

# History of stroke linked with increased risk of adverse outcomes after non-cardiac surgery

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In an analysis that included more than 480,000 patients who underwent elective noncardiac surgery, a history of stroke was associated with an increased risk of major adverse cardiovascular events and death, particularly if time elapsed between stroke and surgery was less than 9 months, according to a study in the July 16 issue of *JAMA*.

Noncardiac surgeries performed in patients with a recent [heart attack](#) or stent implantation have been associated with increased risk of perioperative cardiac events, as well as stent thrombosis (blood clot), and bleeding compared with patients with more distant heart attack or stent placement. Whether a similar time-dependent relationship exists for stroke has not been known, and recommendations on timing of [surgery](#) in patients with prior stroke in current perioperative guidelines are sparse, according to background information in the article.

Mads E. Jørgensen, M.B., of the University of Copenhagen, Denmark, and colleagues investigated the association between prior stroke (including time elapsed between stroke and surgery) and the risk of major adverse cardiovascular events (MACE, including ischemic stroke, heart attack, and cardiovascular death) and all-cause death up to 30 days after surgery in a group of Danish patients who underwent noncardiac elective surgery (n = 481,183 surgeries) from 2005-2011.

Crude incidence rates of MACE among patients with (n = 7,137) and

without (n = 474,046) prior stroke were 54.4 vs 4.1 respectively, per 1,000 patients. Further analysis indicated:

- Prior ischemic stroke, irrespective of time between [ischemic stroke](#) and surgery, was associated with an adjusted 1.8- and 4.8-fold increased relative risk of 30-day mortality and 30-day MACE, respectively, compared with patients without prior stroke.
- A strong time-dependent relationship between prior stroke and adverse postoperative outcome, with patients experiencing a stroke less than 3 months prior to surgery at particularly high risk. After 9 months, the associated risk appeared stable yet still increased compared with patients with no stroke.
- Low- and intermediate-risk surgeries seemed to pose at least the same relative risk of MACE in [patients](#) with recent [stroke](#) compared with high-risk surgery.

"Our findings need to be confirmed but may warrant consideration in future perioperative guidelines," the authors conclude.

**More information:** [DOI: 10.1001/jama.2014.8165](https://doi.org/10.1001/jama.2014.8165)

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