

# Pulling problem teeth before heart surgery to prevent infection may be catch-22

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To pull or not to pull? That is a common question when patients have the potentially dangerous combination of abscessed or infected teeth and the need for heart surgery. In such cases, problem teeth often are removed before surgery, to reduce the risk of infections including endocarditis, an infection of the inner lining of the heart that can prove deadly. But Mayo Clinic research suggests it may not be as simple as pulling teeth: The study found that roughly 1 in 10 heart surgery patients who had troublesome teeth extracted before surgery died or had adverse outcomes such as a stroke or kidney failure.

The findings are published in *The Annals of Thoracic Surgery*.

Prosthetic heart valve-related endocarditis accounts for up to one-fourth of infective endocarditis cases and proves fatal for up to 38 percent of patients who develop it. In light of that high mortality rate, physicians try to address risk factors such as poor dental health before [cardiac surgery](#). Removing diseased [teeth](#) at some point before surgery as a preventive measure is common, but research on whether that helps has been limited. Medical guidelines acknowledge a lack of conclusive evidence, the Mayo researchers noted.

The new study shows that the risk for patients who do have teeth removed before heart surgery "may be higher than we thought," says senior author Kendra Grim, M.D., a Mayo Clinic anesthesiologist.

"We are always concerned with improving safety, and pulling infected

teeth before heart surgery seemed to be the safer intervention. But we became interested in studying this complex patient group, as many patients that come to the operating room for dental surgery just before heart surgery are quite ill," Dr. Grim says.

The study is believed to be the largest so far evaluating [adverse outcomes](#) after pre-cardiac surgery dental extractions. The researchers studied outcomes in 205 adult Mayo patients who had teeth pulled before cardiovascular surgery. The study covered January 1, 2003, through Feb. 28, 2013; 80 percent of the patients were men, the median age at the time of tooth extraction was 62, and the median time lapse between dental extraction and heart surgery was seven days. The research found:

Six patients, or 3 percent, died in the period between their tooth extraction and the planned cardiac procedure.

Another six died after heart surgery, all while still hospitalized.

Ten patients, or roughly 5 percent, had other major adverse outcomes after heart surgery, such as bleeding, stroke, kidney failure requiring dialysis, acute coronary syndrome or stroke-like transient ischemic attacks.

Due to unexpected complications or findings from dental surgery, at least 14 patients, or 7 percent, had to have heart surgery delayed.

More information is needed to understand why patients died or had other major adverse outcomes, the researchers say. In addition to the stress placed on the body by dental extraction and heart surgery themselves, potential factors include the severity of individual patients' heart disease, other serious health problems they may have had, and how they reacted to anesthesia.

The bottom line for patients and physicians, the researchers conclude: Rather than following a rule of thumb, physicians should evaluate each patient individually to weigh the possible benefit of tooth extraction before [heart surgery](#) against the risk of death and other major adverse events.

"We hope this study sparks future discussion and research," Dr. Grim says. "In the meantime, we recommend an individualized approach for these patients, to weigh their particular risk and benefit of a dental procedure before cardiac surgery with the information we have currently available."

Provided by Mayo Clinic

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