

# Obese patients face increased risk of kidney damage after heart surgery

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Oxidative stress may put obese patients at increased risk of developing kidney damage after heart surgery, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN). Effective antioxidants or other therapies that reduce oxidative stress might help lower this risk, particularly among obese patients.

Acute kidney injury (AKI), an abrupt decline in [kidney function](#), is an increasingly prevalent and potentially serious condition following major surgery. Sometimes AKI arises after heart surgery because the kidneys are deprived of normal blood flow during the procedure.

To see if extra body weight puts patients at increased risk for developing AKI following heart surgery, Frederic Billings IV, MD (Vanderbilt University School of Medicine) and his colleagues evaluated information from 445 heart surgery patients, 112 of whom (25%) developed AKI.

Among the major findings:

- [Obese patients](#) ([body mass index](#), or BMI,  $\geq 30$  kg/m<sup>2</sup>) had an increased risk of developing AKI; specifically, a 26.5% increased risk per 5 kg/m<sup>2</sup> increase in BMI.
- Oxidative stress, which generates harmful unstable reactive oxygen molecules, plays a role in the link between obesity and AKI.

"The identification of oxidative stress during surgery as a possible mechanism for the development of kidney injury following surgery provides an opportunity to develop and test therapeutic treatments for surgical patients," said Dr. Billings.

**More information:** The article, entitled "Obesity and Oxidative Stress Predict Acute Kidney Injury Following Cardiac Surgery," will appear online on May 24, 2012, [doi: 10.1681/ASN.2011090940](https://doi.org/10.1681/ASN.2011090940)

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