

# High body fat (but not BMI itself) linked to four-fold increase in mortality risk after heart bypass surgery

June 3 2019

---

New research presented at this year's Euroanaesthesia congress in Vienna, Austria (1-3 June) shows that mortality in patients who had undergone heart bypass surgery was over 4 times higher in individuals with a high body fat mass, while body mass index (BMI) by itself was not associated with an increase in mortality. The research was conducted by Dr. Xavier Leroy of the Department of Anaesthesia and Resuscitation, CHU Lille, Lille, France and colleagues.

There is conflicting evidence about the existence of the so-called obesity paradox when it comes to cardiac surgery, which is the theory that obesity as defined by BMI may offer a protective effect to the patient and reduce their risk of post-operative [mortality](#). The authors suggest that other factors which are known to impact clinical outcomes in a range of settings such as [body composition](#), referring to fat mass (FM) and lean body weight (LBW), may complicate the situation and lead to the inconsistent results seen in previous research.

The team performed a retrospective study of 3373 patients who had undergone elective [cardiac surgery](#) with cardiopulmonary bypass from January 2013 until December 2016. Patient BMI (measured using the WHO definition) and body composition were calculated from clinical and administrative records and compared to patient mortality within 30 days of the operation. A further analysis was performed to investigate the association of BMI and body composition with a prolonged stay in

the [intensive care unit](#) (ICU), with prolonged defined as being in the uppermost quartile (patients in the highest 25%) of [length of stay](#) (LOS).

Across the entire sample of patients, mortality within 30 days occurred in 2.1% of cases and significant differences were observed among BMI, FM, and LBW categories. Unlike BMI however, FM and LBW were found to be independently associated with mortality.

The 25% (quartile) of patients with the highest fat mass (FM) were 4.1 times more likely to die than 25% with the lowest fat mass; and the 25% of patients with the lowest lean body weight (muscle) were 2.8 times more likely to die than the 25% of patients with the highest lean body weight.

There was no observed association between BMI and 30-day mortality but the authors did find an independent association between BMI and length of stay in the ICU. The authors conclude: "BMI was independently associated with a prolonged ICU length of stay, as were being in the highest fat mass and lowest lean body weight categories," explains Dr. Leroy. "The lower the LBW or the higher the FM and BMI were, the longer the length of stay in intensive care."

He concludes: "Overall, our findings showed that unlike BMI, lower lean [body](#) weight and higher fat mass in [patients](#) were independently associated with increased mortality after [heart bypass surgery](#)."

Provided by European Society of Anaesthesiology

Citation: High body fat (but not BMI itself) linked to four-fold increase in mortality risk after heart bypass surgery (2019, June 3) retrieved 5 May 2024 from <https://medicalxpress.com/news/2019-06-high-body-fat-bmi-linked.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.