Preoperative Anesthesia Evaluation Guidelines
Midwest Anesthesia Providers, SC
Background:

- Studies have shown a lack of patient benefit from routine pre-op testing. Rather, testing should be based on coexisting diseases and risk stratification of both patient and surgery being performed.

- Analysis has shown there are only two risk factors consistently associated with an adverse outcome:
  - ASA physical status of 3 or >
  - Risk of surgery as classified by the ACC/AHA guidelines

- As such, the following pre-op testing guidelines have been developed to direct preoperative evaluation using an evidence-based methodology.

Policy Statement:

There are pre-admission requirements for patients having elective surgery and/or an elective procedure. To minimize patient inconvenience, avoid delays on day of surgery and unnecessary costs while fostering efficiency in scheduling operating rooms and procedure rooms, the following requirements will be completed:

- A minimum of **one day prior** to the planned elective surgery/procedure for low risk patients having low to intermediate risk surgery.

- A minimum of **five days prior** to the planned elective surgery/procedure for high-risk patients or for patients having major surgery.
REQUIREMENTS FOR HISTORY AND PHYSICAL EXAMINATION

1. All patients scheduled for surgery or a procedure must have a completed H&P update dated and signed by the surgeon in EMR within 24 hours of day of surgery or a procedure.
   - If a complete H&P is <30 days, then a H&P update form is sufficient.
   - If a complete H&P is >30 days, then a new H&P must be completed.

2. An anesthesiologist is also required to complete a H&P for all cases regardless of type of anesthesia planned and/or given, except medical supervision cases (e.g. endoscopy cases or as indicated) in which case an anesthesia care provider (i.e. CRNA) may complete.

3. If available obtain the most recent primary care assessment note and/or pre-op evaluation note from PMD.

4. If the PMD recommends further testing (e.g. cardiac stress test) or clearance from another specialist (e.g. pulmonary clearance), it is the responsibility of the surgeon’s office to forward the documentation to the PAT office at LCMH no later than 4pm prior to day of scheduled surgery or risk cancellation.
RECOMMENDATIONS FOR EKG

1. In general, a pre-op 12-lead resting EKG is recommended for:
   • Patients with known heart disease, PVD, or cerebrovascular disease who are undergoing intermediate- or high-risk surgery
   • Patients with 1 or > clinical risk factors (e.g. CAD, history of CHF, cerebrovascular disease, DM, renal insufficiency) who are undergoing vascular (or other high risk) surgery

2. EKG is reasonable for:
   • Patients with no clinical risk factors who are undergoing vascular (or other high risk) surgery
   • Patients with 1 or > clinical risk factors who are undergoing intermediate-risk surgery

3. EKG is not indicated for asymptomatic patients undergoing low-risk surgery.
   • Asymptomatic means able to climb a flight of stairs without any subjective symptoms of cardiac disease such as angina, dyspnea, palpitations or syncope.

RCRI = Revised Cardiac Risk Index
LABORATORY TESTS AND RADIOLOGY STUDIES

The anesthesia pre-admit testing algorithm included in this document is a basic guideline for additional labs and x-rays that may be ordered prior to an elective surgery or procedure as indicated by the patient's physical status, diagnosis, and planned surgery or procedure and is at the surgeon's and/or anesthesiologist's discretion.

• In general, lab results within 3 months are acceptable, unless major abnormalities exist or the patient's medical condition has changed.

• CXR acceptable within 6 months unless acute or active process.

• EKG acceptable within 6 months if normal; 3 months if abnormal or if known CAD or change in condition or +CAD risk factors.

OTHER TESTS

All females of menstruating age will be asked if they are pregnant or if there is a possibility of pregnancy. A urine or serum pregnancy test will be ordered if there is a possibility of pregnancy. An HCG must be within 24 hours of surgery.

All patients for procedures involving the female genitourinary organs (uterus, ovaries) are required to have a pregnancy test, even in the face of previous tubal ligation.

Type and Screen should be ordered preoperatively per surgeon for surgeries that have an anticipated blood loss >500ml.

