

Too Much Exercise: Studies Report J-Shaped Link Between Exercise and CVD Risks

Michael O'Riordan | May 16, 2014

HEIDELBERG, GERMANY and STOCKHOLM, SWEDEN — Two new studies published this week lend credence to the idea that when it comes to exercise, there apparently can be too much of a good thing.

In the first study, led by **Dr Nikola Drca** (Karolinska University Hospital, Stockholm, Sweden) and published online May 14, 2014 in *Heart*, investigators report that men who exercised for more than five hours per week when they were 30 years old had a significantly higher risk of developing atrial fibrillation later in life compared with men who exercised less^[1].

The report also showed that older adults who walked or rode their bicycle for about an hour per day had a significantly lower risk of atrial fibrillation compared with older adults who almost never participated in such recreational physical activity.

In the second study, led by **Dr Ute Mons** (German Cancer Research Center, Heidelberg, Germany) and also published in *Heart*, the researchers studied the association of self-reported physical activity in 1038 subjects with stable coronary heart disease and confirmed previous findings of an increased risk of adverse events among inactive patients^[2]. However, they also found that those who participated in daily "strenuous" physical activity had an increased risk of dying from cardiovascular causes.

"Our data indicated a reverse J-shaped association of physical activity, especially with cardiovascular mortality," write Mons and colleagues. "Both inactive and daily-active patients had increased hazards of mortality compared with the reference group of patients who were active two to four times per week, but with the hazards being highest in the inactive-patient group."

What to Make of the Findings?

In an editorial^[3], **Drs Eduard Guasch** and **Lluís Mont** (University of Barcelona, Spain) note that both studies are limited by the self-reported measurements of physical activity but still raise important clinical questions. For example, with the Mons et al study of ischemic heart disease patients, the results run counter to what is known.

"An increase in all-cause and cardiovascular mortality in the most active groups is the most challenging outcome of the study," write Guasch and Mont. While physical activity aggravating ischemic heart disease seems "counterintuitive," small studies have suggested it might be possible, they add. For those with existing disease, physical activity might contribute to a proinflammatory milieu.

Using data from the **KAROLA** study of German rehabilitation patients, Mons et al defined physical-activity intensity as exercising daily or at least five to six times per week. Participation declined over the 10-year follow-up period for those who exercised more often, while those who exercised two to four times per week remained relatively consistent.

"It remains unknown why some individuals develop deleterious effects when engaged in regular training while others remain unaffected," write the editorialists. "Exercise intensity, as well as the type of exercise, is clearly a major determinant."

Atrial Fibrillation Risks With Increasing Exercise

In the other paper, Drca examined the effect of physical activity of different types done at different ages on the risk of atrial fibrillation in 44 410 Swedish men aged 45 to 79 years of age. All patients completed a questionnaire that

assessed the time spent on physical activity at 15, 40, and 50 years of age.

After 12 years, men who exercised more than five hours per week at age 30 had a relative 19% higher risk of developing atrial fibrillation than 30-year-old men who exercised less than one hour per week. The risk persisted regardless of whether or not the exercise was continued. In fact, men who exercised more than five hours per week at age 30 but later quit exercising had a relative 49% higher risk of developing atrial fibrillation compared with those who exercised less at age 30 and also quit.

Walking or bicycling at baseline, defined as the time they completed the questionnaire (mean age 60 years), was associated with a relative 13% lower risk of developing atrial fibrillation compared with those who didn't walk or ride their bicycles.

In their paper, Drca et al emphasize the positive effects of physical activity and suggest doctors do the same with their patients. "Physical inactivity with a sedentary lifestyle is a far bigger health problem for the general population than excessive physical activity," they write. "However, frequent high-intensity exercise could be associated with negative health impact, and patients with such lifestyle should be informed."

For Guasch and Mont, the editorialists stress there is a need to communicate the limitations of the research because "a thin line separates accurate information and unnecessary alarmism leading to inactivity and consequent heart disease." These latest reports "serve to maximize the benefits obtained by regular exercise while preventing undesirable effects—just like all other drugs and therapies."

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References

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