

Multiple logistic regression analysis revealed that the only independent factor increasing the risk of cognitive decline was natural logarithm urinary albumin-to-creatinine ratio (OR 1.37, 95% CI 1.05–1.78;  $P=0.021$ ). On the other hand, treatment with angiotensin-converting enzyme inhibitors or angiotensin receptor blockers was associated with decreased risk of cognitive decline as compared with untreated participants (OR 0.28, 95% CI 0.12–0.65;  $P=0.003$ ).

The authors conclude that increased urinary albumin excretion is a predictor for cognitive decline in elderly people with type 2 diabetes mellitus, probably explained by its detrimental effect on vascular health. Drugs inhibiting the renin–angiotensin–aldosterone system decrease the risk of cognitive decline in this patient population, but the mechanism of this protective effect is yet to be established.

**Original article** Bruce DG *et al.* (2008) Predictors of cognitive decline in older people with diabetes. *Diabetes Care* [doi:10.2337/dc08-0562]

## Contribution of genetic factors to type 1 diabetes has changed but not decreased

The incidence of childhood-onset type 1 diabetes mellitus (T1DM) has been increasing for decades. Fourlanos and colleagues investigated the contribution of environmental versus hereditary factors (in particular the human leukocyte antigen [HLA] class II DRB1 genotype) to this rising incidence.

The study included 462 Australian people of white origin, diagnosed with T1DM before age 18 years between 1950 and 2005. Decade of birth, age at diagnosis, and HLA-DRB1 genotype were determined in all participants. The mean age at diagnosis ( $8.5 \pm 4.5$  years) did not change over decades. Changes were observed, however, in the frequency of the genotype conferring the highest risk, DR3,4, and of intermediate-risk genotypes DR4,X and DR3,X. The proportion of participants carrying the DR3,4 allele was 79% in the group born between 1950 and 1969 and 28% among those born between 2000 and 2005 ( $P<0.0001$ ). The combined frequency of DR4,X and DR3,X increased from 20% to 48% during the same period ( $P=0.0002$ ). Moreover, in those carrying intermediate risk genotypes (DR4,4, DR3,3, DR4,X or DR3,X), age at diagnosis decreased over decades. The frequency

of the lowest-risk genotype, DRX,X was  $\leq 3\%$  in all cohorts.

These data imply that the main reason for the rising incidence of T1DM is the increasing frequency of intermediate-risk HLA-DRB1 genotypes, which have a greater penetrance in the 'diabetogenic' environment of our era than in previous decades.

**Original article** Fourlanos S *et al.* (2008) The rising incidence of type 1 diabetes is accounted for by cases with lower-risk human leukocyte antigen genotypes. *Diabetes Care* 31: 1546–1549

## Urban air pollution is a risk factor for vitamin D deficiency in postmenopausal women

Cutaneous vitamin D synthesis might be affected by levels of air pollution, in particular the common urban air pollutant tropospheric ozone, which absorbs solar ultraviolet B photons. Manicourt and Devogelaer compared white postmenopausal women living in a rural setting with those living in an urban environment to determine whether ozone air pollution affects vitamin D levels.

Participants were recruited in June and July 2006 from a rheumatology outpatient clinic and asked to complete questionnaires on sun exposure in the previous 6 weeks. Blood samples were tested for serum levels of 25-hydroxyvitamin D, parathyroid hormone, calcium and other markers. Mean tropospheric ozone content for the study period was estimated based on values reported by Brussels state agencies.

Mean urban tropospheric ozone levels were three times higher than rural levels ( $80.4 \pm 18.2 \mu\text{g}/\text{m}^3$  vs  $27 \pm 10 \mu\text{g}/\text{m}^3$ ). Although the mean sun exposure of urban residents was 1.3 times higher than that of rural residents, more had low vitamin D levels (32 of 38 vs 18 of 47 with 25-hydroxyvitamin D  $<75$  nmol/l). An inverse correlation was seen between serum 25-hydroxyvitamin D and parathyroid hormone levels, and 25 of 40 women with 25-hydroxyvitamin D  $<60$  nmol/l had secondary hyperparathyroidism.

High tropospheric ozone levels seem to reduce the efficiency of cutaneous vitamin D synthesis and increase the risk of impaired bone health and calcium metabolism in postmenopausal women.

**Original article** Manicourt DH and Devogelaer JP (2008) Urban tropospheric ozone increases the prevalence of vitamin D deficiency among Belgian postmenopausal women with outdoor activities during summer. *J Clin Endocrinol Metab* [doi:10.1210/jc.2007-2663]