CATARACT SURGERY

Patients in their usual state of health who are undergoing cataract surgery do not require preoperative testing.
## ANESTHESIA PREOP TESTING GUIDELINES

<table>
<thead>
<tr>
<th></th>
<th>CBC</th>
<th>BMP</th>
<th>CMP</th>
<th>PT/INR</th>
<th>PTT</th>
<th>UA</th>
<th>Urine HCG</th>
<th>Drug Level</th>
<th>ECG</th>
<th>CXR</th>
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</thead>
<tbody>
<tr>
<td>Cardiac Disease</td>
<td>X</td>
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<td>Morbid Obesity</td>
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<td>Major Surgery</td>
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<td>Menstruating Female</td>
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<td>X</td>
</tr>
</tbody>
</table>

* Check level if seizures are poorly controlled

Source: Chart adapted from St. Mary’s Medical Center Dignity Health Preop Testing Guidelines

1. Additional tests may be ordered by physician as warranted by patient’s medical condition.

2. Some or all tests may be waived by physician order.

3. Blood tests acceptable if performed within 90 days provided no change in condition or medication has occurred, except labs for CV or Renal disease patients which require physician review and may need to be repeated per physician order.

4. All patients with diabetes must have glucose (serum or bedside accuchek) done on day of surgery.

5. All menstruating females must have HCG done on day of surgery.
MEDICATION INSTRUCTIONS

• Oral medications should be taken at home on the morning of surgery with a small sip of water.

• If a patient takes a B-Blocker type medication or combination B-Blocker medication, please instruct patient to take their usual dose prior to surgery including the morning of surgery as above. If patient forgot to take their last scheduled evening dose but remembers the morning of surgery prior to coming to hospital, instruct patient to take that dose pre-op as soon as possible with a small sip of water.

• Patients should continue all medications EXCEPT those listed below.

1. **ACE-I/ARB**: discontinue on day of surgery.

2. **Aspirin/Plavix**: requires decision-making with surgeon.

3. **Coumadin**: discontinue 5 days prior to surgery except for cataract surgery w/o retrobulbar block

4. **Diet pills**: Fenfluramine (Pondimin), Dexfenfluramine (Redux), Phenteramine (Adipex, Fastin, Oby-cap, Obenix, Oby-triZantryl, Lonamine). These should be discontinued for 7 days prior to surgery or as instructed by surgeon.

5. **Diuretics**: discontinue on day of surgery.

6. **Heparin/LMWH**: requires decision-making with surgeon.
   • Heparin discontinued 4-6 hrs before surgery
   • LMW/H discontinued 24 hrs before surgery

7. **Herbal medications and supplements/Vitamin E**: discontinue 7 days prior to surgery or as instructed by surgeon.

8. **NSAIDS/Cox 2 inhibitors (-coxib)**: requires decision-making with surgeon.

9. **Topical Medications (except eye drops)**: discontinue on day of surgery.
SPECIAL CIRCUMSTANCES

Patients with h/o recent MI
• Delay elective surgery for 2 months

Patients with balloon angioplasty w/o stenting
• Delay surgery for 2 weeks

Patients with coronary artery stents
• Drug Eluting Stent (DES): Do NOT discontinue ASA or Plavix for 12 months after stent insertion unless discussed with surgeon and cardiologist beforehand. In patients taking Plavix for DES, it is strongly recommended to have elective surgery delayed for at least 12 months if possible.
• Bare Metal Stent (BMS): Do NOT discontinue ASA or Plavix for 1 month after stent insertion unless discussed with surgeon and cardiologist beforehand.

Patients on ASA and Plavix
• ASA and Plavix should be continued UNLESS the risk of bleeding is greater than the risk of thrombosis
• There is no need to discontinue ASA and Plavix for cataract surgery under topical or general anesthesia. However, if a retrobulbar block is to be used then the ophthalmologist should be consulted and Plavix discontinuation should be discussed.
• ASA and Plavix should be discontinued 7 days prior to surgery if reversal of platelet inhibition is required. If Plavix is discontinued, strong consideration needs to be given to starting or continuing ASA.

