

IN BRIEF

▶ METABOLISM**Flavours of value**

Animals can form preferences for flavours previously paired with another, undetectable, calorie-rich substance, suggesting the formation of associations between flavours and nutritional value. The authors showed that in humans, increases in plasma glucose levels after ingestion of a flavour paired with the carbohydrate maltodextrin correlated with subsequent responses to the flavour alone in defined regions of the nucleus accumbens and hypothalamus. This indicates that glucose metabolism regulates the formation of flavour–nutritional value associations in areas involved in the anticipation and initiation of feeding behaviour.

ORIGINAL RESEARCH PAPER de Araujo, I. E. et al. Metabolic regulation of brain responses to food cues. *Curr. Biol.* 2 May 2013 (doi:10.1016/j.cub.2013.04.001)

▶ PSYCHIATRIC DISORDERS**Astrocytic ATP in depression**

Depression has been associated with glial dysfunction, but the underlying mechanisms have remained elusive. Here, mice that developed depression-like behaviour after chronic social defeat stress had reduced ATP levels in the prefrontal cortex (PFC) and hippocampus compared with non-depressed and control mice. Central or peripheral ATP administration reduced depression-like behaviour in these mice. Transgenic mice with reduced or enhanced astrocytic ATP release showed higher and lower levels of depression-like behaviour, respectively. Infusion of purinergic P2X receptor antagonists into the medial PFC blocked antidepressant effects of ATP administration in socially defeated mice. These data suggest that deficient astrocytic ATP release and P2X receptor activation have a role in depression.

ORIGINAL RESEARCH PAPER Cao, X. et al. Astrocyte-derived ATP modulates depressive-like behaviors. *Nature Med.* 5 May 2013 (doi:10.1038/nm3162)

▶ NEUROIMAGING**Evaluating ads with fMRI**

This study used functional MRI (fMRI) to assess smokers' responses to the content of anti-smoking television advertisements. Advertisements with strong arguments (as rated by smokers) evoked greater responses in the dorsomedial prefrontal cortex (dmPFC) than those with weaker arguments, and dmPFC activation negatively correlated with nicotine intake 1 month later. This suggests that fMRI could be used to evaluate the potential effectiveness of anti-smoking advertisements.

ORIGINAL RESEARCH PAPER Wang, A.-L. et al. Content matters: neuroimaging investigation of brain and behavioral impact of televised anti-tobacco public service announcements. *J. Neurosci.* 33, 7420–7427 (2013)

▶ VISUAL PROCESSING**Area V4 in motion**

Although visual area V4 is known to process object colour and form, it also contains motion-direction sensitive neurons. The authors investigated the functional organization of directional responses in this area using optical imaging and single-cell recording in monkeys. The neurons that respond to stimuli moving in a particular direction were clustered into functional domains, with a columnar organization, in restricted regions of area V4. Thus, motion, traditionally associated with the dorsal visual pathway, is also processed in the ventral visual pathway.

ORIGINAL RESEARCH PAPER Li, P. et al. A motion direction preference map in monkey V4. *Neuron* 78, 376–388 (2013)