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IN BRIEF

OBESITY

BMI-increasing variant identified in Samoans

A genetic variant in *CREBRF*, common in Samoans, has an effect size much larger than that of the main BMI-risk-associated variant in *FTO*, according to a new study. In a genome-wide association study of 3,072 Samoans, the missense *CREBRF* variant rs373863828 (Arg457Gln) was strongly associated with BMI ($P = 7.0 \times 10^{-13}$), with each copy of the A allele of this variant increasing BMI by 1.36 kg/m^2. The A allele of rs373863828 was also associated with an increased risk of obesity (OR = 1.305) and indices of total and regional adiposity (percentage body fat and both abdominal and hip circumference). Overexpression of the Arg457Gln variant in 3T3-L1 mouse adipocytes increased fat storage and decreased energy use. The findings are consistent with rs373863828 being a 'thrifty' variant that promotes disease (obesity) in times of food excess yet affords metabolic advantages in times of food shortage.

ORIGINAL ARTICLE Minster, R. L. *et al.* A thrifty variant in *CREBRF* strongly influences body mass index in Samoans. *Nat. Genet.* http://dx.doi.org/10.1038/ng.3620 (2016)

DIABETES

Natural autoantibodies protect against T1DM

A new study shows that patients deficient in autoimmune regulator (AIRE) have high-affinity neutralizing antibodies against type 1 interferons (IFNs), levels of which inversely correlate with type 1 diabetes mellitus (T1DM). Serum was collected from 81 AIRE-deficient patients and directed against a protein array displaying ~9,000 proteins. Most patients displayed autoreactivity to ~100 self-proteins, many of which were cytokines, IFNs in particular. Patient-derived IFN-specific mAbs inhibited IFN-dependent responses *in vitro* and IFN-induced pathologies in mice. Moreover, in patient studies, antibody-mediated neutralization of IFNα subtypes was associated with protection against T1DM. The findings suggest that naturally occurring human autoantibodies have therapeutic potential and that targeting IFNs could be an effective strategy to treat T1DM.

ORIGINAL ARTICLE Meyer, S. *et al.* AIRE-deficient patients harbor unique high-affinity disease-ameliorating autoantibodies. *Cell* http://dx.doi.org/10.1016/j.cell.2016.06.024 (2016)

THYROID CANCER

Mortality unaffected by rise in use of imaging tests

New research shows that most patients undergoing imaging tests after primary treatment of thyroid cancer have an increased likelihood of being treated for recurrence, but no improvement in disease-specific survival. In a population-based, retrospective cohort study, 28,220 patients in the SEER-Medicare database diagnosed with differentiated thyroid cancer between 1998 and 2013 were followed-up for a median of 69 months. During the period 1998–2013, incident cancer, imaging and treatment for recurrence all increased significantly (rate ratio (RR) 1.05, 1.13 and 1.01, respectively); mortality was not significantly changed (RR 0.98). Neck ultrasonography increased the likelihood of additional surgery (OR 2.30) and ^{131}I treatment (OR 1.45); radioiodine scanning increased the likelihood of additional surgery (OR 3.39), ^{131}I treatment (OR 17.83) and radiotherapy (OR 1.89); and PET increased the likelihood of additional surgery (OR 2.31), ^{131}I treatment (OR 2.13) and radiotherapy (OR 4.98). Disease-specific survival was unaffected by use of neck ultrasonography and PET; however, radioiodine scanning was associated with improved disease-specific survival (HR 0.7).

ORIGINAL ARTICLE Banerjee M. *et al.* Use of imaging tests after primary treatment of thyroid cancer in the United States: population based retrospective cohort study evaluating death and recurrence. *BMJ* **354**, i3839 (2016)