Abstracts

Effect of dietary protein content on weight gain, energy expenditure, and body composition during overeating

The role of diet composition in response to overeating and energy dissipation in humans is unclear. The authors of this paper evaluated the effects of overconsumption of low-, normal-, and high-protein diets on weight gain, energy expenditure, and body composition.

Researchers used a single-blind, randomised controlled trial of 25 American healthy, weight-stable male and female volunteers, aged 18 - 35 years, with a body mass index between 19 and 30. The first participant was admitted to the inpatient metabolic unit in June 2005 and the last in October 2007.

After consuming a weight-stabilising diet for 13 - 25 days, participants were randomised to diets containing 5% of energy from protein (low protein), 15% (normal protein), or 25% (high protein), which they were overfed during the last 8 weeks of their 10 - 12-week stay in the inpatient metabolic unit. Compared with energy intake during the weight stabilisation period, the protein diets provided approximately 40% more energy intake, which corresponds to 954 kcal/d (95% CI, 884 - 1 022 kcal/d).

Body composition was measured by dual-energy X-ray absorptiometry bi-weekly, resting energy expenditure was measured weekly by ventilated hood, and total energy expenditure by doubly labelled water prior to the overeating and weight stabilisation periods and at weeks 7 - 8.

Overeating produced significantly less weight gain in the low-protein diet group (3.16 kg; 95% CI, 1.88 - 4.44 kg) compared with the normal-protein diet group (6.05 kg; 95% CI, 4.84 - 7.26 kg) or the high-protein diet group (6.51 kg; 95% CI, 5.23 - 7.79 kg) (p=0.002). Body fat increased similarly in all 3 protein diet groups and represented 50% to more than 90% of the excess stored calories. Resting energy expenditure, total energy expenditure, and body protein did not increase during overfeeding with the low-protein diet. In contrast, resting energy expenditure (normal-protein diet: 160 kcal/d (95% CI, 102 - 218 kcal/d); high-protein diet: 227 kcal/d (95% CI, 165 - 289 kcal/d)) and body protein (lean body mass) (normal protein diet: 2.87 kg (95% CI, 2.11 - 3.62 kg); high-protein diet: 3.18 kg (95% CI, 2.37 - 3.98 kg)) increased significantly with the normal- and high-protein diets.

Among persons living in a controlled setting, calories alone account for the increase in fat; protein affected energy expenditure and storage of lean body mass, but not body fat storage.


Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis

Amie Wilson and her colleagues assessed the effectiveness of strategies incorporating training and support of traditional birth attendants on the outcomes of perinatal, neonatal, and maternal death in developing countries using a systematic review with meta-analysis.

The authors identified 6 cluster randomised controlled trials (N=138 549) and 7 non-randomised controlled studies (N=72 225) that investigated strategies incorporating training and support of traditional birth attendants. All 6 randomised controlled trials found a reduction in adverse perinatal outcomes; our meta-analysis showed significant reductions in perinatal death (relative risk 0.76, 95% confidence interval 0.64 - 0.88, p<0.001; number needed to treat 35, 24 - 70) and neonatal death (0.79, 0.69 - 0.88, p<0.001; 98, 66 - 170). Meta-analysis of the non-randomised studies also showed a significant reduction in perinatal mortality (0.70, 0.57 - 0.84, p<0.001; 48, 32 - 96) and neonatal mortality (0.61, 0.48 - 0.75, p<0.001; 96, 65 - 168). Six studies reported on maternal mortality and our meta-analysis showed a non-significant reduction (three randomised trials, relative risk 0.79, 0.53 - 1.05, p=0.12; three non-randomised studies, 0.80, 0.44 - 1.15, p=0.26).

The conclusion was that perinatal and neonatal deaths are significantly reduced with strategies incorporating training and support of traditional birth attendants.


Hormonal contraceptives for nuns?

Two cancer researchers from Australia have urged the Catholic church to make oral contraceptive pills freely available to nuns to help to protect them against reproductive cancers. Doctors first noticed a link between...
covenant life and breast cancer in 1713, and
by 1950 it was clear that nuns and other
 celibate women also had a high risk of
 ovarian and uterine cancers.

Catholic nuns have no children and no need
to breastfeed. They have more menstrual
cycles between menarche and menopause
than women who have children, write the
researchers. We now know that menstrual
cycles contribute to risk of breast cancer,
uterine cancer, and ovarian cancer. We
also know that women who use oral
contraceptives have significantly fewer
uterine and ovarian cancers than non-
users, a protection that lasts for around
two decades. The world’s 94,790 nuns
should be encouraged to take advantage
of this protection, say the experts. Oral
contraceptive pills do not help to prevent
breast cancer, but are associated with
significant reductions in overall mortality in
epidemiological studies. Pills can save lives.
Although the Catholic church explicitly bans
all forms of contraception except abstinence,
it does allow followers to take therapeutic
agents to ‘cure organic diseases, even
though they also have a contraceptive effect.’

Hormonal contraceptives taken by celibate
nuns would surely fall into this category, say
the researchers. Nuns pay an unnecessarily
high price for their childlessness, a fact that
deserves wider recognition.

Britt K, Short R. Lancet 2011. doi:10.1016/S0140-
6736(11)61746-7.

Do-it-yourself anticoagulation
can be safe and effective

A new meta-analysis has confirmed that
many adults can safely monitor their
own oral anticoagulation. In pooled
analyses, self-monitoring reduced the
risk of thrombo-embolism by nearly 50%
hazard ratio 0.51, 95% CI 0.31 - 0.85) when compared with monitoring by
doctors in primary care or anticoagulation
clinics. Adults who monitored their own
international normalised ratio had no more
major haemorrhages than controls (0.88,
0.74 - 1.06) and comparable mortality (0.82,
0.62 - 1.09).

In smaller but more detailed analyses, self-
monitoring seemed to work best for adults
under 55 years (0.33, 0.17 - 0.66) and those
with mechanical heart valves. A linked
comment says these patients should be given
the chance to take their own tests and make
the required dose adjustments, because self-
testing alone looked less effective than full
self-management.

Benefits were less clear-cut for older adults
taking warfarin for atrial fibrillation,
although the authors found no evidence
of serious harm associated with self-
monitoring in this group of patients.

They analysed individual patient data from
11 trials but were unable to access data from
10 more. Participants were carefully selected,
so self-monitoring won’t be an option
for everyone, say the authors. Exclusions
included adults with poor cognition and
those without the manual dexterity to cope
with a finger stick procedure.

Heneghan C, et al. The Lancet. doi:10.1016/S0140-
6736(11)61294-4.