

Changing lifestyle changes genes

Getting fit and eating better results in obvious changes physique as well as unseen changes in gene expression.

A pilot study by Dean Ornish and colleagues at the non-profit Preventive Medicine Research Institute and the University of California, San Francisco, shows, for the first time, that men with low-risk prostate cancers who made improvements in fitness, stress management, and nutrition altered the expression of genes that have a role in tumor progression and other illnesses.

They sampled gene expression in prostate biopsies from 30 men diagnosed with low-risk prostate cancer who had decided not to undergo conventional treatment for reasons unrelated to the study. The researchers sampled again three months later, after participants had made significant, prescribed lifestyle changes.

They found that gene expression in over 500 genes was beneficially affected—upregulating (“turning on”) disease-preventing genes and downregulating (“turning off”) disease-promoting genes, including oncogenes involved in prostate cancer and breast cancer.

The implications of this study are not limited to men with prostate cancer. Comprehensive lifestyle changes may cause changes in gene expression that may be beneficial to the general population as well as to those with prostate cancer. Larger trials should confirm the results of the study.

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