Short cuts

What's new in the other general journals

Fat and thin people fail to guess the calorie content of large meals

We all tend to underestimate the calorie content of what we eat. But it's been clear for some time that people who are overweight tend to underestimate more than people of normal weight, a bias that's disastrous for weight control. Doctors have always assumed that fat people are simply lying to themselves about what they eat, and by extension lying to the people trying to help them. Two recent experiments, however, show that it's meal size, not food psychology that counts. Both indicate that people, whatever their weight, find it harder to guess the calorie content of large portions than small ones. A sample of diners in fast food outlets in the US got it almost exactly right for small portions, but underestimated the calorie content of larger portions by 38%. University students given 15 pre-prepared meals to estimate did the same, underestimating the larger portions by over a fifth.

If everyone makes the same mistakes, but overweight people eat more large portions, they will seem to be less accurate than people of normal weight. One solution would be a calorie count beside each meal on the menu. But it would be easier, say the authors, to advise people to take each small item separately (chips, burger, drink) rather than trying to guess the calorie content of the whole meal at once.

Ann Intern Med 2006;145:326-32

Needlestick injuries are more common after a night on call

Interns working in US hospitals are more likely to get needlestick or scalpel injuries during extended shifts, a study has found. They are also more likely to be injured at night. 2737 interns reported the percutaneous injuries in monthly web based surveys for one year, with an average monthly response rate of 1548/2737 or 57%. For one year there were 0.029 injuries per intern per month.

Compared with a normal day, the odds of an injury went up by 60% during the day after a busy night on call (1.31/1000 opportunities *v* 0.76/1000 opportunities, respectively; odds ratio, 1.61; 95% confidence interval, 1.46 to 1.78), and more than doubled at night (1.48/1000 opportunities *v* 0.70/1000 opportunities; odds ratio, 2.04; 1.98 to 2.11). Tiredness was significantly associated with injuries during both high risk periods. Daytime injuries during long shifts occurred after an average of 29 hours at work. Surgery, pathology, and obstetrics were the riskiest residency programmes in this study.

These findings are worrying given the risk of blood borne infections associated with scalpel and needlestick injuries, say the authors. They are consistent with previous research showing that doctors who are deprived of sleep are more likely to crash their car, make more mistakes during simulated driving, and perform tasks about as well as someone with a blood alcohol concentration of 40-50 mg/100 ml.

JAMA 2006;296:1055-62

Antiangiogenic proteins herald the onset of pre-eclampsia

The search for a predictive test for pre-eclampsia has uncovered two potential new candidates. Both are proteins that interfere with angiogenesis, and researchers think that together they could be useful biomarkers for a disease that complicates up to one in 20 pregnancies in developed countries. Using blood samples from an old randomised trial testing calcium as a preventive agent, researchers found that serum concentrations of the protein endoglin begin to rise two to three months before the clinical signs of pre-eclampsia appear. The increase was accompanied by similar increases in the angiogenic protein fms-like tyrosine kinase 1 (sFlt1). The two proteins together were significantly

better predictors of disease than either one alone. The proteins were also linked to gestational hypertension, but to a lesser extent.

The analyses in this study were cross sectional and the data retrospective, so it's too early to say whether or not these proteins cause pre-eclampsia, but the authors say their findings are convincing enough for a closer look in a prospective longitudinal study. Predictive tests would be particularly valuable in developing countries, where pre-eclampsia and related conditions such as HELLP (haemolysis, elevated liver enzymes, and low platelets) syndrome are a leading cause of maternal and fetal death.

N Engl J Med 2006;355:992-1005

Medical errors are bad for doctors too

Most research on medical errors focuses on what they do to patients. But medical errors have profound effects on doctors too, according to a longitudinal study from the Mayo Clinic in the US. In a series of quarterly surveys over three years, 34% of 184 residents in internal medicine reported at least one serious mistake. A mean of 14.7% reported an error each quarter. Medical errors were associated with burnout, a reduced quality of life, and depression. Nearly two thirds of the residents who reported mistakes screened positive for depression at some time during the study (63.3% of 62), almost double the rate of depression in other residents (33% of 122, $P < 0.001$).

The study also indicates that mistakes can be self-perpetuating, leading to a cycle of personal distress that increases the risk of further serious mistakes. Symptoms of burnout, including depersonalisation and emotional exhaustion in one survey were linked to a greater risk of medical errors in the next one. Each extra point on the depersonalisation score (0-30), for example, increased the odds of a future mistake by 10%. The researchers found a similar link between loss of empathy and future medical errors made by the residents.

