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## IN BRIEF

### DIABETES

#### More genetic factors that contribute to T1DM identified

The Environmental Determinants of Diabetes in the Young (TEDDY) study has revealed non-HLA genetic factors that contribute to the development of type 1 diabetes mellitus (T1DM). The researchers genotyped 5,164 children for 41 non-HLA single nucleotide polymorphisms (SNPs) known to be associated with T1DM. The initial analysis found that eight of these SNPs were associated with the development of islet autoantibodies in the TEDDY participants, which decreased to four SNPs after adjustment. The team suggest that although genes in the HLA region are risk factors for T1DM, genetic factors in the non-HLA region also contribute to the pathogenesis and progression of T1DM.

**Original article** Törn, C. *et al.* Role of type 1 diabetes associated SNPs on risk of autoantibody positivity in the TEDDY Study. *Diabetes* doi:10.2337/db14-1497

### EPIDEMIOLOGY

#### The effect of obesity on cancer burden

People with a high BMI (>25 kg/m<sup>2</sup>) are known to be at increased risk of cancer. Now, a population-based study has used BMI estimates and cancer incidence data from the GLOBOCAN project to estimate that 3.6% of new cases of cancer in 2012 were the result of high BMI. Countries with high and very high human development indices had the greatest burden of cancer attributable to high BMI. The authors of the study suggest that their findings emphasize the need for global strategies to tackle the growing epidemic of obesity.

**Original article** Arnold, M. *et al.* Global burden of cancer attributable to high body-mass index in 2012: a population-based study. *Lancet Oncol.* doi:10.1016/S1470-2045(14)71123-4

### OBESITY

#### Berberine affects thermogenesis in mice

Berberine, a compound derived from *Coptis chinensis*, could be used to develop new therapies for obesity, according to recent findings. Obese *db/db* mice that were given the compound exhibited increased energy expenditure, limited weight gain, improved tolerance to cold and enhanced brown adipose tissue activity. Berberine was also found to induce the development of brown-like adipocytes and to increase the expression of *Ucp1* and other thermogenic genes.

**Original article** Zhang, Z. *et al.* Berberine activates thermogenesis in white and brown adipose tissue. *Nat. Commun.* doi:10.1038/ncomms6493

### IMMUNOLOGY

#### The control of homeostasis in adipose tissue

A new study published in *Nature Immunology* demonstrates that invariant natural killer T (*i*NKT) cells in adipose tissue from normal-weight mice and humans produce IL-2 and IL-10, which enables the cells to maintain an anti-inflammatory macrophage phenotype and control the activity of regulatory T cells. *i*NKT cells are, therefore, regulators of immunological homeostasis in adipose tissue that could be targeted in the treatment of obesity and other metabolic disorders, according to the authors of the study.

**Original article** Lynch, L. *et al.* Regulatory *i*NKT cells lack expression of the transcription factor PLZF and control the homeostasis of T<sub>reg</sub> cells and macrophages in adipose tissue. *Nat. Immunol.* doi:10.1038/ni.3047