**PREOPERATIVE ASSESSMENT & PERIOPERATIVE CARE**

**Step 1:** Need for emergency noncardiac surgery?
- Yes: To O.R.
- No: Proceed with planned surgery

**Step 2:** Active cardiac conditions?
- Yes: Eval. & Treat, Delay Surgery.
- No: Proceed with planned surgery

**Step 3:** Low Risk Surgery?
- Yes: Proceed with planned surgery
- No: Reconsider O.R.

**Step 4:** "Good" functional capacity (MET ≥ 4) w/o symptoms?
- Yes: Proceed with planned surgery
- No: Proceed with planned surgery

**Step 5:** Poor or Unknown Functional Capacity
- Evaluate Clinical Risk Factors to decide additional evaluations (see next page or opposite side card)

### (ACTIVE CARDIAC CONDITIONS to CLINICAL RISK FACTORS)

<table>
<thead>
<tr>
<th>Active Cardiac Conditions</th>
<th>Clinical Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstable coronary syndromes (ACS, recent MI, &gt; 30 days since event)</td>
<td>History of Heart Disease</td>
</tr>
<tr>
<td>Significant arrhythmias</td>
<td></td>
</tr>
<tr>
<td>Severe valvular disease: (AS with ≥ 40 mm Hg or 1.2 cm2 or symptomatic, MS with symptoms (DOES, pre-syncpe or syncope)</td>
<td>MI (fx of) or EKG-abnormal Q</td>
</tr>
<tr>
<td>HF (decompensated NYHA IV or new onset)</td>
<td>DM</td>
</tr>
<tr>
<td>Renal Insufficiency (Cr &gt; 2.0)</td>
<td>CVA</td>
</tr>
</tbody>
</table>

**PULMONARY Testing**

<table>
<thead>
<tr>
<th>Test</th>
<th>Predictive Value</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABG</td>
<td>Predicts poor outcome if PaO2 &lt; 45</td>
<td>Severe COPD</td>
</tr>
<tr>
<td>PET's</td>
<td>Predicts post-op course in lung resection</td>
<td>Anticipate Lung Rejection</td>
</tr>
<tr>
<td>(pre-op)</td>
<td>Evaluate for optimal bronchodilatation</td>
<td>COPD or Asthma</td>
</tr>
<tr>
<td></td>
<td>Definition of optimal bronchodilatation: free of wheezing and peak flow &gt; 80% of predicted or personal best</td>
<td></td>
</tr>
</tbody>
</table>

**PULMONARY Pre-op management:**

- **Goal:** Maximize lung function (this applies mostly to abdominal procedures)

  - **Perioperative Beta Blockade**
    - Examples:
      - Metoprolol 50-100 mg IV, 30 min. pre-op. Q50-100 mg q.d for > 7 days
      - Labetolol 100 mg q.d pre-op and continue post-op.
    - Best to start > 7 days preop and titrate to HR 50-70 BPM
    - Long-acting beta-blockers superior to short acting
    - Do not discontinue immediately post-op.
    - Continue for at least 7 days postop, preferably 30 days postop.
    - The majority of geriatric patients undergoing surgery will benefit from perioperative B-blockers

### (CLINICAL RISK FACTORS)

| HF of heart disease, EKG with abnormal Q waves, CHF-compensated, CVA, DM, CKD III |


**For more explanation see: Web site: geriatrics.unmc.edu visit Gil-Bil Pearse 12/11/10**

**DVT Prophylaxis**

<table>
<thead>
<tr>
<th>Surgery Type</th>
<th>Risk</th>
<th>Enox</th>
<th>IPC</th>
<th>LMWH COUMADIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Surgery</td>
<td>any</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>General Surgery</td>
<td>multiple</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Total Hip Replacement</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Total Knee Replacement</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

