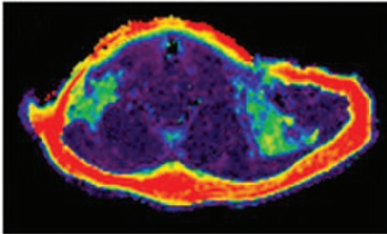


doi:10.1038/pr.2012.175

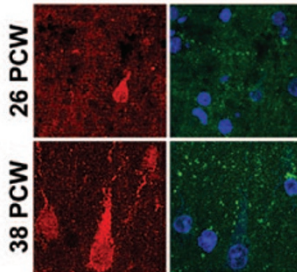
## Adipose tissue



Recent findings by positron emission tomography/computed tomography have sparked renewed interest in the persistence of brown adipose tissue (BAT) beyond infancy. In their review, Gilsanz and colleagues discuss the potential role of BAT in regulating weight and musculoskeletal development in children.

[See page 3](#)

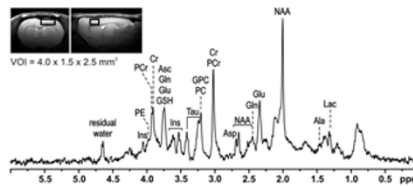
## Levetiracetam in neonatal seizures



The antiepileptic levetiracetam (LEV) is often used off label for treatment of neonatal seizures, despite insufficient short- and long-term efficacy data. In a rat model of hypoxia-induced neonatal seizures, LEV suppressed acute seizures and reduced later-life seizure susceptibility and seizure-induced neuronal injury. [See page 24](#)

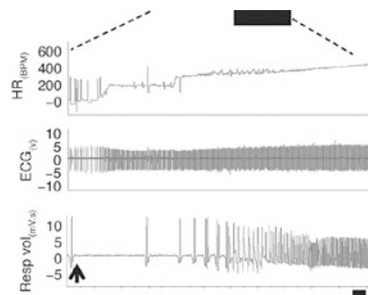
## Iron repletion and brain neurochemistry

Perinatal iron deficiency may lead to cognitive deficits. In a study of perinatal iron supplementation in



rat pups, Rao *et al.* compared results between two doses of iron. Their findings suggest that the two dosing schemes have differential effects on the neurochemical profile of the hippocampus, but not the prefrontal cortex, in adulthood. [See page 31](#)

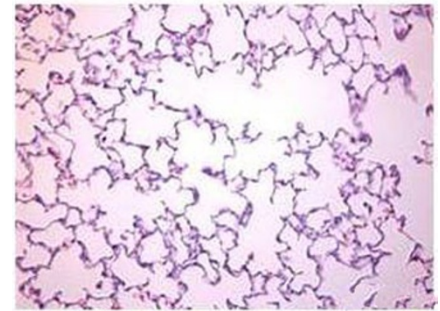
## Caffeine, 5-HT, and autoresuscitation



In neonatal rodents, serotonin (5-HT) neurons are critical for successful autoresuscitation. Cummings and co-investigators hypothesized that caffeine, a respiratory stimulant, would hasten gasping and improve the autoresuscitation of 5-HT-deficient, *Pet-1*<sup>-/-</sup> mice. Their findings suggest that caffeine reduces mortality related to asphyxia and 5-HT deficiency. These results may be relevant to efforts to reduce the incidence of sudden infant death syndrome. [See page 38](#)

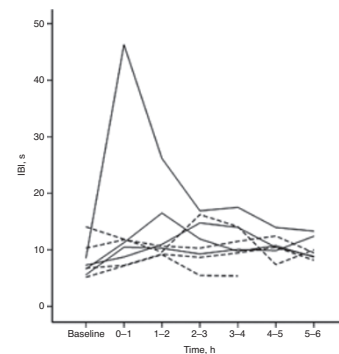
## Mesenchymal stem cell therapy

Mesenchymal stem cell (MSC) therapy may prevent neonatal hyperoxia-induced lung injury (HILI). There are, however, no clear data on the therapeutic efficacy of



MSC in established HILI. Sutsko *et al.* evaluated the effects of a single intratracheal dose of MSC versus MSC-conditioned medium (CM). The results suggest that optimal long-term improvement following HILI requires treatment with the MSC themselves or, potentially, repeated administration of CM. [See page 46](#)

## Opioid effect on aEEG



Little is known about the effects of sedative and analgesic medications on electrocortical activity in preterm infants. Norman and colleagues hypothesized that morphine might induce prolonged neurodepression compared with short-acting premedication in rapid-sequence induction/intubation. Their results suggest that morphine use is associated with prolonged amplitude-integrated electroencephalogram (aEEG)/EEG depression, independent of blood pressure changes, and might not be optimal for short procedures. [See page 87](#)