Diabetics
• NO oral hypoglycemic meds should be taken by patient the morning of surgery unless patient has been specifically instructed to do so by surgeon or PMD.
• NO insulin should be taken by patient the morning of surgery unless patient is on Lantus insulin in which case please instruct patient to continue to take their usual Lantus dose as prescribed by their physician.
• Instruct patients to drink apple juice if they feel symptoms of hypoglycemia (explain that procedure may then be postponed).
• Perform finger stick glucose on all diabetics on arrival to Pre-op and record results on front of patient’s chart. Notify anesthesiologist if glucose is <50, >200 or patient is symptomatic.
OSA

- Patients with the diagnosis of Obstructive Sleep Apnea who wear BiPAP or CPAP masks at home should be instructed to bring their device in with them on the day of surgery or procedure for possible use perioperatively as determined by the surgeon or anesthesiologist. Patients with significant risk factors for post-op sleep apnea will need to be monitored longer post-operatively.

STOP BANG Sleep Apnea Questionnaire:

<table>
<thead>
<tr>
<th>STOP</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you SNORE loudly</td>
<td>1</td>
</tr>
<tr>
<td>to be heard through closed doors?</td>
<td></td>
</tr>
<tr>
<td>Do you often feel TIRED, fatigued, or sleepy during daytime?</td>
<td>1</td>
</tr>
<tr>
<td>Has anyone OBSERVED you stop breathing during your sleep?</td>
<td>1</td>
</tr>
<tr>
<td>Do you have or are you being treated for high blood PRESSURE?</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BANG</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI &gt; 35</td>
<td>1</td>
</tr>
<tr>
<td>AGE &gt;50 yo</td>
<td>1</td>
</tr>
<tr>
<td>NECK circumference &gt;16 in (40cm)?</td>
<td>1</td>
</tr>
<tr>
<td>GENDER Male?</td>
<td>1</td>
</tr>
</tbody>
</table>

High risk of OSA : Score 5-8
Intermediate risk of OSA: Score 3-4
Low risk of OSA: Score 0-2
PERMANENT PACEMAKER OR IMPLANTED CARDIOVERTER DEFIBRILLATOR

• Ask patient to bring their Pacemaker/ICD identification card with them on the day of surgery.

• Contact manufacturer to verify patient’s specific default settings when a magnet is utilized. If patient does not have identification card for their device, the name of the manufacturer of the device can be obtained from the health care provider that placed it. In the event this cannot be determined, contact the manufacturers directly with the patient’s name, date of birth, and social security number. Each manufacturer should be able to state whether or not the patient has its device and how it should be managed in the perioperative period.


• Documentation of last interrogation should be documented in the chart. It should be within 6 months.

ILLEGAL DRUGS

• Patients who admit to the use of illegal drugs or whom are suspected of using illegal drugs will require a urine drug screen on the morning of admission prior to elective surgery/procedure.
1. ACS – Acute coronary syndrome
2. MACE – Major adverse cardiac event
3. NSQIP – National Surgical Quality Improvement Program Surgical Risk Calculator, American College of Surgeons (http://riskcalculator.facs.org/)
RISK STRATIFICATION

When assessing preop cardiac risk, ACC/AHA recommends use of one of the following cardiac risk estimation tools:

• NSQIP Surgical Risk Calculator (http://riskcalculator.facs.org/)
• Revised Cardiac Risk Index (RCRI)

I. NSQIP-guided management:

• If surgical risk <1%, proceed with surgery
• If surgical risk >1% and functional status <4 METS, obtain pharmacologic stress if it would affect management.

II. Revised Cardiac Risk Index

<table>
<thead>
<tr>
<th>RISK FACTOR</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebrovascular disease</td>
<td>1</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>1</td>
</tr>
<tr>
<td>Creatinine level &gt; 2.0 mg per dL</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes mellitus requiring insulin</td>
<td>1</td>
</tr>
<tr>
<td>Ischemic cardiac disease</td>
<td>1</td>
</tr>
<tr>
<td>High risk surgery (suprainguinal vascular surgery, intrathoracic surgery, or intraperitoneal surgery)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RISK OF MAJOR CARDIAC EVENT</th>
<th>POINTS</th>
<th>RISK % (95% CONFIDENCE INTERVAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0.4 (0.05 to 1.5)</td>
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<tr>
<td></td>
<td>1</td>
<td>0.9 (0.3 to 2.1)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6.6 (3.9 to 10.3)</td>
</tr>
<tr>
<td></td>
<td>≥ 3</td>
<td>≥11 (5.8 to 18.4)</td>
</tr>
</tbody>
</table>

Note: 2 or > risk factors make patient “high risk”

I. PATIENT RISK

Examples of high-risk patients include:

- **Cardiac Disease:** CAD, coronary stents and/or angioplasty, heart surgery, CHF, pacemaker/AICD, arrhythmia, significant valvular heart disease, pulmonary hypertension.

