

# Liver transplant patients have high rates of metabolic syndrome

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Nearly 59 percent of liver transplant patients experience metabolic syndrome, which increases the risk of heart disease, stroke and diabetes, according to a study lead by liver specialist Eric R. Kallwitz, MD, of Loyola University Medical Center.

But despite this [high risk](#), exercise might be a key in preventing metabolic syndrome – and the intensity of exercise might be more important than the duration.

The study is published in *Liver Transplantation*, a journal of the American Association for the Study of Liver Diseases and the International Liver Transplantation Society.

The study found that among patients more than one year after transplant (when the risk of metabolic syndrome was highest), those who did not have metabolic syndrome were more likely to exercise more intensely. This novel finding suggests that [physical activity](#) "might provide a means to reduce metabolic syndrome complications in liver transplant recipients," Kallwitz and colleagues reported.

Metabolic syndrome is a cluster of conditions, including obesity, [high blood pressure](#), abnormal cholesterol and high fasting blood sugar, that increase the [risk of heart disease](#), stroke and diabetes.

The study included 204 [liver transplant patients](#), including 156 who were at least one year post transplant. Among all patients, 58.8 percent had

metabolic syndrome. Among patients who were at least a year post transplant, 63.5 percent had metabolic syndrome.

But exercise was associated with a reduced risk of metabolic syndrome complications. For example, patients who did not have increased [waist circumference](#) exercised 108 minutes per week with an intensity of 3.8 metabolic equivalents, while those who did have increased waist circumference exercised only 71 minutes per week at a lower intensity of 3.4 metabolic equivalents. (By comparison walking briskly for one hour has a metabolic equivalent of 3.3, while climbing stairs has a [metabolic equivalent](#) of 4.0.)

Many liver patients are so ill before receiving transplants that they are underweight. But following surgery, they tend to gain weight after they begin feeling better. In addition, Kallwitz said, anti-rejection drugs tend to increase two other [metabolic syndrome](#) complications: abnormal blood pressure and elevated blood sugar.

Although patients cannot discontinue their anti-rejection medications, they have other opportunities to take control of their health. The study found that after transplant, many patients were inactive—52 percent of patients performed no formal exercise. And among patients who did exercise, the average was only 90 minutes per week. Only 24 percent did the recommended minimum of 150 minutes of aerobic exercise per week. By comparison, 49 percent of the general public exercise more than 150 minutes per week.

"The beneficial associations observed between exercise and lower rates of metabolic abnormalities are quite encouraging," Kallwitz and colleagues wrote. "Exercise intensity seemed to be more important than duration and the effect was stronger in patients who were more than one year from the time of transplant. . . Overall, these findings suggest that a structured exercise program might help to prevent or reduce metabolic

abnormalities in liver transplant recipients."

**More information:** The study is titled "Exercise and Metabolic Syndrome after Transplant." It was conducted at the University of Illinois Medical Center, where Kallwitz worked before he joined Loyola.

Provided by Loyola University Health System

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