

# News in Brief



## CARDIOVASCULAR BENEFIT OF REGULAR EXERCISE IN WOMEN

Cardiovascular benefit of regular exercise in women may depend more on improvements in inflammation and haemostasis than on improvements in weight.

Researchers (from Harvard and Brigham and Women's Hospital) analysed the outcomes for 27,055 participants in the Women's Health Study of low-dose aspirin and vitamin E for primary prevention of cardiovascular disease. The participants were apparently healthy female healthcare professionals, aged 45 years or older, and free of self-reported cardiovascular disease and cancer from 1992 to 1995. The mean follow-up was 10.9 years. There were 979 first cardiovascular disease events (mainly coronary heart disease events, with 266 ischaemic strokes).

It was found that weekly physical activity was associated with a 27% to 41% reduction in women's cardiovascular disease (CV) risk, with BMI changes contributing only 10%. Inflammatory and haemostatic biomarkers accounted for about one-third of the reduced risk while blood pressure effects accounted for about one-quarter of the risk reduction.

When activity was calculated in MET-hours (metabolic equivalent tasks) per week, instead of kcal per week, the results were similar. However, two factors became more important contributors to risk reduction: BMI (21.9%), and HbA1c and diabetes (12.2%).

It is to be noted that the mechanisms underlying the anti-inflammatory and haemostatic effects of exercise are not well defined. The remainder of the unexplained risk reduction could be due to unmeasured factors or the studied risk factors

if they were better measured. Moderate levels of exercise (at least 600 kcal per week, or the equivalent of just over two hours per week of brisk walking) lowers the risk of clinically important cardiovascular disease events. The results need to be confirmed for men.

From the study, we can see that there is a substantial cardiovascular benefit from regular exercise in women, and that exercise helps women reduce cardiovascular risk more through endothelial factors than weight loss.

(Source: Mora S, et al. Physical Activity and Reduced Risk of Cardiovascular Events. Potential Mediating Mechanisms. *Circulation* 2007; 116: doi:10.1161.)

## STRETCHING BEFORE AND AFTER EXERCISE

Stretching before or after exercise or a workout does not spare either athletes or weekend warriors from soreness one to three days later.

A study showed that stretching before exercise reduced soreness on the day after by 0.5 points on a 100-point scale, and after a workout by one point. The measures were not statistically significant. Effects of stretching on soreness were negligible up to 3 days later.

The authors (from the University of Sydney) based their claims on a systematic review and meta-analysis of 10 published studies of stretching either before or after athletic activity. The 10 studies included randomised or quasi-randomised studies of any pre- or post-exercise stretching technique conducted soon before or soon after exercise, designed to prevent or treat delayed-onset muscle soreness, and in which there was an assessment of muscle soreness or tenderness. Nine of the studies were performed in laboratory

settings with standardised exercise protocols. One study looked at post-exercise stretching in Australian-rules football players. All studies involved healthy adults.

Three looked at stretching before exercise, and seven looked at stretching after exercise. In two studies (both looked at after exercise stretching), there were repeated stretching sessions at intervals more than two hours. The duration of stretching in a single session was 40 to 600 seconds. All studies were small with 10 to 30 participants.

The authors felt that although the quality of the studies was generally poor, there was a high degree of consistency. The studies were not blinded and did not have an intention-to-treat analysis (meaning that the study would tend to create an exaggerated treatment effect, and the treatment effects detected were actually quite small.)

Further research into the effects of stretching on muscle soreness is not necessary, but it would be useful to conduct further trials of the effects of longer-term stretching programmes in community-based populations and for people with reduced flexibility.

There are also other justifications for stretching, the effects of which were not looked at, including to temporarily relieve soreness, to reduce risk of injury, to enhance athletic or sporting performance and to give a sense of well-being.

*(Source: Herbert RD, de Noronha M. Stretching to prevent or reduce muscle soreness after exercise. Cochrane Database of Systematic Reviews 2007, Issue 4. DOI: 10.1002/14651858.CD004577.pub2.)*

## BRISK WALKING FOR YOUR HEALTH

A brisk half-hour walk three times a week provides some short-term health benefits for sedentary adults after 12 weeks, including weight loss, improved fitness and cardiovascular benefits. There was also a significant reduction in systolic BP and weight, and an increase in functional capacity.

Few adults meet a minimum exercise recommendation of 30 minutes of exercise five days a week. An unsupervised three-month home-based programme of brisk walking for 30 minutes three days a week was better than nothing. Those who walked five days a week also showed a decrease in diastolic blood pressure.

The study, which was conducted by authors from Queen's University, Belfast, aimed to determine the short-term effects of walking at and below the current recommended exercise levels.

The authors randomised 106 healthy sedentary men and women, aged 40 to 61, to a three-month



walking programme. 93 completed the study. 44 participants walked briskly for 30 minutes three days a week and 42 participants five days a week. There were 20 in a sedentary control group. Participants could choose to walk in bouts of at least 10 minutes. Pedometers were used to record the number of steps taken. Blood samples were analysed for lipid levels, and waist and hip circumferences were measured. Functional capacity was measured by a 10-meter shuttle walk test, where participants walked between two cones to beeps of increasing frequency until they could no longer achieve the pace.

It is to be noted that the study has its limitations as the walking was self-reported and the pace was self-selected. There was objective measure of all activity undertaken during the study between the three-day and five-day group. The motivation of the walkers to improve was not studied and the study was not sex-stratified. More studies would be needed of the longer effects of low levels of exercise. Further studies of unsupervised home-based exercise also needs to be large enough so as to detect meaningful changes in a broad number of cardiovascular risk factors. ■

*(Source: Tully MA, et al. Randomised controlled trial of home-based walking programmes at and below current recommended levels of exercise in sedentary adults. J Epidemiol Community Health 2007; 61:778-783.)*