

# MINERVA

Healthy volunteers who consent to participate in clinical trials show a disconcerting tendency to forget the risks of the trial they've signed up for (*QJM* 2008;101:625-9). Results of a questionnaire designed to test the recall of 82 volunteers, of whom 72 had university level education and 49 were clinical medical students, showed that just 10% could remember the names of the three drugs being tested. The maximum number of risks that were recalled correctly was six out of 23. Only one participant failed to recall the exact value of the inconvenience payment they were due to receive.

Can maths predict who will develop high blood pressure? Arterial catecholamine concentrations were measured for 99 men, at rest, after performing mental arithmetic and while undergoing a stressful laboratory test that induced an alpha-adrenergic vasoconstriction. Their resting blood pressures were taken 18 years later. The researchers conclude that sympathetic nervous activity during mental arithmetic predicts future blood pressure and is independent of baseline blood pressure readings and family history (*Hypertension* 2008;52:336-41).

An in vitro study of what happens when local anaesthetics are injected around human articular chondrocytes has found a worrying propensity for them to die. The formulations used for the experiment were typical of the sort used in intra-articular pain pumps. In the study 0.25% and 0.5% bupivacaine caused minimal necrosis of the chondrocytes when applied for up to 48 hours, but all anaesthetics containing adrenaline (epinephrine) turned out to be chondrotoxic and should therefore be avoided in pain pumps (*American Journal of Sports Medicine* 2008;36:1484-8).

Psychotropic medication comes with a risk of inducing serious ventricular arrhythmias and sudden death, so it's important that the doctors who prescribe them can spot the signs of impending problems, especially as automated electrocardiography machines do not reliably calculate QT intervals. Sadly, only 5% of the sample of 62 psychiatrists at various stages of their professional training correctly identified a corrected QT interval (QTc) on an electrocardiogram. Even identifying the rate proved challenging for many, with senior house officers performing better than consultants (*Psychiatric Bulletin* 2008;32:291-4).



A secretary in the surgical clinic was seen wearing a bandage around her right forearm. Inquiries revealed that she had been wearing the bandage on and off for about 10 years for intermittent profuse local perspiration of the ulnar side of the right forearm. The perspiration patterns of palms, armpits, and soles were normal. Neurological examination was unremarkable, as were electromyography and skin biopsy. Her complaints were successfully treated with botulinum toxin A injections. Palmar and plantar hyperhidrosis are well known dermal conditions, and the pathogenesis of primary hyperhidrosis is unknown. Secondary hyperhidrosis may be caused by conditions such as endocrinopathies, neoplasms, or medication.

**M W G A Bronkhorst** (mbronkhorst@bronovo.nl), consultant, **L H Bouwman**, specialist registrar, Department of Surgery, Bronovo Hospital, Bronovolaan 5, 2597 AX Den Haag, Netherlands  
Patient consent obtained.

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A new study has found that smoking and adverse birth outcomes in a previous pregnancy affects subsequent pregnancies. Researchers found that women who smoked during a pregnancy and continued to smoke during their next pregnancy were more likely to have poor pregnancy outcomes than others who did not change their smoking behaviour. Those who stopped smoking before their next pregnancy decreased the chance of a preterm birth and a low birthweight baby. The risks were higher among mothers who remained heavy smokers during their next pregnancy than among those who remained moderate smokers (*BJOG* published online 12 August 2008, doi: 0.1111/j.1471-0528.2008.01864.x).

Overcrowding on hospital wards has adverse psychological effects on staff. A Finnish study found that working longer than six months on wards that had an average bed occupancy rate more than 10% higher than the recommended limit was associated with new use of antidepressants by the staff. Researchers say the results follow a dose-response curve: the higher the bed occupancy, the greater the likelihood of antidepressant use (*American Journal of Psychiatry* published online 1 August 2008, doi: 10.1176/appi.ajp.2008.07121929).

A retrospective study of 321 patients with breast cancer who had been treated with bisphosphonates for osteoporosis or metastatic bone disease suggests that a significant proportion of them had occult vitamin D deficiency. Sixty five per cent of the patients had had their calcidiol (25-hydroxyvitamin D) levels checked at least once, but of these, 27% had calcidiol levels under 20 ng/ml. Vitamin D deficiency is common and needs to be identified so that the appropriate dose of vitamin D supplementation can be administered (*The Oncologist* 2008;13:821-7).

Mice unable to produce serotonin seem to experience less anxiety but retain fearful memories for a longer period than normal mice (*Proceedings of the National Academy of Sciences* 2008;105:11981-6). Control mice and knockout mice lacking serotonin were placed in environments that induced fear. The knockout mice wandered around the open section of a raised maze in a more relaxed state than the controls, but when the feet of both groups of mice received an electric shock in a special cage, the knockout mice retained memories of the treatment cage longer than the controls. Subsequent cerebral injections of serotonin eliminated the "stressed" behaviour.

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