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Paroxetine reduces hot flushes
Menopausal women battling hot flashes might have a new weapon to add to their arsenal: paroxetine, say investigators in *JAMA* (2003; 289: 2827–34). In a study of 165 menopausal women, researchers from the Women’s Health Initiative study found that a slow-release form of the antidepressant, paroxetine, reduced hot flushes by up to 65% (3-3 flashes per day). Hot flushes traditionally have been treated with oestrogen and progestagen supplements, which can reduce their frequency by 80–90%, but can increase the risk of myocardial infarction, stroke, blood clots, and breast cancer.

New diabetes drug target
Scientists have identified a molecule that might be a useful drug target for type 2 diabetes, according to research in *Science* (2003; 300: 1574–77). The investigators found that expression of the molecule TRB3 is induced under fasting conditions and the molecule disrupts insulin signalling in mice by binding to the enzyme Akt, which stops the liver from producing glucose when this sugar is available from food. Thus, the investigators believe that by interfering with Akt activation, TRB3 contributes to insulin resistance in individuals who are susceptible to type 2 diabetes.

Treatment for back pain
Spinal manipulation is better than sham therapies for lower back pain but is neither better nor worse than conventional treatments, say investigators in *Ann Intern Med* (2003; 138: 871–81). The findings were the result of a meta-analysis of 39 randomised, controlled trials including 5486 patients. In a review of the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for persistent back pain (2003; 138: 898–906) another group of investigators found that massage had some benefit; spinal manipulative therapy had small clinical benefits equivalent to those of pain-killing drugs, physical therapy or back exercises; and that the effectiveness of acupuncture remains unclear.

Breast cancer and heart attacks
Elderly women who have survived early stage breast cancer are significantly less likely to have an acute myocardial infarction, than women who do not have histories of breast cancer, according to research in *Cancer* (July 1). The investigators analysed data from 5980 women with a history of early stage breast cancer and 23 165 women without a history of breast cancer aged 67 years or older. They found that the risk to first acute myocardial infarction for breast cancer survivors was 34% less than women without a history of breast cancer after controlling for socioeconomic status, geographic region, and comorbidity.

Turning stem cells into neurons
The fate of embryonic stem cells might be controlled by the molecule TWS119, claim researchers in *Proc Natl Acad Sci* (published online June 2, DOI: 10.1073/pnas.0732087100). The investigators inserted a reporter gene encoding luciferase downstream of the promoter sequence of a gene that is only expressed in neuronal cells. They found that a small molecule called TWS119 seems to induce neurogenesis in embryonic stem cells by binding to the multifunctional signalling enzyme glycogen synthase kinase-3β, suggesting that it is probably involved in the molecular mechanism that controls the fate of stem cells.

Lentiviral vectors for cancer
A lentiviral vaccine produces a stronger immune response in mice than transferred transduced dendritic cells or peptide/adjuvant vaccination, say investigators in *J Clin Invest* (2003; 111: 1673–81). In a cost-effectiveness analysis, the researchers showed that the time-consuming and costly steps used to elicit immune responses through transfer of dendritic cells manipulated ex vivo could be replaced by the much simpler direct in-vivo administration of antigen recombinant lentivectors.

Laboratory test for SARS
The US Centers for Disease Control and Prevention (CDC) is offering a new experimental laboratory test for patients suspected of being infected with the SARS virus to about 100 specialised laboratories around the USA. The test uses PCR technology to detect presence of the coronavirus, a procedure that is much quicker than the standard method of growing the organism in cell culture, which takes several days or up to several weeks.

Mutations cause skin cancers
People with hereditary, but not sporadic melanoma might be especially sensitive to sun exposure because they have high rate of mutations induced by ultraviolet light, say investigators in *J Natl Cancer Inst* (2003; 95: 790–98). The investigators assessed the frequency of NRAS mutations in various hereditary and sporadic (non-hereditary) melanomas. They identified NRAS mutations in 95% of primary hereditary melanomas but in only 10% of sporadic melanomas. Of the 20 primary hereditary melanomas with NRAS mutations, 19 were in occasionally or continually sun-exposed parts of the body, suggesting that exposure to UV light is associated with activation of NRAS mutations.

Treating arthritis of the spine
Combination treatment with etanercept and non-steroidal anti-inflammatory drugs (NSAIDs) greatly reduces the disease activity of ankylosing spondylitis, say researchers in *Arthritis Rheum* (2003; 48: 1667–75). In a 6-month clinical trial of 30 men with active ankylosing spondylitis, researchers found that 25 g etanercept twice a week was effective in treating the progression of the inflammatory characteristics of the disease. Before and throughout the study, the patients were given NSAIDs, but all other drugs were discontinued.