



Perioperative Medicine

Risk-stratify, optimize, and know which drugs to hold — most testing changes nothing

≥ 4 METs

usually needs no testing

ASSESS THE RISK *function and the procedure matter more than any investigation*

FUNCTIONAL CAPACITY

Can they climb two flights of stairs or walk up a hill without stopping? That is roughly 4 METs, and it predicts perioperative outcome better than most tests. **Good functional capacity generally means proceed without further cardiac testing**, whatever the risk factors.

THE RISK INDEX

RCRI counts six predictors: **high-risk surgery, ischemic heart disease, heart failure, cerebrovascular disease, insulin-treated diabetes, and creatinine > 2 mg/dL**. More factors means higher cardiac risk, and it frames the conversation with the patient and surgeon.

THE PROCEDURE ITSELF

Low-risk surgery — cataract, endoscopy, superficial and most day-case procedures — **needs no cardiac testing regardless of risk factors**. Vascular, major intra-abdominal, intrathoracic and emergency surgery carry the highest risk.

TESTING RARELY HELPS *ask what you would do differently with the result*

Test	When it is actually useful
ECG	Reasonable in known cardiovascular disease or significant risk factors undergoing anything beyond low-risk surgery. Not needed for low-risk procedures in asymptomatic patients.
Echocardiography	For unexplained dyspnea, a new murmur, suspected significant valve disease, or heart failure that has not been assessed — not as a routine screen.
Stress testing	Only if the result would change management before surgery — that is, if you would revascularize. Routine preoperative revascularization does not reduce perioperative events , so a positive test usually delays surgery without benefit.
Routine labs	Targeted, not reflexive. Complete blood count, renal function and group-and-save where relevant. Routine coagulation screens in patients without a bleeding history are low yield and generate spurious delays.
The key question	"Would an abnormal result change what we do?" If not, do not order it. Preoperative over-investigation causes cancellations, anxiety and harm without improving outcomes.

THE MEDICATIONS *this is where most preventable harm sits*

Drug	What to do
Beta-blockers	Continue if already established. Do not start a beta-blocker on the day of surgery — in POISE this reduced myocardial infarction but increased stroke and overall mortality . Abrupt withdrawal is also harmful.
Aspirin	Usually continue for secondary prevention , especially with coronary stents. Stop for primary prevention and where bleeding would be catastrophic — intracranial and some spinal and ophthalmic surgery.
DAPT after stents	Delay elective surgery — conventionally at least 6 months after a drug-eluting stent , and a minimum of 1 month if surgery cannot wait. Never stop both agents without cardiology input ; usually continue aspirin.
SGLT2 inhibitors	Hold at least 3–4 days before surgery . They cause euglycemic ketoacidosis , in which the glucose looks reassuringly normal — a genuinely dangerous perioperative trap.
Other diabetes drugs	Hold metformin around surgery and contrast, hold sulfonylureas while fasting, and reduce rather than omit basal insulin — never stop insulin entirely in type 1 diabetes.
ACEi / ARB	Commonly held on the morning of surgery to reduce induction hypotension, particularly with neuraxial anesthesia. Restart once euvolemic.

OPTIMIZE WHAT IS MODIFIABLE *and prevent the predictable complications*

BEFORE

Smoking cessation — benefit rises with duration, and even short-term cessation helps wound healing. **Treat anemia** before elective surgery rather than transfusing during it. Optimize **glycemic control, heart failure and COPD**. Assess **frailty and nutrition**, and screen for **obstructive sleep apnea**, which raises airway and postoperative respiratory risk.

AFTER

VTE prophylaxis matched to procedure and bleeding risk — frequently omitted or delayed. **Delirium prevention** in the elderly: orientation, sleep, glasses and hearing aids, early mobilization, and avoiding benzodiazepines and anticholinergics. **Adequate multimodal analgesia**, since untreated pain drives delirium. **Restart held medications deliberately and document when**.

POSTOPERATIVE PROBLEMS YOU WILL BE CALLED ABOUT *the common ward pages*

FEVER — think by timing

Day 0–2: inflammatory response to surgery, atelectasis, and rarely early necrotizing wound infection or a transfusion reaction. **Day 3–5: pneumonia and urinary tract infection**. **Day 5–7: surgical site infection** and anastomotic leak. **Beyond a week**: collections, abscess, line infection and **VTE**. Examine the wound and the lines rather than reflexively culturing everything.

MYOCARDIAL INJURY AFTER SURGERY

Most perioperative myocardial injury is silent — no chest pain, detected only on troponin — and it carries a substantially increased 30-day mortality. It is usually **supply-demand mismatch** rather than plaque rupture, so it is treated by correcting **anemia, hypotension, hypoxia, tachycardia and pain**, plus secondary prevention. **Do not reflexively anticoagulate or send to the cath lab** in a fresh postoperative patient without cardiology input.

PEARLS & PITFALLS

- **Never start a beta-blocker on the day of surgery**. POISE showed fewer infarcts but more strokes and deaths.
- **Hold SGLT2 inhibitors days in advance**. Euglycemic ketoacidosis presents with a normal glucose and is easily missed.
- **Good functional capacity beats testing**. If they can manage two flights of stairs, further cardiac workup rarely changes anything.
- **Do not stop dual antiplatelet therapy after a recent stent** without cardiology — stent thrombosis is frequently fatal.
- **Preoperative revascularization does not reduce perioperative events**. Do not order a stress test you would not act on.
- **Write the restart plan**. Medications held for surgery and never resumed is a leading source of postoperative harm.

