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## **Obese patients run higher risk of post-operative complications**

**Risks include greater chance of heart attack, wound infection, nerve injury and urinary tract infection after surgery**

ANN ARBOR, Mich. — Obese patients have a significantly higher risk of complications following surgery, including heart attack, wound infection, nerve injury and urinary tract infection, according to a new study from researchers at the University of Michigan Health System.

The study, appearing in the March issue of the *World Journal of Surgery*, also found that morbidly obese patients had a death rate nearly twice as high as that of all other patients, as well as a higher rate of cardiac arrest.

"Our study provides further evidence of the dangers of obesity as it relates to surgery," says lead author Olumuyiwa A. Bamgbade, M.D., FRCA, a visiting instructor in the U-M Medical School's Department of Anesthesiology.

"One manifestation of this public health epidemic is that patients who are obese face a much higher likelihood of very serious problems following surgery," says co-author Olubukola O. Nafiu, M.D., FRCA, a resident in the Department of Anesthesiology.

The study, a retrospective review of adult post-operative complications from a U-M Department of Anesthesiology database from 2001 to 2005, examined and analyzed the complications of 6,773 patients. Of these, 2,217 – about one-third – were obese, and in the obese group, 993 were morbidly obese.

Bamgbade and the other researchers found much higher rates of the following complications in obese patients: heart attack, with obese patients experiencing five times the rate of attack than non-obese patients (0.5 percent versus 0.1 percent); wound infection, with a 1.7-times higher rate (6 percent versus 3.5 percent); peripheral nerve injury, with a four-times higher rate (0.4

percent versus 0.1 percent); and urinary tract infection, with a 1.5-times higher rate (3.9 percent versus 2.6 percent).

While the death rate did not vary between obese and non-obese patients, the rate was much higher for morbidly obese patients, 2.2 percent versus 1.2 percent for all other patients. Because of the increased risk, the authors suggest that morbidly obese people who have outpatient surgery should undergo a 23-hour hospital stay for post-operative monitoring.

The study notes that postoperative complications carry a heavy toll on patients' health and on health care costs. The average annual incidence of postoperative complications in the United States, the study says, is 4 percent, or 1.25 million surgical patients, with an average annual cost of \$25 billion.

Bamgbade also points out that the situation is worsening. "The incidence rate of postoperative complications appears to be increasing and may be partly due to an increasing surgical load and the growing elderly and obese populations," he says. Other studies, he notes, have projected that these factors will lead to a 25 percent increase in the number of surgeries, a 50 percent increase in surgery-related cost and a 100 percent increase in postoperative complications.

The postoperative complication rate of 7.7 percent in this study – compared with a national average of 4 percent – partly reflects the complexity of surgery and patients at U-M, a tertiary care institution. The authors also note that the study took place in Michigan, one of 10 states with an obesity prevalence of more than a quarter of the population.

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In addition to Bamgbade and Nafiu, authors of the paper were Timothy W. Rutter, M.D. and Pema Dorje, M.D., both of the U-M Department of Anesthesiology.

Reference: "Postoperative complications in obese and nonobese patients," World Journal of Surgery; March 2007, Vol. 31, 556–560.

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