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Exercise May Improve Odds Against Prostate Cancer Death

Study found three hours or more of vigorous activity a week upped patients' long-term survival

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WEDNESDAY, Jan. 5 (HealthDay News) -- Prostate cancer patients who routinely engage in modest amounts of vigorous physical exercise appear to lower their risk of dying from their disease, new research suggests.

Three hours a week or more of vigorous biking, tennis, jogging or swimming seems to improve the prognosis among such patients, the research team found. But they added that even moderate physical activity appears to lower the overall risk of dying from any cause.

"This is the first study in men with prostate cancer to evaluate physical activity after diagnosis in relation to prostate cancer-specific mortality and overall mortality," noted study author Stacey Kenfield, a research associate in the department of epidemiology at the Harvard School of Public Health, as well as at the Channing Laboratory at Brigham and Women's Hospital, both in Boston.

"We observed benefits at very attainable levels of activity," Kenfield added, "and our results suggest that men with prostate cancer should do some physical activity for their overall health, even if it is a small amount, such as 15 minutes of activity per day of walking, jogging or biking. Vigorous activity may be especially beneficial for prostate cancer, as well as overall health, at levels of three or more hours per week."

The findings are published in the Jan. 4 online issue of the *Journal of Clinical Oncology*.

The researchers noted that although prostate cancer is the most common cancer among American men, the news is not all grim. They pointed out that more than 80 percent of prostate cancer patients have localized disease, and the 10-year survival rate post-diagnosis is upwards of 93 percent. The upshot is that more than 2 million American men are prostate cancer survivors.

To explore how exercise might further improve the odds of survival, Kenfield and her colleagues tracked the physical exercise routines of just over 2,700 men who had been diagnosed with prostate cancer after 1990. The assessments took place every two years.

Activities that were assessed included walking, jogging, running, bicycling, swimming, rowing, stair-climbing, and playing tennis, squash, racquetball and/or golf. Weight-lifting and arduous outdoor work were also included in the analysis, and all activities were given a so-called "metabolic equivalent task" ranking, or MET value, according to the amount of energy each required relative to being sedentary.

After giving non-vigorous activities a MET ranking of less than 6 and vigorous activities a value of 6 and up, the authors determined how many MET hours per week were expended by each patient based on the nature and pace of each activity they engaged in.

Ultimately, 548 of the patients died during the study period, one-fifth as a direct result of their prostate cancer diagnosis. But the research team found that the more active patients had been, the lower their risk of dying from prostate cancer itself or any other cause.

The more hours the patients devoted to either vigorous or non-vigorous exercise routines, the better they fared in terms of survival. For example, men who tallied as much as nine or more MET hours per week -- equivalent to jogging, biking, swimming or playing tennis for 90 minutes per week -- had a 33 percent lower risk for dying from any cause and a 35 percent lower risk for dying from prostate cancer than men who expended less than nine MET hours per week.

Vigorous activity, however, seemed to confer a stronger survival benefit than non-vigorous activity. Compared with men who participated in vigorous exercise (such as biking, tennis, jogging, running, and/or swimming) for less than one hour per week, those who engaged in three hours or more had a nearly 50 percent drop in death risk due to any cause and a 61 percent drop in the risk of dying specifically from prostate cancer. In fact, only vigorous activity was linked to a drop in prostate cancer death risk, the study authors noted.

That said, however, even minimal activity routines gave patients an advantage in terms of overall survival. For example, men who registered between five and just under 10 hours per week of non-vigorous activity had a 28 percent lower risk for all-cause mortality compared with men who engaged in less than one hour per week of similar exercise. And that relative risk plummeted 51 percent among men who logged more than 10 hours per week of similar types of exercise.

Focusing specifically on walking (the most popular activity, accounting for more than one-third of total MET-hours per week among the patients), Kenfield and her team found that seven or more hours per week of walking conferred a "significant benefit" relative to walking less than 20 minutes per week.

The authors further found that pace mattered, as those men who walked at a "normal" pace had a 37 percent lower risk of dying from any cause than men who walked at an "easy" pace. Those who walked at a "brisk" or "very brisk" pace fared even better, experiencing a 48 percent drop in their risk for death.

"There are a number of pathways through which exercise could have an effect on prostate cancer biology," noted Kenfield. "Physical activity increases insulin sensitivity and may affect insulin growth factor-1 (IGF-1) bioactivity, which influences cell proliferation, migration and angiogenesis -- the formation of new blood vessels -- and can lead to cancer progression. Physical activity also lowers inflammatory factors and boosts immune function. How these molecular actions work together to affect prostate cancer biology and outcomes are currently being studied."

Dr. Basir U. Tareen, the physician-in-charge of urologic oncology at Beth Israel Medical Center in New York City, described the study as "groundbreaking."

"We've known for a long time that people who exercise in general are healthier and have better cardiovascular health," he noted. "So it's not surprising to me that people who exercise have improved overall survival. But we haven't specifically looked at exercise in terms of prostate cancer survival before. And it's very encouraging to see a very well-done study where they found they could systematically show that with increasing exercise that you can see a pretty significantly improved cancer-specific survival," Tareen continued.

"So, this study will hopefully be a gateway to many more studies, because we have yet to figure out exactly on the molecular level exactly why this happens. It probably has something to do with people who exercise having a decreased likelihood of inflammation or it could be related to the immune system. But already now I can tell my patients that if they exercise at least three hours or more per week they have a major risk reduction in cancer mortality," Tareen said.

More information

For more on prostate cancer, visit the U.S. National Cancer Institute.

SOURCES: Stacey Kenfield, Sc.D., research associate, department of epidemiology, Harvard School of Public Health, Boston, and Channing Laboratory, Brigham and Women's Hospital, Boston; Basir U. Tareen, M.D., physician-in-charge, urologic oncology, Beth Israel Medical Center, New York City; Jan. 4, 2011, Journal of Clinical Oncology, online