- **LMWH:** low molecular weight heparin
- **Counadin:** INR goal of 2-3.6
- **Risk for thrombosis**
- **Intermittent Pneumatic Compression device**
- **Fitted graduated stockings that extends above the knee**

**DELIURIMENT PREVENTION:** To prevent delirium the clinician must address:

1. Risk factor assessment and modification
2. Medication evaluation and reduction
3. Medication management
4. Sensory enhancement
5. Night-time hydration
6. Cognitive stimulation
7. Prescriptive lifestyle changes
8. Environmental modification
9. Early mobilization
10. Occupational therapy

**Additional information:**

- **Procedural risk:** abdominal surgery
- **Chest physiotherapy in thoracic and abdominal surgery**
- **D/C smoking eight weeks pre-op.**
- **Carotid endarterectomy**
- **Prostate**
- **Orthopedic intraperitoneal/intrathoracic**
- **Breast surgery**
- **Cataracts**
- **Endoscopy**
- **ECT**
- **Valvular surgery**
- **CVA**
- **Surgery**
- **General**

---

**FUNCTIONAL CAPACITY**

- < 4 mets: walking < 2 blocks on level without stopping or unable climb flight stairs
- ≥ 4 mets: climbing a flight of stairs or walk up (slight incline) hill 1-2 bks w/o stopping or walk level ground – 4 mph or heavy housework (such those, move furniture)

**PROCEDURE RISK:**

<table>
<thead>
<tr>
<th>Simple</th>
<th>Intermediate</th>
<th>Valvular and vascular</th>
<th>Thoracic</th>
<th>Lower extremity</th>
<th>Urogenital</th>
<th>Non-cardiac</th>
<th>Skin</th>
<th>Oncology</th>
<th>Gastrointestinal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visceral endarterectomy</td>
<td>metastatic</td>
<td>head and neck cancer</td>
<td>breast surgery</td>
<td>BPH</td>
<td>Rectum</td>
<td>Brain</td>
<td>Lung</td>
<td>Bone metastases</td>
<td>Pancreatic tumors</td>
</tr>
<tr>
<td>Abdominal</td>
<td>Head and Neck</td>
<td>Orthopedic</td>
<td>Lung cancer</td>
<td>Rectal</td>
<td>Gastrointestinal</td>
<td>Brain Tumor</td>
<td>Lung cancer</td>
<td>Bone metastases</td>
<td>Liver metastases</td>
</tr>
<tr>
<td>Peripheral</td>
<td>Visceral</td>
<td>Breast</td>
<td>Lung cancer</td>
<td>Rectal</td>
<td>Gastrointestinal</td>
<td>Brain Tumor</td>
<td>Lung cancer</td>
<td>Bone metastases</td>
<td>Liver metastases</td>
</tr>
<tr>
<td>Hypothenar</td>
<td>Head and Neck</td>
<td>Orthopedic</td>
<td>Lung cancer</td>
<td>Rectal</td>
<td>Gastrointestinal</td>
<td>Brain Tumor</td>
<td>Lung cancer</td>
<td>Bone metastases</td>
<td>Liver metastases</td>
</tr>
<tr>
<td>Limb</td>
<td>Limb</td>
<td>Soft Tissue</td>
<td>Limb</td>
<td>Limb</td>
<td>Limb</td>
<td>Limb</td>
<td>Limb</td>
<td>Limb</td>
<td>Limb</td>
</tr>
<tr>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
<td>Hand</td>
</tr>
<tr>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
<td>Foot</td>
</tr>
</tbody>
</table>

**Intermediate vs High risk (Vascular surgery) with unknown or Poor Functional Status (≤ 4 METS)**

- Proceed with planned surgery
- Add Perioperative Beta Blockade
- Only perform Noninvasive cardiac stress testing, if results change management

---

**Intermediate vs High risk (Vascular surgery)**

- Proceed with planned surgery
- Add Perioperative Beta Blockade
- Only perform Noninvasive cardiac stress testing, if results change management