

ACC/AHA revised guidelines for the perioperative use of beta blockers to minimize cardiac risk

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Cardiac complications around the time of noncardiac surgery are relatively common and can be serious. The American College of Cardiology (ACC) and the American Heart Association (AHA) today release a Focused Update to the Practice Guidelines based on new clinical trial data that summarizes and sheds light on the risks and benefits of using beta blockers to reduce cardiac events during noncardiac surgeries, and provides specific recommendations about which patients will likely benefit and in which patients there is not enough evidence to recommend their use.

"Any surgery, particularly a high-risk procedure, is a stress on the heart, especially for those with underlying circulation problems or other [cardiovascular risk factors](#)," says Kirsten E. Fleischmann, M.D., M.P.H., chair of the 2009 writing group that reviewed the latest evidence on the perioperative use of [beta blockers](#). "In general, the higher the risk from a cardiovascular standpoint, the more likely a patient will benefit from beta blockers. However, newer data from the POISE [Perioperative Ischemic Evaluation] trial suggest that starting higher doses of beta blockers acutely on the day of surgery is associated with risk as well, so careful patient selection, dose adjustment and monitoring throughout the perioperative period is key."

More than 30 million noncardiac surgeries are performed in the United States each year. Cardiac problems around the time of surgery are a

major cause of complications and death in these patients, prolonging hospitalizations and increasing costs. Beta blockers are designed to help protect against heart attack around the time of surgery by lowering heart rate and helping to block the effects of [stress hormones](#) on the heart.

The recommendation to continue beta blockers perioperatively in those patients who are already receiving them remains current since the initial 2007 guidelines were published. The workgroup advises beta blockers are reasonable to consider in:

- Patients at high risk for heart attacks or other cardiac complications because of abnormal stress test results or known coronary artery disease who undergo vascular surgery
- High risk patients undergoing intermediate risk surgery or in those with multiple risk factors for complications (e.g., diabetes, a history of heart failure, significant kidney disease) who undergo vascular surgery

However, authors caution that when beta blockers are started in patients not yet taking them, the medication should be initiated well before the procedure and titrated up as blood pressure and heart rate allow.

"We recommend beta blockers be started well in advance of surgery and not at higher doses right off the bat," says Dr. Fleischmann. "These updated guidelines are intended to provide guidance for the appropriate use of beta blockers to help reduce the risk of cardiac complications. Physicians must be vigilant in assessing patients' cardiac risk and weighing this against potential side effects of the therapy."

According to the authors, the usefulness of beta blockers remains uncertain in lower-risk patients or in those undergoing lower-risk

surgeries (e.g., percutaneous or endovascular procedures), and requires careful consideration of the risks and benefits.

The guidelines do not advocate for routine administration of beta blockers, particularly in higher fixed-dose regimens, begun on the day of surgery based on data from the POISE study. While there was a reduction in perioperative myocardial infarction and primary [cardiac events](#) among study participants, the use of beta blockers was also associated with higher rates of stroke and overall mortality. Beta blockers should not be used when contraindications exist.

More information: Full text of the Focused Update will be published in the November 24, 2009, issue of the Journal of the American College of Cardiology and the November 24, 2009, Circulation, and will be posted on the ACC (www.acc.org) and AHA (www.americanheart.org) Web sites.

Source: American College of Cardiology ([news](#) : [web](#))

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