

Cholesterol-lowering drug may reduce exercise benefits for obese adults, study finds

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Statins, the most widely prescribed drugs worldwide, are often suggested to lower cholesterol and prevent heart disease in individuals with obesity, diabetes and metabolic syndrome, which is a combination of medical disorders including excess body fat and/or high levels of blood pressure, blood sugar and/or cholesterol. However, University of Missouri researchers found that simvastatin, a generic type of statin previously sold under the brand name "Zocor," hindered the positive effects of exercise for obese and overweight adults.

"Fitness has proven to be the most significant predictor of longevity and health because it protects people from a variety of [chronic diseases](#)," said John Thyfault, an associate professor of nutrition and [exercise physiology](#) at MU. "Daily physical activity is needed to maintain or improve fitness, and thus improve health outcomes. However, if patients start exercising and taking statins at the same time, it seems that statins block the ability of exercise to improve their fitness levels."

Thyfault says many cardiologists want to prescribe statins to all patients over a certain age regardless of whether they have metabolic syndrome; the drugs also are recommended for people with Type 2 diabetes. He recommends that cardiologists more closely weigh the benefits and risks of statins given this new data about their effect on [exercise training](#).

"Statins have only been used for about 15-20 years, so we don't know what the long-term effects of statins will be on aerobic fitness and overall health," Thyfault said. "If the drugs cause complications with

improving or maintaining fitness, not everyone should be prescribed statins."

Thyfault and his colleagues measured cardiorespiratory fitness in 37 previously sedentary, obese individuals ages 25-59 with low [fitness levels](#). The participants followed the same [exercise regimen](#) on the MU campus for 12 weeks; 18 of the 37 people also took 40 mg of simvastatin daily.

Statins significantly affected participants' exercise outcomes. Participants in the exercise-only group increased their cardiorespiratory fitness by an average of 10 percent compared to a 1.5 percent increase among participants also prescribed statins. Additionally, skeletal muscle mitochondrial content, the site where muscle cells turn oxygen into energy, decreased by 4.5 percent in the group taking statins while the exercise-only group had a 13 percent increase, a normal response following exercise training.

Thyfault suggests that future research determine whether lower doses of simvastatin or other types of statins similarly affect people's exercise outcomes and thus their risk for diseases such as Type 2 diabetes. Starting a statin regimen after exercising and obtaining a higher fitness level may reduce the drugs' effects on fitness, he says.

More information: The study, "Simvastatin impairs exercise training adaptations," was published in the *Journal of the American College of Cardiology*.

Provided by University of Missouri-Columbia

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