

Lung transplant patients do worse with lungs from heavy drinkers

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Lung transplant patients who receive lungs from heavy drinkers are nearly nine times more likely to experience a life-threatening complication called primary graft dysfunction, a Loyola University Medical Center study has found.

Lungs transplanted from heavy alcohol users also displayed poorer gas-exchange, and [transplant recipients](#) spent more time on ventilators, lead author Erin Lowery, MD, and colleagues report in the journal *Alcoholism: Clinical and Experimental Research*.

The study also found a trend toward poorer survival among patients who received lungs from [heavy drinkers](#).

"Our findings could have implications for recipients of [lung](#) transplantation," Dr. Lowery said. "We need to understand the mechanisms that cause this increased risk so that in the future donor lungs can be treated, perhaps prior to transplant, to improve outcomes."

Previous studies have found that alcohol abuse increases the risk to drinkers of tuberculosis, pneumonia and a severe form of [lung injury](#) called acute respiratory distress syndrome. The new study is the first to explore the impact of heavy alcohol use in [lung transplant](#) donors.

The study included 173 lung transplants performed at Loyola. Heavy alcohol use was defined as women who drank more than three drinks per day or seven drinks per week and men who drank more than four drinks

per day or 14 drinks per week. To be considered heavy alcohol users, donors also had to show either an abnormal liver biopsy or abnormal alcohol biomarkers.

Nearly 25 percent of the lung donors were heavy alcohol users. This is in line with previous studies that found that 23 percent of heart donors and 21 percent of kidney donors were alcohol dependent.

Researchers found that, after controlling for other risk factors, patients who received lungs from heavy alcohol users were 8.7 times more likely to develop severe primary graft dysfunction (PGD) than patients who received lungs from donors who did not drink.

PGD is a severe form of lung injury that can occur during the first three days after transplant. Many patients die from PGD, while survivors can experience worse long-term lung function and an increased chance of chronic rejection.

Researchers also found that during the first 24 hours after transplant, the ratio of oxygen carried in the blood to oxygen given to the patient (a measure of how well lungs perform gas exchange) was significantly worse in patients who received lungs from heavy alcohol users.

In an accompanying commentary in *Alcoholism*, David Guidot, MD, of Emory University School of Medicine wrote the Loyola study "raises the question as to whether or not a history of heavy alcohol use by a potential donor should exclude the use of their lungs in transplantation. At a time when there is a critical shortage of lungs available for transplantation, this is obviously a problematic issue. If other studies support the dramatically increased risk of primary graft dysfunction that Lowery and her colleagues have identified then the lung transplant professional community must confront this thorny question."

Dr. Guidot added that the Loyola study and other studies on the "alcoholic lung" should serve as a "call to action to develop treatments that can mitigate the effects of [alcohol abuse](#) on [lung function](#) and improve the donor pool."

More information: The study is titled "Heavy Alcohol Use in Lung Donors Increases the Risk for Primary Graft Dysfunction."

Provided by Loyola University Health System

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