

## IN BRIEF

**NEUROIMAGING****Baseline brain activity fluctuations predict somatosensory perception in humans**

Boly, M. *et al. Proc. Natl Acad. Sci. USA* **104**, 12187–12192 (2007)

An individual's conscious perception of an external stimulus fluctuates with multiple presentations of that stimulus. This article shows that the conscious perception of low-intensity somatosensory stimuli correlated positively with baseline activity in brain regions thought to be involved in external monitoring, and negatively with activity in areas related to 'self monitoring'. Moreover, intensity ratings for a painful stimulus correlated with pre-stimulus activity in the anterior cingulate cortex, an area that mediates the affective component of pain. Thus, baseline brain activity might modulate the conscious perception of low-intensity somatosensory stimuli and pain.

**DOI:**  
10.1038/nrn2210

**STEM CELLS****Mosaic organization of neural stem cells in the adult brain**

Merkle, F. T. *et al. Science* 5 July 2007 (doi:10.1126/science.1144914)

It has been assumed that the neural stem cells of the adult subventricular zone (SVZ) are a homogenous population of multipotent cells, the fate of which is unrestricted until they reach their final destination (the olfactory bulb (OB)). Merkle *et al.* labelled stem cells in restricted regions of the postnatal mouse SVZ and examined their progeny, and found that stem cells from different regions of the SVZ actually produce only a few distinct types of OB neuron.

**ADDICTION****Dynamic BDNF activity in nucleus accumbens with cocaine use increases self-administration and relapse**

Graham, D. L. *et al. Nature Neurosci.* 8 July 2007 (doi:10.1038/nn1929)

The release of brain-derived neurotrophic factor (BDNF) from neurons in the nucleus accumbens (NAc) might contribute to the addictive effects of drugs such as cocaine. Here, the authors observed a transient increase in BDNF in the NAc after cocaine administration in rats. Infusing BDNF to enhance this boost in BDNF levels increased cocaine self-administration and drug-seeking behaviour, whereas neutralizing BDNF with antibodies or by knocking out the gene in mice attenuated such behaviour. These findings suggest that transient BDNF release from NAc neurons contributes to addictive behaviour.

**COGNITIVE NEUROSCIENCE****Amusia is associated with deficits in spatial processing**

Douglas, K. M. & Bilkey, D. K. *Nature Neurosci.* 24 June 2007 (doi:10.1038/nn1925)

The neural correlates of tone-deafness, or amusia, which is characterized by an inability to discriminate different musical notes, are largely unknown. In Western culture, 'high' musical notes are usually represented as being 'high' in space, for example, in musical notation. Here, the authors show that subjects with amusia performed badly in a mental-rotation task, and that their reaction time in this task was less affected than that of control participants by simultaneous execution of a pitch-discrimination task. These findings indicate that the same brain regions might be involved in processing spatial and musical information.