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IN BRIEF

NEURODEGENERATIVE DISEASE

Remodelling neurodegeneration

TAR DNA-binding protein 43 (TDP43) is implicated in amyotrophic lateral sclerosis (ALS) and in some cases of frontotemporal dementia (FTD). Here, in a fly model of ALS–FTD, TDP43 reduced the recruitment of chromodomain-helicase-DNA-binding protein 1 (Chd1), a chromatin remodelling protein, to neuroprotective stress genes, resulting in reduced gene expression. TDP43 interacted directly with CHD2 (the human orthologue of Chd1), which is found at a reduced level in the cortex of individuals with FTD. This suggests that enhancing chromatin dynamics at stress genes might mitigate the effects of TDP43 in these disorders.

ORIGINAL ARTICLE Berson, A. *et al.* TDP-43 promotes neurodegeneration by impairing chromatin remodeling. *Curr. Biol.* http://dx.doi.org/10.1016/j.cub.2017.10.024 (2017)

NEUROPSYCHIATRIC DISORDERS

Stressful depression

Major depressive disorder (MDD) is linked to increased levels of circulating pro-inflammatory cytokines, such as interleukin 6 (IL-6). Among mice subjected to chronic social defeat stress (a rodent model of depression), the expression of the tight junction protein claudin-5 (CLDN5) at the blood–brain barrier (BBB) was reduced in the nucleus accumbens (NAc) in animals with greater susceptibility to depression-like behaviour; people with MDD also showed reduced *CLDN5* mRNA levels in the NAc. Knock-down of CLDN5 in mice increased BBB permeability and brain IL-6 levels, and induced depression-like behaviours, suggesting a role for CLDN5 in MDD.

ORIGINAL ARTICLE Menard, C. *et al.* Social stress induces neurovascular pathology promoting depression. *Nat. Neurosci.* **20**, 1752–1760 (2017)

SLEEP

I feel the need, the need for sleep

Sleep deprivation results in reduced cognitive function coincident with regional 'sleep-like' slow waves and theta waves in the brain. Here, single-neuron activity and local field potentials (LFPs) were recorded in sleep-deprived and non-sleep-deprived human neurosurgical patients while they performed a task that required them to distinguish between face and non-face pictures. In the sleep-deprived group, a subpopulation of medial temporal lobe (MTL) neurons showed fewer spikes of lengthened duration and delayed onset shortly before the onset of cognitive lapses. During these cognitive lapses, there was an increase in local slow and theta activity of LFPs, indicating that local, state-dependent activity changes in MTL are associated with cognitive lapses.

ORIGINAL ARTICLE Nir, Y. *et al.* Selective neuronal lapses precede human cognitive lapses following sleep deprivation. *Nat. Med.* http://dx.doi.org/ 10.1038/nm.4433 (2017)

DECISION MAKING

Valuable choices

In value-based decision making, it has been suggested that the complex feature spaces of different goods are reduced to single values that allow comparisons (economic choice) to be made in the context of current circumstances and wants (model-based behaviour). Optogenetically inactivating the rat lateral orbitofrontal cortex during an economic choice task had no effect on economic choice but affected model-based behaviour when a rat's 'wants' were manipulated, indicating that these behaviours are dissociable.

ORIGINAL ARTICLE Gardner, M. P. *et al.* Lateral orbitofrontal inactivation dissociates devaluation-sensitive behavior and economic choice. *Neuron* http://dx.doi.org/ 10.1016/j.neuron.2017.10.026 (2017)