M. C.\ et\ al.\ Fatigue\ and\ fluid\ hydration\ status\ in\ multiple\ sclerosis:\ a\ hypothesis.\ \textit{Mult.}\ Scler.\ \underline{http://dx.doi.org/10.1177/1352458516663854}\ (2016)$