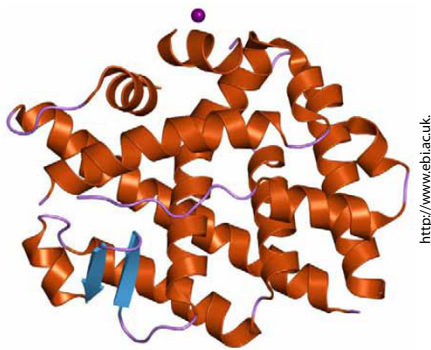


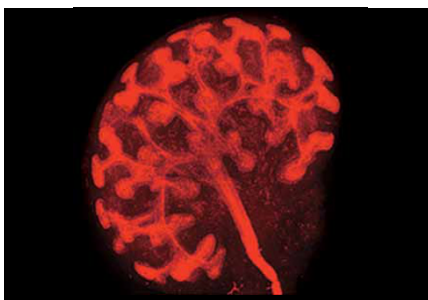
doi:10.1038/pr.2015.43

Insulin resistance and genetics



Intrauterine growth restriction followed by postnatal accelerated growth (CG-IUGR) is associated with long-term adverse metabolic consequences. Xie and coauthors hypothesized that CG-IUGR leads to an insulin-resistant phenotype through an alteration in DNA methylation and transcriptional activity of peroxisome proliferator-activated receptor gamma coactivator-1 alpha (PGC-1 α). The authors' findings in a rat model of CG-IUGR suggest that genetic and epigenetic modifications of PGC-1 α provide a mechanism that links early-life nutrition insult with susceptibility to long-term metabolic disease. [See page 625](#)

Maternal undernutrition and the kidney

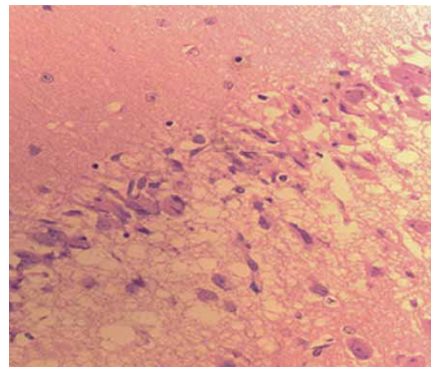


Restriction of maternal nutrients produces offspring with fewer nephrons. Awazu and Hida investigated whether the reduced nephron numbers are due to the inhibition of ureteric branching or early cessation of nephrogenesis in

rats. They examined the offspring of dams given food *ad libitum* and those subjected to 50% food restriction, and observed that ureteric branching is inhibited and developmentally regulated signaling pathways are downregulated at an early stage by maternal nutrient restriction.

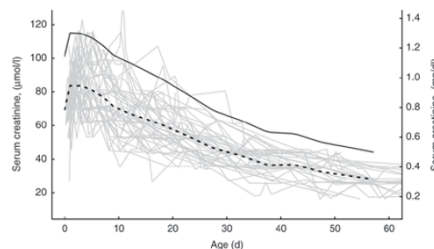
[See page 633](#)

Minimal hypothermia for pigs



Hoque *et al.* hypothesized that minimal systemic hypothermia with selective head cooling (SHC) following hypoxia-ischemia (HI) in pigs would be neuroprotective compared with systemic normothermia. Newborn pigs underwent global HI before being randomized to normothermia or minimal hypothermia with SHC. SHC did not reduce global or regional neuropathology score, but it increased mortality by 26%. [See page 674](#)

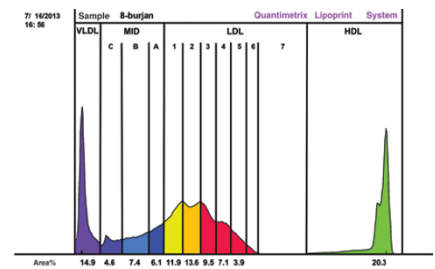
Serum creatinine reference ranges



Bateman and coinvestigators aimed to develop serum creatinine reference ranges for very-low-birth-weight (VLBW) infants from birth to 34–36 weeks postmenstrual age. They retrospectively identified a

sample of 218 VLBW infants and grouped them by gestational age. Their analysis showed three phases of serum creatinine change. The reference ranges provide a context for quantitative interpretation of serum creatinine trends in VLBW infants [See page 696](#)

Smith–Lemli–Opitz syndrome



Lőrincz and coauthors found that decreased activity of the high-density lipoprotein-associated paraoxonase-1 enzyme as well as a deleterious shift in the distribution of lipoprotein subfractions may contribute to the impaired antioxidant status observed in Smith–Lemli–Opitz syndrome. [See page 703](#)

Childhood fat and cardiac outcomes

Gishti and colleagues hypothesized that the relationship between cardiovascular risk factors in childhood and measures of total body and abdominal fat mass might be stronger than that between the same risk factors and body mass index. Measurements of 6,523 school-aged children seemed to show that high body-fat-distribution measures were strongly associated with increased risk of childhood hypertension, hypercholesterolemia, and clustering of cardiovascular risk factors. [See page 710](#)