Vigorous Exercise Linked With Difference in How Genes in the Prostate Affect the Body

A new study showed that men with early-stage prostate cancer who exercise vigorously at least three hours a week have genes that are expressed differently in the prostate than those who do not exercise as intensely. Genes are small individual collections of information within each cell of the human body. How these genes affect the body is called gene expression.

In two previous studies, the researchers involved in this study found links between exercise, especially vigorous activity, and a lowered risk of death from prostate cancer or worsening of the disease. The goal of this study was to try to understand why exercise showed these benefits. The researchers looked at the gene expression in healthy prostate tissue from 70 men who had also completed a questionnaire about their exercise habits, including the amount and intensity of exercise.

The researchers found 184 genes that were expressed differently in men who participated in more vigorous exercise, such as jogging, tennis, or lap swimming, for at least three hours a week than in men who exercised less intensely, such as walking at any pace. Some of the genes that were expressed differently included the tumor suppressor genes (genes that can limit cancer growth) associated with breast cancer, *BRCA1* and *BRCA2*. The results of this study show that vigorous exercise may help some genes work better at controlling cancer growth.

The study was led by Mark Jesus Magbanua, PhD [1], Associate Specialist in the Department of Medicine at the University of California, San Francisco and 2012 Conquer Cancer Foundation [2] of ASCO Merit Award recipient.

What this means for patients

?We previously found that men with prostate cancer who exercise tend to fare better after a diagnosis of prostate cancer, and now we are trying to understand why,? said senior author June Chan, ScD, Associate Professor, Epidemiology and Biostatistics and Urology, and the Steven and Christine Burd-Safeway Distinguished Professor at the University of California, San Francisco. ?This was a small study with results that should be looked at cautiously and confirmed in larger studies. In the future, we hope this information could be used to help predict a patient's chance of recovery and the risk of the disease worsening.?

Questions to Ask Your Doctor

- What stage of prostate cancer do I have? What does this mean?
- What is my prognosis (chance of recovery)?
- What type of exercise program would you recommend for me?

For More Information

Guide to Prostate Cancer [3]

The Genetics of Cancer [4]

Physical Activity and Cancer Risk [5]

Physical Activity: Suggestions and Tips [6]

Links:
[1] http://www.conquercancerfoundation.org/foundation/What%27s+New/Research+of+Two+2012+Foundation+Merit+Award+Recipients+Highlighted+at+the+GU+Cancers+Symposium
[2] http://www.conquercancerfoundation.org/
[3] http://www.cancer.net/node/19562
[4] http://www.cancer.net/node/24897
[5] http://www.cancer.net/node/24995
[6] http://www.cancer.net/node/24996