JAMA 2006;296:1071-8

There's more to olive oil than monounsaturated fat

Olive oil is good for your heart. But it's still unclear which components of the oil are responsible—the monounsaturated fat oleic acid, the antioxidant polyphenols, or a combination of both. To find out more, researchers did a crossover trial testing the biochemical effects of olive oils that were high, medium, or low in polyphenols, but otherwise the same. Virgin (unprocessed) olive oil contains the most polyphenols, refined olive oil contains the least. Researchers mixed the two to obtain an intermediate olive oil.

Two hundred healthy European men took each of the three oils (25 ml a day) for three weeks, in random sequence. The researchers found a linear relationship between the phenolic content of the olive oil and serum concentrations of high density lipoprotein cholesterol in the volunteers—concentrations were highest after the virgin olive oil, and lowest after the refined oil. Markers of oxidative stress went in the opposite direction.

Although the changes were relatively small, they were significant and suggest that olive oil is more than just a monounsaturated fat. The polyphenols have beneficial effects of their own. Exactly how much they reduce the risk of heart disease remains to be seen, however.

Ann Int Med 2006;145:333-41

Enoxaparin could be a more predictable alternative to unfractionated heparin during elective PCI

People with acute coronary syndromes who need a percutaneous coronary intervention (PCI) must have anticoagulation.

Unfractionated heparin is the standard choice recommended by authoritative national guidelines. But researchers are always looking for something better, a more predictable anticoagulant that can reduce the risk of bleeding, or at least take it no higher. Enoxaparin seemed to do both in a randomised trial. A bolus of 0.5 mg/kg reduced the incidence of major and minor bleeding compared with unfractionated heparin (5.9% v 8.5%; absolute difference -2.6; 95% confidence interval -4.7 to -0.6; $P = 0.01$) in 3528 patients having an elective procedure. A slightly larger dose (0.75 mg/kg) reduced the risk of major but not minor bleeding. Both doses were better at achieving target levels of anticoagulation than unfractionated heparin (lower dose 79%, higher dose 92%, heparin 20%, $P < 0.001$).

But a linked editorial has reservations (pp 1058-60). An apparent excess of deaths among patients given the lower dose of enoxaparin led the data monitoring committee to end recruitment to this arm of the trial. Although the excess was not significant, at least half the deaths were potentially related to treatment, and the overall death rate in this group (1%) was higher than would be expected for low risk patients. There were no excess deaths among patients given the higher dose of enoxaparin.

N Engl J Med 2006;355:1006-17

Enzyme predicts response to chemotherapy in lung cancer

Cisplatin based chemotherapy can prolong survival for patients with resectable non-small cell lung cancers, but the benefits are modest and the side effects serious and unpleasant. Could chemotherapy be reserved for those most likely to benefit? One option is to stratify patients according to whether or not their tumours express ERCC1 (excision repair cross

complementation group 1), an enzyme that helps DNA to repair itself and so resist the action of cisplatin. Small studies have already indicated that the gene coding for this protein is a marker for cisplatin resistance, and a bigger study of tumour specimens from a parent randomised trial has confirmed it. The 426 (56%) participants without ERCC1 in their tumours benefited substantially from cisplatin based chemotherapy; they were less likely to die than controls who did not have chemotherapy (adjusted hazard ratio for death, 0.65; 95% confidence interval 0.50 to 0.86; $P = 0.002$), they survived a median of 14 months longer, and they also had longer disease free survival. The remaining participants, whose tumours contained the enzyme, were no more likely to survive than controls (adjusted hazard ratio for death, 1.14; 95% CI, 0.84 to 1.55; $P = 0.40$).

N Engl J Med 2006; 355:983-91

Treatment for premature ejaculation exploits a side effect of SSRIs

Dapoxetine is a short acting selective serotonin reuptake inhibitor (SSRI), the first drug developed specifically for men with premature ejaculation. SSRIs are well known for their potential to delay ejaculation and, unlike other drugs in this class, dapoxetine acts fast enough and has a short enough half life to be used on demand. Two large randomised trials indicate that it can work. Taken between one and three hours before sex, 30 mg or 60 mg doses of dapoxetine delayed ejaculation by significantly more than placebo, trebling the intravaginal ejaculatory latency time from just under one minute to just under (30 mg) or just over (60 mg) 3 minutes. Trial participants and their partners both noticed the difference—men taking either dose said they had more control over ejaculation, and both they and their partners reported more satisfying sex than those in the placebo group.

The trials, which were designed, conducted, and analysed by the manufacturers, lasted 12 weeks and included a total of 2614 mainly young and middle aged men with severe premature ejaculation. Side effects were generally mild, but were commonly reported by men taking the higher dose—a fifth said the 60 mg dose made them feel sick, and between 6% and 7% reported diarrhoea, headache, or dizziness. One in 20 of the participants stopped their study drugs because of side effects.

Lancet 2006;368:929-37

Alison Tonks *associate editor*
 atonks@bmj.com