

New clinical practice guidelines recommend use of arteries rather than veins in heart bypass surgery

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The Society of Thoracic Surgeons has released new clinical practice guidelines that recommend expanding the use of arteries from the chest and forearm rather than using veins from the leg when performing coronary artery bypass grafting (CABG) surgery in certain patients. The guidelines, posted online today, will appear in the February 2016 issue of *The Annals of Thoracic Surgery*.

The left [internal thoracic artery](#) (chest artery) is considered the gold standard conduit in CABG surgery and has been associated with improved survival, graft patency (unobstructed blood flow), and freedom from [cardiac events](#) when compared with saphenous vein ([leg vein](#)) grafts.

"Despite this, our review of the STS National Database showed that less than 10% of patients undergoing CABG surgery in the US received two or more arterial grafts," explained guidelines co-author Gabriel Aldea, MD, from the University of Washington in Seattle. "The goal of our writing group was to review and update all current data to assess how the choice of arterial conduit affects patient outcomes following surgery."

The left internal thoracic artery is used routinely to bypass the left anterior descending artery, when there is no indication that it will be harmful to the patient. The guideline writing committee evaluated the use of the right internal thoracic artery or the radial artery ([forearm](#)

artery), instead of a [saphenous vein](#), when a second bypass is needed.

The new clinical practice guidelines offer evidence-based recommendations that include using:

- An internal thoracic artery to bypass the left anterior descending artery when bypass is needed;
- A second arterial graft (right internal thoracic artery or radial artery) as an adjunct to the left internal thoracic artery in appropriate patients; and
- A second arterial graft (right internal thoracic artery or radial artery) when grafting coronary targets with severe stenosis.

The authors also recommended that the heart team discuss arterial grafts in detail—not only if they should be used, but also how many should be used, the type that should be used, and where they should go—when determining the optimal approach for each patient.

"Current data suggest that a right internal thoracic artery or [radial artery](#) graft can be used safely in many, if not most, patients and is associated with improved graft patency and survival," said Dr. Aldea. "However, our research shows that there is an increased risk of sternal wound infection in some patients, so we recommend discussing treatment options with the heart team to determine the most effective graft conduit for each individual patient."

Guidelines Now Offer Advice on Best Operative Approaches

In an editorial in the same issue of *The Annals*, John D. Puskas, MD, MSc, from Mount Sinai Beth Israel in New York, and colleagues outlined the importance of the new STS clinical practice guidelines:

"This is the first set of guidelines that specifically focuses on arterial grafting and adds to the existing set of current guidelines, which have shifted from telling us when to operate to guiding us in how best to do so," said Dr. Puskas.

"Complex coronary revascularization remains the most technically challenging procedure in adult cardiac surgery, requiring nuanced decision-making and fine technical skill," added Dr. Puskas. "The publication of these practice guidelines is a step in the right direction, providing practicing surgeons with data-driven guidance to optimize the outcomes of surgical coronary revascularization."

More information: Aldea GS, Bakaeen F, Pal J, Fremes S, Head SJ, Sabik J, Rosengart T, Kappetein AP, Thourani VH, Firestone S, and Mitchell JD. The Society of Thoracic Surgeons Clinical Practice Guidelines on Arterial Conduits for Coronary Artery Bypass Grafting. *Ann Thoracic Surg* 2015; [DOI: 10.1016/j.athoracsur.2015.09.100](https://doi.org/10.1016/j.athoracsur.2015.09.100)

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