

*Nature Reviews Endocrinology* **8**, 258 (2012); published online 27 March 2012;  
 doi:10.1038/nrendo.2012.39;  
 doi:10.1038/nrendo.2012.40;  
 doi:10.1038/nrendo.2012.41;  
 doi:10.1038/nrendo.2012.42

## IN BRIEF

### METABOLISM

#### Cardiac signal turns white adipose tissue into brown

Heart-derived natriuretic peptides increase the thermogenic potential of adipose tissue. Increased respiration, mitochondriogenesis and expression of thermogenic genes such as *UCP-1* and *PGC-1 $\alpha$*  resulted when human adipocytes were treated with natriuretic peptides, a process indicative of 'browning' of white adipose tissue. Cold-exposed mice had increased levels of natriuretic peptides, whereas mice lacking the natriuretic peptide clearance receptor showed elevated expression of thermogenic genes. These data suggest a role for the heart in determining adipose tissue type.

**Original article** Bordicchia, M. *et al.* Cardiac natriuretic peptides act via p38 MAPK to induce the brown fat thermogenic program in mouse and human adipocytes. *J. Clin. Invest.* **122**, 1022–1036 (2012)

### BONE

#### Synthetic ligand targets stem cells to form new bone

A synthetic integrin ligand (LLP2A) shows therapeutic potential for bone regeneration following disease or injury when coupled to the bisphosphonate alendronate. The compound has a high affinity for bone and, in mice, a single intravenous injection increased trabecular bone formation and bone mass. In addition, the agent was shown to prevent bone loss due to oestrogen deficiency. The results show that LLP2A coupled to alendronate can direct mesenchymal stem cells to form new bone and increase bone strength.

**Original article** Guan, M. *et al.* Directing mesenchymal stem cells to bone to augment bone formation and increase bone mass. *Nat. Med.* **18**, 456–462 (2012)

### REPRODUCTIVE ENDOCRINOLOGY

#### Gene variant conveys 2.7-fold increased risk of PCOS

A variant in the luteinizing hormone/choriogonadotropin receptor (*LHCGR*) gene increases an individual's risk of polycystic ovary syndrome (PCOS). Women who were heterozygous for the Ser312Asn variant of the LHCGR protein had a twofold higher risk of PCOS, whereas those who were homozygous had a 2.7-fold increased risk. If confirmed in other cohorts, this finding highlights the potential of screening women for a genetic susceptibility to PCOS.

**Original article** Capalbo, A. *et al.* The 312N variant of the luteinizing hormone/choriogonadotropin receptor gene (*LHCGR*) confers up to 2.7-fold increased risk of polycystic ovary syndrome in a Sardinian population. *Clin. Endocrinol. (Oxf.)* doi:10.1111/j.1365-2265.2012.04372.x

### OBESITY

#### Common gene variants associated with BMI in East Asians

Researchers have determined 10 single nucleotide polymorphisms (SNPs) associated with obesity or BMI in a meta-analysis covering approximately 2.4 million SNPs in 27,715 East Asians. Of these 10 gene loci, three SNPs were novel and had not been identified in previous studies, which were conducted predominantly in European populations. Identification of these new obesity-associated genes (*CDKAL1*, *PCSK1* and *GP2*) will help to elucidate pathways involved in obesity and illustrates the value of conducting studies in a range of populations.

**Original article** Wen, W. *et al.* Meta-analysis identifies common variants associated with body mass index in east Asians. *Nat. Genet.* **44**, 307–311 (2012)