Exercising 7 1/2 Minutes a Week Fights Diabetes

CAN YOU SPARE about seven minutes a week to help ward off diabetes? A new Scottish clinical study suggests that spurts of high-intensity exercise can significantly improve factors such as insulin resistance and glucose tolerance linked to type 2 diabetes risk.

"The efficacy of a high-intensity exercise protocol, involving only about 250 calories of work each week, to substantially improve insulin action in young sedentary subjects is remarkable," concluded James A. Timmons, PhD, of Heriot-Watt University and colleagues in BMC Endocrine Disorders. "This novel time-efficient training paradigm can be used as a strategy to reduce metabolic risk factors in young and middle-aged sedentary populations who otherwise would not adhere to time-consuming traditional aerobic exercise regimens."

The researchers recruited 16 sedentary but otherwise healthy young men (plus eight controls) and put them through six training sessions over two weeks, totaling just 15 minutes of intense exercise and burning about 500 calories. Each every-other-day session consisted of four to six 30-second sprints on a stationary bicycle.

Among other measures, the men showed a 23% improvement in how active their bodies' insulin was in clearing glucose from the bloodstream. In followup research, the benefit appeared to last up to 10 days after the final round of intense exercise.

"This is such a brief amount of exercise you can do it without breaking a sweat," Timmons commented. "You can make just as big an effect on these particular diabetes-related risk factors by doing this as you can by doing hours and hours of endurance training each week."

By doing tense muscle contractions during such sprints, he explained, a person can enhance the ability of insulin to clear glucose from the bloodstream after eating. Because the brief exercise regimen doesn't burn many calories, however, it may not be effective against obesity, which itself is an important risk factor for diabetes.

People ages 20 to 40 who are in good health but not fit could give the exercises a try, Timmons said, by cycling intensely or running up stairs in four to six 30-second bouts, twice a week. Older people or those with health conditions should consult a physician and boost activity more gradually.

Phytosteros Added to Foods Work to Cut Bad Cholesterol

Do those phytosterols added to foods such as spreads really improve your cholesterol levels? A new review of 84 trials backs up previous science supporting these natural cholesterol fighters. In the combined studies, average intake of 2.15 grams of phytosterols daily was associated with a reduction in LDL ("bad") cholesterol of 8.8%. Moreover, the scientists established a continuous "dose-response" relationship—that is, higher doses of phytosterols were associated with greater reductions in LDL levels.

"Although no direct evidence is available yet for the ability of phytosterols to lower coronary-heart-disease incidence, the well-documented cholesterol-lowering effect of phytosterols is the basis for recommendations to include phytosterols into strategies to lower LDL-cholesterol concentrations," the researchers added, writing in the Journal of Nutrition.

The analysis concluded that there's no important difference between the two main types of phytosterols (sterols and stanols) or delivery in fat or non-fat foods or dairy vs. nondairy foods. Getting your phytosterols in multiple smaller portions throughout the day may be more effective than one big dose, though one daily dose still lowered cholesterol significantly. At higher doses the effect appeared to be greater from solid foods than from liquids, though researchers noted this finding may have little practical relevance for phytosterol doses usually consumed from enriched foods.

As you might guess from their name, "phytosterols" are chemically similar to cholesterol; they occur naturally in small amounts in the membranes of some plants. They were originally introduced in spreads, after the finding that stanols could be mixed in with margarine. Today, phytosterols can also be found in orange juice, mayonnaise, yogurt and yogurt smoothies, snack bars, cereals and other products, as well as in soft gel capsules.

The US Food and Drug Administration (FDA) allows such products to carry this health claim: "Diets low in saturated fat and cholesterol that include two servings of foods that provide a daily total of at least 3.4 grams of plant stanol esters in two meals may reduce the risk of heart disease."

The National Cholesterol Education Program states that 2-3 grams of plant sterols or stanols daily will reduce LDL cholesterol by 6%-15%, and recommends the daily consumption of 2 grams of phytosterols as part of its Therapeutic Lifestyle changes. The American Heart Association, in its 2006 diet and lifestyle recommendations, advised that maximal effects have been observed at intakes of about 2 grams per day. To sustain LDL reductions, individuals need to consume sterols or stanols daily.
