# Abstracts

## Weight training safe for women at risk of lymphoedema

A new trial should lay to rest any lingering doubts about the safety of controlled weight lifting for women at risk of lymphoedema after treatment for breast cancer, say researchers. Women introduced to weight training slowly over 13 weeks had no more new-onset lymphoedema than controls given usual care. In fact, they had less (11% (8/72) v. 17% (13/75); cumulative incidence ratio 0.64, 95% CI 0.28 - 1.45), although the trial wasn't designed to look at effectiveness, just safety, and the difference wasn't significant.

Participants joined the trial an average of 3 years after their cancer diagnosis. All had surgery, which included removal of between 2 and 26 lymph nodes. Most also had chemotherapy and radiotherapy. Women assigned to weight training started slowly with specially trained fitness instructors at a local gym. Twice a week they did bicep curls, triceps pushdowns, seated rowing, and lower body exercises. Instructors gradually increased the workload, guided by symptoms. Attendance was good, and the women got stronger and lost more body fat than controls during the year.

These findings should reassure women at risk of lymphoedema that resistance training is safe, so long as you take it carefully. Lifting weights may even help prevent lymphoedema, and bigger trials should now be done to explore this possibility, say the researchers.

Schmitz KH *et al. JAMA* 2010;304:2699-2705.

## Small benefits at best from echinacea in common colds

Echinacea for the common cold has been assessed in hundreds of studies, including more than a dozen randomised trials and several meta-analyses. We are still unsure of the efficacy of echinacea products, however, because the evidence on whether they relieve a common cold is conflicting and many studies are of poor quality.

A new trial aimed to clear up this uncertainty by randomising 719 people with a common cold to one of four arms – two blinded groups (placebo pills or echinacea pills) and two open label groups (no pills or echinacea pills). Echinacea was given in a dose of 10.2 g of dried root during the first 24 hours and 5.1 g during each of the next 4 days.

The blinded placebo pills group and the echinacea pills group did not significantly differ on any of the outcomes, which included severity of the cold (assessed twice daily by a validated self-reported questionnaire), and change in nasal wash neutrophil counts and serum levels of interleukin 8 (assessed at intake and 2 days later). A non-significant trend towards some effect of echinacea was seen though. Mean cold severity scores for the blinded echinacea group, unblinded echinacea group, placebo group, and no pill group were 236, 258, 264, and 286, respectively (maximum score 301), while duration of cold was 6.34, 6.76, 6.87, and 7.03 days, respectively.

The relative benefit with echinacea amounted to an average half-day reduction in the duration of a week-long cold, or a 10% reduction in overall cold severity. However, previous research by the same authors has shown that fewer than 1 in 4 people judge these benefits as worthwhile, given the costs and adverse effects. Individual choices about whether to use echinacea to treat a common cold should be guided by personal health values and preferences, as well as by the limited evidence available, conclude the authors.

Barrett B *et al. Ann Intern Med* 2010;153:769-777.

## Cardiovascular safety of non-steroidal anti-inflammatory drugs

The aim of this study was to analyse the available evidence on cardiovascular safety of non-steroidal anti-inflammatory drugs (NSAIDs).

The authors used a network meta-analysis. This included bibliographic databases, conference proceedings, study registers, the Food and Drug Administration website, reference lists of relevant articles, and reports citing relevant articles through the Science Citation Index (last update July 2009). Manufacturers of celecoxib and lumiracoxib provided additional data.

All large-scale randomised controlled trials comparing any NSAID with other NSAIDs or placebo were examined. Two investigators independently assessed eligibility.

The primary outcome was myocardial infarction. Secondary outcomes included stroke, death from cardiovascular disease, and death from any cause. Two investigators independently extracted data.

They included 31 trials in 116 429 patients with more than 115 000 patient years of follow-up. Patients were allocated to naproxen, ibuprofen, diclofenac, celecoxib, etoricoxib, rofecoxib, lumiracoxib, or placebo. Compared with placebo, rofecoxib was associated with the highest risk of myocardial infarction (rate ratio 2.12, 95% CI 1.26 - 3.56), followed by lumiracoxib (2.00, 0.71 - 6.21). Ibuprofen was associated with the highest risk of stroke (3.36, 1.00 - 11.6), followed by diclofenac (2.86, 1.09 - 8.36). Etoricoxib (4.07, 1.23 - 15.7) and diclofenac (3.98, 1.48 - 12.7) were associated with the highest risk of cardiovascular death.

The conclusions were that although uncertainty remains, little evidence exists to suggest that any of the investigated drugs are safe in cardiovascular terms. Naproxen seemed least harmful. Cardiovascular risk needs to be taken into account when prescribing any NSAID.

Trelle S *et al. BMJ* 2011; 342:c7086.

## Antibiotic resistance emerges after mass treatments with azithromycin

Liberal use of antibiotics encourages resistance, and researchers recently demonstrated this effect among Ethiopian communities taking part in a trial of azithromycin to control ocular trachoma. At the start of the trial, researchers grew resistant *Streptococcus pneumoniae* from 3.6% (95% CI 0.8 - 8.9%) of nasopharyngeal swabs taken from a random sample of children. After four mass treatments in a year, the prevalence of azithromycin resistance had risen to 46.9% (37.5 - 57.5%), significantly higher than the prevalence in control children, who received no azithromycin in the first year (9.2%, 6.7 - 13.3%). Mass treatments also seemed to encourage pneumococcal resistance to tetracycline and clindamycin, but not penicillin, a first-line treatment for *S. pneumoniae* in these communities.

Resistance emerges when antibiotics kill off non-resistant strains, leaving the field wide open for resistant strains to flourish by clonal expansion, say the authors. Ecological studies suggest that the effect is probably temporary. These children were treated more intensively than children in established mass treatment programmes for trachoma. The World Health Organization currently recommends annual treatments only, and these should continue, say the authors. They prevent *Chlamydia trachomatis* infections, protect eyesight, and may even save lives. The well-documented benefits far outweigh the uncertain risks associated with pneumococcal resistance to macrolide antibiotics.

Skalet AH *et al. PLoS Med* 2010;7:e1000377