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IN BRIEF

BONE

Vitamin D supplementation is ineffective in fall prevention

Trial sequential meta-analysis of data from 20 existing randomized controlled trials that included a total of 29,535 participants showed that supplementation with vitamin D does not result in a reduction of the risk of falls by >15%. The effect estimate of vitamin D supplementation, with and without calcium, on falls lay within the futility boundary. The authors state that their results suggest that further trials investigating these effects are unwarranted.

Original article Bolland, M. J. *et al.* Vitamin D supplementation and falls: a trial sequential meta-analysis. *Lancet Diabetes Endocrinol.* doi:10.1016/S2213-8587(14)70068-3

REPRODUCTIVE ENDOCRINOLOGY

Excessive fetal growth and restriction of fetal growth are associated with increased risk of stillbirth

A new study reports that either large for gestational age (LGA) or small for gestational age (SGA) fetal growth abnormalities are associated with an increased risk of stillbirth. The population-based case-control study analyzed all stillbirths ($n=527$) and a representative sample of singleton live births ($n=1,821$) in 59 hospitals across five geographic areas of the USA. The severity of SGA or LGA abnormalities during pregnancy (<5th and >95th growth percentiles, respectively) increased the risk of stillbirth in the sample analysed.

Original article Bukowski, R. *et al.* Fetal growth and risk of stillbirth: a population-based case-control study. *PLoS Med.* doi:10.1371/journal.pmed.1001633

NEUROENDOCRINE CANCER

Newly identified genetic mutations are associated with distinct adrenal tumour subtypes

Integrated genomic analysis has revealed two distinct molecular subsets of adrenocortical carcinomas (ACCs) with opposite clinical outcomes. Exome sequencing and single nucleotide polymorphism array analyses were performed on 45 ACCs and the findings validated in an independent cohort of 77 ACCs. Novel mutations were identified in genes previously not associated with ACCs, including *ZNRF3*, *DAXX*, *TERT* and *MED12*. A group of ACCs with poor outcomes harboured multiple genetic mutations and changes in DNA methylation, whereas ACCs with good prognosis were characterized by specific deregulation of two microRNA clusters.

Original article Assié, G. *et al.* Integrated genomic characterization of adrenocortical carcinoma. *Nat. Genet.* doi:10.1038/ng.2953

NUTRITION

Dietary fibre acts in the brain to directly suppress appetite

Short-chain fatty acid acetate, which is an end-product of fibre fermentation by gut microbes, crosses the blood-brain barrier and induces a neuronal activation pattern in the hypothalamus that is consistent with appetite suppression. Mice that were fed fermentable carbohydrates or that were administered pure acetate consumed less food and demonstrated reduced weight gain. These findings suggest that weight-loss effects associated with a high-fibre diet might be mediated independently of the release of anorectic hormones, such as peptide YY and GLP-1, from the gut.

Original article Frost, G. *et al.* The short-chain fatty acid acetate reduces appetite via a central homeostatic mechanism. *Nat. Commun.* doi:10.1038/ncomms4611