
Preoperative Cardiac Evaluation for Non-cardiac Surgery

Frequently Asked Questions

1. Who needs a preoperative evaluation of their cardiac status?

- Patients at risk for perioperative cardiac morbidity or mortality
- Patients with poor or unknown functional capacity
- Patients with active cardiac conditions, such as a recent MI, recent stent placement, hemodynamically significant arrhythmias or rhythm devices, valvular disease or replacement, going for any procedure
- Patients with cardiac risk factors including history of CAD (angina, MI), CHF, valvular disease, diabetes, arrhythmias, stroke, hypertension, renal insufficiency, morbid obesity for all but minimally invasive procedures

2. Who can do the cardiac evaluation?

- Either a Primary Care Physician, or a Cardiologist can evaluate a patient's preoperative cardiac status and risk
- It is advisable that patients with active cardiac conditions or significant recent cardiovascular events such as MI, coronary revascularization, recent or ongoing CHF, valve replacement, placement of cardiac rhythm device, etc. be evaluated by their cardiologist

3. What's included in the cardiac evaluation?

The purpose of preoperative evaluation is not to give "medical clearance" but rather to perform an evaluation of the patient's current medical status, make recommendations concerning the evaluation, management, and risk of cardiac problems over the entire perioperative period, and provide a clinical risk profile that the patient, primary physician and non-physician caregivers, anesthesiologist, and surgeon can use in making treatment decisions that may influence short- and long-term cardiac outcomes. The goal of the consultation is the optimal care of the patient. The isolated statement "Cleared for surgery" is not a useful or acceptable consultation. Specific recommendations for anesthetic technique (i.e. "cleared for spinal", "cleared for general") are typically unfounded and often counterproductive.

A critical role of the consultant is to determine the stability of the patient's cardiovascular status and if the patient is in optimal medical condition within the context of the surgical illness. In general, preoperative tests are recommended only if the information obtained will result in a change in the surgical procedure performed, a change in medical therapy or monitoring during or after surgery, or a postponement of surgery until the cardiac condition can be corrected or stabilized. The referring physician and patient should be informed of the results of the evaluation and implications for the patient's prognosis. It is the cardiovascular consultant's responsibility to ensure clarity of communication so that findings and impressions will be incorporated effectively into the patient's overall plan of care. This ideally would include direct communication with the surgeon, anesthesiologist, and other physicians, as well as frank discussion directly with the patient and, if appropriate, the family.

The consultation should include:

- History including a review of prior test results
- Physical including comprehensive cardiac evaluation
- Stratification – Per the 2007 ACC/AHA / LMC Guideline
 - Emergency case? Active Cardiac Conditions? Surgical Risk? Functional Status? Clinical Risk Factors?
- Further testing per guidelines if management may be affected. Alterations in management could include preop revascularization, invasive hemodynamic monitoring, altered anesthetic technique, elevated level of perioperative care. Further testing might include Stress Test, Echo, Nuclear Scan, or Angiography. These should be performed on an outpatient basis whenever possible.

Stepwise Approach to Preoperative Cardiac Assessment for the Consultant

- The following stepwise approach based on the 2007 AHA / ACC guidelines should be followed by the consultant
- Please note that at any step, further evaluation should be performed if there is likelihood that testing might influence management. These might include alterations in medical therapy, perioperative monitoring, or a delay in surgery for optimization.
- This evaluation should be conducted on an outpatient basis whenever possible

Step 1: IS THIS AN EMERGENCY NON-CARDIAC SURGERY? → ✓ **Proceed to O.R.**

(If time permits an abbreviated evaluation should be performed if it would otherwise be indicated.
Recommendations for perioperative medical management and surveillance should be provided)

Step 2: ARE THERE ANY ACTIVE CARDIAC CONDITIONS? → **Evaluate and Treat** →

| <u>Active Cardiac Conditions</u> | |
|---|---|
| <ul style="list-style-type: none"> ❖ Unstable Angina, Severe Angina, Recent MI (within 1 month) ❖ Decompensated Heart Failure ❖ Significant Arrhythmias <ul style="list-style-type: none"> • High grade Mobitz II or third-degree AV blocks • Symptomatic bradycardias or ventricular arrhythmias • Supraventricular arrhythmias (i.e. Atrial fibrillation with rate > 100) | <ul style="list-style-type: none"> ❖ Severe Valvular Disease <ul style="list-style-type: none"> • Severe aortic stenosis • Symptomatic mitral stenosis ❖ Drug Eluting Stents placed within 365 days ❖ Bare Metal Stents placed within 45 days ❖ Balloon Angioplasty within 4 weeks |

PROCEED to O.R. ONLY after stabilization or intervention AND weighing surgical risk vs. cardiac risk

If there are "no" Active cardiac conditions, then proceed to Step 3

Step 3: IS THIS A LOW-RISK SURGERY? → ✓ **Proceed to O.R.**

| <u>Surgical Risk Categories</u> | |
|---|--|
| High: emergent major operation, major vascular, major abdominal, major orthopedic, major thoracic, large anticipated fluid shifts/blood loss | Intermediate: head and neck, orthopedic, prostate surgery |
| | Low: endoscopy procedures, superficial procedures, cataract surgery |

If it is not a Low Risk Surgery, then proceed to step 4

Step 4: IS THE PATIENT ASYMPTOMATIC WITH GOOD FUNCTIONAL CAPACITY? → ✓ **Proceed to O.R.**

| <u>Functional Capacity</u> |
|---|
| ❖ Poor: less than 4 Mets (can't walk flight of stairs) |
| ❖ Moderate-Excellent: more than 4 Mets (can walk flight of stairs) |

(Further evaluation only if it is likely that testing might influence management)

If functional capacity is poor proceed to step 5

Step 5: DOES THE PATIENT HAVE POOR OR UNKNOWN FUNCTIONAL CAPACITY?

| <u>Clinical Risk Factors</u> | |
|---|--|
| <ul style="list-style-type: none"> ❖ Mild angina pectoris ❖ Prior MI ❖ Coronary artery disease ❖ Compensated or prior CHF | <ul style="list-style-type: none"> ❖ Diabetes mellitus ❖ Cerebrovascular disease/ carotid Stenosis ❖ Renal insufficiency ❖ Coronary stents / revascularization |

No Clinical Risk Factors → ✓ **Proceed to O.R**

1 or 2 Clinical Risk Factors

High Risk Surgery or Intermediate Risk Surgery → ✓ **Proceed to O.R** with heart rate control Consider Noninvasive Testing if it will affect management

3 or more Clinical Risk Factors

High Risk Surgery → Consider Noninvasive Testing if it will affect management then
✓ **Proceed to O.R.**

Intermediate Risk Surgery → ✓ **Proceed to O.R** with heart rate control Consider Noninvasive Testing if it will affect management