  **Anti-coagulated patients:** Need to be seen no later than 2 weeks prior to their scheduled procedure in order for an appropriate PMD and/or Hematologist consult to be obtained and an approved perioperative anticoagulation plan to be put in place.

- **Pulmonary Disease:** Heavy smoker (>30 pack year hx), asthma requiring daily medical treatment, reactive airway disease, COPD, use of home O2 or CPAP at night.

- **Obstructive Sleep Apnea** (on CPAP).

- **Renal Transplant or Renal Failure** requiring dialysis.

- **Morbid Obesity** (BMI > 35 or weight > 275lb).

- **Moderate to severe Rheumatoid Arthritis:** If taking medication to treat.

- **Chronic pain patients:** If taking prescription medications.

- **Advanced age ( >75 years):** EXCEPTIONS - Patients undergoing cataracts, those who are ASA I or II undergoing EGD and/or colonoscopy, and those residing in nursing homes/assisted living facilities.

- **Patients taking multiple medications** or who are using illegal drugs, or suspected of using illegal drugs --> POLY-PHARMACY.

- **History of Congenital Anomaly:** Pediatric and adult patients, including those with Downs syndrome, congenital heart disease, cerebral palsy, etc. EXCEPTION - If these patients are repeat surgical patients and there is no evidence/history of an interval change in their functional status.

- **Recent hospitalization** (<6 months) or **ER visit** for cardiac, pulmonary, vascular or infectious disease reasons.

Source: TH Pre-Admission Requirements for Anesthesia
II. SURGICAL RISK

Low Risk Surgical Procedure (incidence of periop MI or death <1%)
• Minimal physiological stress
  • Endoscopic procedures (GI)
  • ENT surgery (w/o flap or neck dissection)
  • Hernia repair
  • Eye surgery
  • Carpal Tunnel
  • Interventional radiology
  • Knee arthroscopy
  • Plastic surgery
  • Superficial procedure
  • Breast surgery
  • Cystoscopy
  • Diagnostic cardiac cath

Intermediate Risk Surgical Procedure (incidence of periop MI or death 1-5%)
• Moderate physiological stress and minimal blood loss, fluid shifts, or postoperative changes.
  • Carotid endarterectomy
  • Head and neck surgery
  • Orthopedic surgery
  • Gynecologic and urologic surgery
  • Prostate surgery
  • Intraperitoneal surgery without bowel resection
  • Intrathoracic surgery without lung resection
  • Cardiac cath procedures including EP studies, ablations, AICD, pacemaker

High Risk Surgical Procedure (incidence of periop MI or death >5%)
• Significant fluid shifts, possible blood loss, as well as perioperative stress anticipated.
  • Orthopedic surgery (major total joint replacement of shoulder/knee/hip and long bone)
  • Prostate surgery (open radical prostatectomy, cystectomy)
  • Intraperitoneal surgery with bowel resection
  • Intrathoracic surgery with lung resection
  • Major oncologic general surgery or gynecologic surgery
  • Major oncologic head and neck surgery
  • Emergent major operations, particularly in the elderly
  • Aortic and other major vascular surgery
  • Peripheral vascular surgery
  • Anticipated prolonged surgical procedures associated with large fluid shifts and/or blood loss
  • Major spine surgery (4 or more levels with instrumentation)

Source: TH Pre-admission Guidelines modified with UCLA Anesthesiology and Perioperative Medicine website
Acute Coronary Syndrome (ACS):

- **Unstable coronary syndrome** (angina, recent MI >7 days but <30 days)
- ** Decompensated heart failure** (worsening or new onset HF, NYHA IV)
- **Significant arrhythmias** (high grade AV block, Mobitz II block, 3rd degree block, SVT >100 bpm at rest, symptomatic bradycardia, newly recognized ventricular tachycardia)
- **Severe valvular disease** (AS with mean pressure gradient >40mmHg or valve area <1cm or symptomatic, symptomatic mitral stenosis with DOE, heart failure, exertional pre-syncope)
NPO GUIDELINE INSTRUCTIONS

