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Healthy lifestyle triggers genetic changes: study

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By Will Dunham

WASHINGTON (Reuters) - Comprehensive lifestyle changes including a better diet and more exercise can lead not only to a better physique, but also to swift and dramatic changes at the genetic level, U.S. researchers said on Monday.

In a small study, the researchers tracked 30 men with low-risk prostate cancer who decided against conventional medical treatment such as surgery and radiation or hormone therapy.

The men underwent three months of major lifestyle changes, including eating a diet rich in fruits, vegetables, whole grains, legumes and soy products, moderate exercise such as walking for half an hour a day, and an hour of daily stress management methods such as meditation.

As expected, they lost weight, lowered their blood pressure and saw other health improvements. But the researchers found more profound changes when they compared prostate biopsies taken before and after the lifestyle changes.

After the three months, the men had changes in activity in about 500 genes -- including 48 that were turned on and 453 genes that were turned off.

The activity of disease-preventing genes increased while a number of disease-promoting genes, including those involved in prostate cancer and breast cancer, shut down, according to the study published in the journal Proceedings of the National Academy of Sciences.

The research was led by Dr. Dean Ornish, head of the Preventive Medicine Research Institute in Sausalito, California, and a well-known author advocating lifestyle changes to improve health.

"It's an exciting finding because so often people say, 'Oh, it's all in my genes, what can I do?' Well, it turns out you may be able to do a lot," Ornish, who is also affiliated with the University of California, San Francisco, said in a telephone interview.

"In just three months, I can change hundreds of my genes simply by changing what I eat and how I live?" That's pretty exciting," Ornish said. "The implications of our study are not limited to men with prostate cancer."

Ornish said the men avoided conventional medical treatment for prostate cancer for reasons separate from the study. But in making that decision, they allowed the researchers to look at biopsies in people with cancer before and after lifestyle changes.

"It gave us the opportunity to have an ethical reason for doing repeat biopsies in

just a three-month period because they needed that anyway to look at their clinical changes (in their prostate cancer)," Ornish said.

(Editing by Julie Steenhuysen and Xavier Briand)

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