



An initiative of the ABIM Foundation

The Society of Thoracic Surgeons



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Surgeons

Five Things Physicians and Patients Should Question

Patients who have no cardiac history and good functional status do not require preoperative stress testing prior to non-cardiac thoracic surgery.

- Functional status has been shown to be reliable for prediction of perioperative and long-term cardiac events. In highly functional asymptomatic patients, management is rarely changed by preoperative stress testing. It is therefore appropriate to proceed with the planned surgery without it.

Unnecessary stress testing can be harmful because it increases the cost of care and delays treatment without altering surgical or perioperative management in a meaningful way. Furthermore, low-risk patients who undergo preoperative stress testing are more likely to obtain additional invasive testing with risks of complications.

Cardiac complications are significant contributors to morbidity and mortality after non-cardiac thoracic surgery, and it is important to identify patients preoperatively who are at risk for these complications. The most valuable tools in this endeavor include a thorough history, physical exam and resting EKG. Cardiac stress testing can be an important adjunct in this evaluation, but it should only be used when clinically indicated.

Don't initiate routine evaluation of carotid artery disease prior to cardiac surgery in the absence of symptoms or other high-risk criteria.

- Carotid stenosis with symptoms (stroke or transient ischemic attacks [TIA]) is a known risk for cardiovascular accident and appropriate for preoperative testing.
- The presence of a carotid bruit does not equate to an increased risk of stroke after cardiac surgery.
- Patients with carotid stenosis have a higher rate of cerebrovascular complications after cardiac surgery, but there is no evidence that prophylactic or concomitant carotid surgery decreases this rate of complications in asymptomatic patients.

ACC/AHA 2011 guidelines for coronary artery bypass graft surgery indicate carotid artery duplex scanning is reasonable in selected patients who are considered to have high-risk features. However, this was based on a consensus and a low level of evidence. In addition, a recent consensus report from the United Kingdom questioned whether neurologic sequelae developing in cardiac surgery patients with asymptomatic carotid disease are due to the carotid artery disease or rather act as a surrogate for an increased stroke risk from atherosclerotic issues with the aorta.

The Northern Manhattan Stroke Study concluded that carotid auscultation had poor sensitivity and positive predictive value for carotid stenosis and so decisions on obtaining carotid duplex studies should be considered based on symptoms or risk factors rather than findings on auscultation.

Don't perform a routine pre-discharge echocardiogram after cardiac valve replacement surgery.

- Pre-discharge cardiac echocardiography is useful after cardiac valve repair. It provides information regarding the integrity of the repair and allows the opportunity for early identification of problems that may need to be addressed surgically during the index hospitalization. Unlike valve repair, there is a lack of evidence that supports the routine use of cardiac echocardiography pre-discharge after cardiac valve replacement.
- Scenarios that would justify the use of pre-discharge cardiac echocardiography include: inability to perform intraoperative transesophageal echocardiography, clinical signs and symptoms worrisome for valvular malfunction or infection, or a large pericardial effusion.

Patients with suspected or biopsy proven Stage I NSCLC do not require brain imaging prior to definitive care in the absence of neurologic symptoms.

- The incidence of occult brain metastasis in Stage I lung cancer is low (<3%) and so routine brain imaging results in increased costs, delays in therapy and rarely changes patient management.
- False-positive studies occur in up to 11% of patients resulting in further invasive testing or incorrect over staging, with potentially tragic effects on treatment decisions and outcomes.

Some clinicians perform routine screening by brain magnetic resonance imaging (MRI) or computed tomography (CT) scans to rule out occult brain metastasis in asymptomatic patients prior to surgical resection of early stage lung cancer. This practice of routine screening for occult brain metastases has not been evaluated by a randomized clinical trial and may not be cost-effective or medically necessary.

Pooled data from retrospective studies that included a comprehensive clinical evaluation demonstrated that only 3% of patients who have a negative neurologic evaluation present with intracranial metastasis. One study, limited to Stage I patients, reported a prevalence of 1.3%. The joint statement of the American Thoracic Society and the European Respiratory Society did not advocate preoperative imaging of the brain in patients with NSCLC who present without neurologic symptoms, and the current National Comprehensive Cancer Network (NCCN) non-small cell lung cancer guidelines do not recommend preoperative brain imaging for asymptomatic patients with Stage IA non-small cell lung carcinoma.

Prior to cardiac surgery, there is no need for pulmonary function testing in the absence of respiratory symptoms.

- PFTs can be helpful in determining risk in cardiac surgery, but patients with no pulmonary disease are unlikely to benefit and do not justify testing.
- Symptoms attributed to cardiac disease that are respiratory in nature should be better characterized with PFTs.

Risk models for cardiac surgery developed from review of The Society of Thoracic Surgeons Adult Cardiac Surgery Database incorporate a variable for chronic lung disease. Only recently have actual FEV1 and DLCO data been collected in the database. In the absence of respiratory symptoms or suggestive medical history, pulmonary function testing is quite unlikely to change patient management or assist in risk assessment. Although some data are beginning to emerge about preoperative pulmonary rehabilitation prior to cardiac surgery for patients with even mild to moderate obstructive disease, this does not directly extrapolate to asymptomatic patients.

How This List Was Created

The Society of Thoracic Surgeons (STS) list development process was led by the First Vice-President, and involved input from multiple workforces, including the Workforce on Adult Cardiac and Vascular Surgery, Workforce on General Thoracic Surgery, and Workforce on Evidence Based Surgery, and was staffed by STS' Director of Quality. The initial 17 recommendations from these Workforces were narrowed down to eight based upon frequency, clinical guidelines and potential impact. STS leadership approved these eight recommendations for presentation to members in an online survey. The results of the survey, as well as research and systematic literature review by the Workforce on Evidence Based Surgery, were presented to the STS Executive Committee, which approved the five final recommendations.

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About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.



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About The Society of Thoracic Surgeons

Founded in 1964, The Society of Thoracic Surgeons (STS) is an international not-for-profit organization representing more than 6,500 cardiothoracic surgeons, researchers and other health care professionals who are part of the cardiothoracic surgery team. STS members are dedicated to ensuring the best possible outcomes for surgeries of the heart, lung and esophagus, as well as other surgical procedures within the chest.



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