

Physical fitness may improve survival among diabetes patients with heart dysfunction

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Being physically fit may improve survival rates among diabetes patients with a particular type of heart abnormality, a new study determines. The results will be presented at The Endocrine Society's 94th Annual Meeting in Houston.

In the United States, nearly 26 million people have diabetes, according to the American Diabetes Association. Being overweight or obese increases the risk of diabetes, and more people are developing the disease as the [obesity epidemic](#) continues. Treatment includes making lifestyle changes and taking medication to control blood sugar.

Left [ventricle hypertrophy](#), or LVH, is an abnormality characterized by a thickening of the muscular walls of the heart's main pumping chamber, which can reduce its ability to pump enough blood to meet the body's needs. Causes of LVH include [high blood pressure](#), and other heart and medical conditions. Medications are available to treat the disease.

While both diabetes and LVH can increase the risk of death, the effects of these diseases in relation to physical-fitness levels were unclear.

In this study, [diabetic patients](#) who were not physically fit and had LVH were the most likely to die, while physically fit patients, both with and without LVH, had a significantly lower risk of death. The differences remained even after investigators adjusted for potential influences, including [high blood pressure](#), [excess body weight](#), smoking, and medications. In each group, the risk of death compared to patients with

low physical-fitness levels and no LVH was:

- 20 percent greater – low physical fitness with LVH
- 41 percent lower – physically fit without LVH
- 43 percent lower – physically fit with LVH

"Exercise fitness markedly improves survival in patients with type 2 diabetes and left ventricle [hypertrophy](#)," said lead author Khaled A. Alswat, M.B.B.S., endocrinology fellow at Washington, D.C. Veterans Affairs Medical Center, George Washington University. "We also found that improvement in fitness improves survival significantly, regardless of the presence or absence of left [ventricle](#) wall thickness."

Beginning in 1986 and continuing until 2011, 866 male veterans with type 2 diabetes and an average age of 61 years enrolled in the study at the Veterans Affairs Medical Center in Washington, D.C

At the study's start, participants underwent a standard exercise assessment with a treadmill to determine fitness level and were then classified as either low fit or physically fit. In addition, all patients received a special test, known as an echocardiogram, which can diagnose LVH with sound waves that generate an image of the heart muscle, including its contractions and relaxation. The follow-up was as long as 24 years, with a median of almost 9 years. During the course of the study, 346 deaths occurred, which is an annual rate of 4.3 percent, overall.

Provided by The Endocrine Society

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