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## Why Aerobic Exercise Is Good For The Heart

Science Daily — Aerobic exercise is widely recognized to reduce the risk of coronary heart disease, but until now, researchers have not fully understood the biological mechanisms behind the effect of exercise on cardiovascular health. Findings of a new study show how exercise decreases inflammation, which reduces the risk of atherosclerosis – fatty build-ups in the arteries – that cause most cases of heart disease.

In a study led by Richard P. Sloan, Ph.D., professor of behavioral medicine at Columbia University Medical Center, whole blood samples were taken from 46 healthy young adults (20-45 years old) both before and after participating in moderate or high intensity aerobic exercise, over a 12-week period.

The blood samples were stimulated with the infectious agent lipopolysaccharide (LPS) – gram negative bacteria – and then analyzed for levels of tumor necrosis factor (TNF) – an initial step in the inflammatory cascade. Substantially lower levels of TNF were found after aerobic training, in both the moderate and high intensity groups.

"These findings suggest strongly that exercise reduces the systemic inflammation that can lead to heart disease," said Dr. Sloan. "This study is especially significant because the value of exercise has never before been shown in TNF, and never in healthy adults who were not at high-risk for heart disease."

Findings will be presented at the American Psychosomatic Society's Annual Meeting, March 7-10 in Budapest, Hungary.

"With the learnings gained from these findings, we plan to replicate this work with a larger group of volunteers," added Dr. Sloan.

In addition to Dr. Sloan, the Columbia researchers involved in this study included Peter A. Shapiro, M.D., Ronald E. DeMeersman, Ph.D., Paula S. McKinley, Ph.D. and Pamela D. Flood, M.D. Kevin Tracey, M.D. of North Shore University Hospital, was also a member of the research team.



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