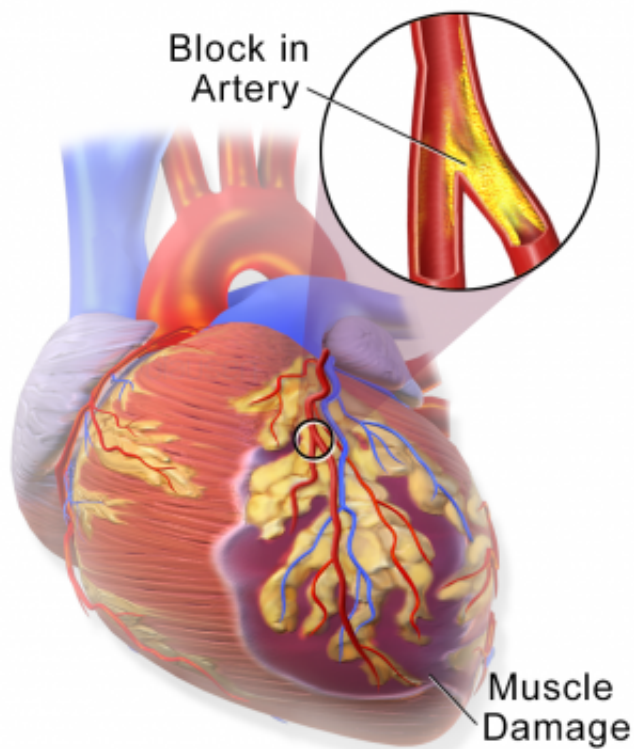


Rate of death, heart attack after noncardiac surgery decreases, although risk of stroke increases

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Heart Attack

Myocardial Infarction or Heart Attack. Credit: Blausen Medical Communications/Wikipedia/CC-A 3.0

In a study published online by *JAMA Cardiology*, Sripal Bangalore,

M.D., M.H.A., of the New York University School of Medicine, New York, and colleagues examined national trends in perioperative cardiovascular outcomes and mortality after major noncardiac surgery.

Worldwide, more than 300 million noncardiac surgeries are performed each year. Major adverse cardiovascular and cerebrovascular events (MACCE), including heart attack and ischemic stroke, are a significant source of perioperative (the period of time extending from when the patient goes into the hospital for surgery until discharged home) illness and death. Despite the significant burden perioperative events place on the national health care system, recent data are lacking on trends in perioperative MACCE among patients hospitalized for major noncardiac surgery.

Using the National Inpatient Sample, the researchers for this study identified patients who underwent major noncardiac surgery from January 2004 to December 2013. Among 10,581,621 hospitalizations (average patient age, 66 years; 57 percent female) for major noncardiac surgery, perioperative MACCE (defined as in-hospital, all-cause death, acute myocardial infarction [AMI; [heart attack](#)]), or [acute ischemic stroke](#)), occurred in 317,479 hospitalizations (3 percent), corresponding to an annual incidence of approximately 150,000 events. Major adverse cardiovascular and cerebrovascular events occurred most frequently in patients undergoing vascular (7.7 percent), thoracic (6.5 percent), and transplant surgery (6.3 percent).

Between 2004 and 2013, the frequency of MACCE declined from 3.1 percent to 2.6 percent, driven by a decline in frequency of perioperative death and AMI, but there was an increase in perioperative ischemic stroke from 0.52 percent in 2004 to 0.77 percent in 2013.

Men had higher risk of perioperative MACCE than women. In analyses of perioperative events by race and ethnicity, non-Hispanic black

patients had the highest rates of perioperative death and ischemic [stroke](#) in comparison to other racial groups.

"Perioperative MACCE occurs in 1 of every 33 hospitalizations for noncardiac surgery," the authors write. "Cardiovascular complications after noncardiac surgery remain a major source of morbidity and mortality. Despite improvements in perioperative outcomes over the past decade, the significant increase in the rate of [ischemic stroke](#) in this analysis requires confirmation and further study. Additional efforts are necessary to improve perioperative cardiovascular care of [patients](#) undergoing noncardiac [surgery](#)."

More information: Nathaniel R. Smilowitz et al. Perioperative Major Adverse Cardiovascular and Cerebrovascular Events Associated With Noncardiac Surgery, *JAMA Cardiology* (2016). [DOI: 10.1001/jamacardio.2016.4792](#)

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