• Infants and children up to 12 months old:
  • NPO for 6 hours prior to procedure for milk (formula or animal milk)
  • MAY have mother’s breast milk until 4 hours before surgery
  • MAY have clear liquids (water or apple juice) until 2 hours before surgery

• Children from 13 months to 8 years of age:
  • NPO after midnight or 8 hours prior to procedure
  • MAY have clear liquids (water or apple juice) until 2 hours before surgery

• Adults and children 9 years of age and older:
  • NPO after midnight or 8 hours prior to procedure
  • MAY have clear liquids (water or apple juice) until 2 hours before surgery

Acceptable clear liquids: Water, clear non-colored Gatorade, apple or grape juice without fiber, pedialyte, 7-up/sprite, black coffee or tea without milk products.

Longer fasting timelines may apply due to increased risk of aspiration in the following:
• Obesity
• Pregnancy
• DM
• Poorly controlled GERD
• History of difficult airway
• Opioid use

For cases starting late in the day, please consult the anesthesia dept for NPO status.
# Metabolic Equivalents of Functional Capacity (MET)

Indicated by the highest level of tolerated activity below.

<table>
<thead>
<tr>
<th>1 MET</th>
<th>&gt; 4 METs</th>
<th>&gt; 10 METs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take care of self</td>
<td>Climb 1 flight of stairs or walk up a hill</td>
<td>Participate in strenuous sports including below:</td>
</tr>
<tr>
<td>Eat/dress/use toilet</td>
<td>Walk on level ground at 4mph</td>
<td>Singles tennis</td>
</tr>
<tr>
<td>Walk indoors around the house</td>
<td>Run a short distance</td>
<td>Football</td>
</tr>
<tr>
<td>Walk 1-2 blocks on level ground 2-3 mph</td>
<td>Scrubbing floors/moving heavy furniture</td>
<td>Basketball</td>
</tr>
<tr>
<td>Dusting/wash dishes (some classify this as 1-4 METs)</td>
<td>Golf, bowl, dance, doubles tennis, throw baseball or football</td>
<td>Skiing</td>
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</tbody>
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ASA CLASSIFICATION

<table>
<thead>
<tr>
<th>ASA Class</th>
<th>Description</th>
<th>Example:</th>
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<tbody>
<tr>
<td>1</td>
<td>A normal healthy patient</td>
<td>Fit, non-obese (BMI under 30), a non-smoking patient with good exercise tolerance.</td>
</tr>
<tr>
<td>2</td>
<td>A patient with mild systemic disease</td>
<td>Patient with no functional limitations and a well-controlled disease (e.g. treated hypertension, obesity with BMI under 35, frequent social drinker or is a cigarette smoker).</td>
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<tr>
<td>3</td>
<td>A patient with a severe systemic disease that is not life-threatening</td>
<td>Patient with some functional limitation as a result of disease (e.g., poorly treated hypertension or diabetes, morbid obesity, chronic renal failure, a bronchospastic disease with intermittent exacerbation, stable angina, implanted pacemaker).</td>
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<tr>
<td>4</td>
<td>A patient with a severe systemic disease that is a constant threat to life</td>
<td>Patient with functional limitation from severe, life-threatening disease (e.g., unstable angina, poorly controlled COPD, symptomatic CHF, recent (less than three months ago) myocardial infarction or stroke.</td>
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<tr>
<td>5</td>
<td>A moribund patient who is not expected to survive without the operation. The patient is not expected to survive beyond the next 24 hours without surgery</td>
<td>Ruptured abdominal aortic aneurysm, massive trauma, and extensive intra-cranial hemorrhage with mass effect.</td>
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<tr>
<td>6</td>
<td>A brain-dead patient whose organs are being removed with the intention of transplanting them into another patient.</td>
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The addition of “E” to the ASAPS (e.g., ASA 2E) denotes an emergency surgical procedure. The ASA defines an emergency as existing “when the delay in treatment of the patient would lead to a significant increase in the threat to life or body part.”