

# AF Risk Plunges With Improving Cardio Fitness in Patients With Hypertension, Diabetes

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NEW YORK, NY — More research shows that cardiorespiratory fitness is associated with a progressively lower risk of atrial fibrillation (AF)—this time in middle-aged men with diabetes mellitus or hypertension<sup>1</sup>.

In a cohort of more than 4000 hypertensive and/or diabetic veterans who didn't have AF at baseline, there was a 29% lower risk of AF occurrence for every one-unit increase in peak metabolic equivalent of tasks (MET).

In addition, the risk was lowered by 58% in those considered "moderately fit" and by 74% in those considered "highly fit" compared with the least-fit group. Even those considered to be "low fit" had a 30% lower AF risk vs their least-fit peers.



**Dr Peter Kokkinos**

"These fitness levels are easily achievable through moderate daily exercise and physical activity. Just 30 minutes of a brisk walk regularly can really make a difference," Dr Peter Kokkinos (Veterans Affairs Medical Center, Washington, DC) told [heartwire](#) from Medscape. "The message is: doing normal, nonmarathon activity is healthy."

He presented the results at the [American Society of Hypertension \(ASH\) 2016 Annual Scientific Meeting](#).

## **A MET a Day?**

A larger study from the investigators was published in the May 2016 issue of *Mayo Clinical Proceedings*<sup>2</sup>. It included 5962 veterans, but did not split out patient information on hypertension and diabetes.

Within 8.3 years, 12% of the participants developed AF; but the risk was 21% lower for each 1-MET increase in exercise capacity (hazard ratio [HR] 0.79, 95% CI 0.76–0.82). Those at the highest fitness level had an HR of just 0.37, those at the next level down had an HR of 0.55, and those at the third level down had an HR of 0.80 vs those who were at the lowest fitness level.

In an accompanying editorial<sup>3</sup>, entitled "A MET a day keeps arrhythmia at bay," Drs Suraj Kapa and Samuel J Asirvatham (Mayo Clinic, Rochester, MN) write that exercise capacity appears to protect against AF—even though this seems at first glance "to counter prior data that participating in long-term, high-intensity physical activity is associated with increased arrhythmia risk."

They note that this is probably explained by "pathophysiologic differences" between regular exercise in a normal population and high-intensity activity in endurance athletes; and they write that too little or too much exercise may be the "sweet spots" for increased AF risk.

"When you push it to the extreme, you pay the price," added Kokkinos.

For the current analysis, he said that the investigators sought to examine a possible association between fitness and AF risk in individuals who specifically had hypertension and/or diabetes "because little has been known about this high-risk group."

The researchers identified a cohort of 4065 patients (mean age 59 years) with these conditions but with normal sinus rhythm. All underwent an exercise tolerance test and were then divided into the following four groups, after being stratified by age:

- High-fit: 9 METs achieved (n=813).
- Moderate-fit: 7.8 METs (n=1044).
- Low-fit: 6.5 METs (n=1091).
- Least-fit: 5.0 METs (n=1117).

"I'd say 5 METs is what you use cutting the grass or climbing the stairs. It's slow fitness," explained Kokkinos. "The 6.5 happens when people are active somewhat on a daily basis, the moderate-fit are probably walking three times a week, and then the high-fit are walking four to five times a week and maybe doing a little jogging on the side. But nothing too extreme."

### **"Encourage Moderate Fitness"**

Results showed that within 8±4.7 years of follow-up, 8.9% of the entire cohort had AF.

Compared with those in the least-fit group, the HRs were 0.26 for the high-fit group (95% CI 0.18–0.37), 0.42 for the moderate fit (95% CI 0.31–0.58), and 0.70 for the low fit (95% CI 0.55–0.90) after adjustment for a wide list of factors, including age, race, and history of CV disease.

"Overall, we found that cardiorespiratory fitness is inversely and independently associated with lower AF risk in this cohort," summarized Kokkinos.

He added that the risk reduction found in the high-risk group "was huge" and said the 9 METs they achieved is "incredibly doable," even in this age group. "A Lance Armstrong is probably at a MET level of 25. That's not what we're aiming for here. We're not going for sustained exercise that doesn't give the heart time to heal," he said. "In fact, I'd tell clinicians to encourage moderate fitness."

*The study authors reported no relevant financial relationships, nor did the editorialists.*

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### **References**

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2. Faselis C, Kokkinos P, Tsimploulis A, et al. Exercise capacity and atrial fibrillation risk in veterans: a cohort study. *Mayo Clin Proc* 2016; 91:558-566. [Article](#)
3. Kapa S, Asirvatham SJ. A MET a day keeps arrhythmia at bay: The association between exercise or cardiorespiratory fitness and atrial fibrillation. *May Clin Proc* 2016; 91:545-550. [Editorial](#)

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