

# Pre-Operative Clinic Risk Assessment Worksheet

## Thrombosis Risk Factor Assessment (Choose all that apply)

BIRTHDATE \_\_\_\_\_

NAME \_\_\_\_\_

Reg No. \_\_\_\_\_

### Each Risk Factor Represents 1 Point

- Age 41-60 years
- Swollen legs (current)
- Sepsis (< 1 month)
- History of inflammatory bowel disease
- Abnormal pulmonary function (COPD)
- Oral contraceptives or hormone replacement therapy
- History of unexplained stillborn infant, recurrent spontaneous abortion ( $\geq 3$ ), premature birth w/toxemia or growth restricted infant
- Other risk factors \_\_\_\_\_
- Acute myocardial infarction
- Varicose veins
- Medical patient currently at bed rest
- History of prior major surgery (< 1 month)
- Serious lung disease including pneumonia (< 1 month)
- Pregnancy or postpartum (< 1 month)
- Congestive heart failure(<1month)
- Obesity (BMI > 25)
- Minor surgery planned

Subtotal: \_\_\_\_\_

### Each Risk Factor Represents 2 Points

- Age 61-74 years
- Major surgery (>45 minutes)
- Patient confined to bed(>72 hours)
- Central venous access
- Malignancy(present or previous)
- Immobilizing plaster cast (<1 month)
- Arthroscopic surgery
- Laparoscopic surgery(>45 minutes)

Subtotal: \_\_\_\_\_

### Each Risk Factor Represents 3 Points

- Age 75 years or older
- Positive Prothrombin 20210A
- Elevated serum homocysteine
- Heparin-induced thrombocytopenia(HIT) (*Do not use heparin or any low molecular weight heparin*)
- Other congenital or acquired thrombophilia. If yes: Type \_\_\_\_\_
- Family history of thrombosis\***
- Positive Factor V Leiden
- Elevated anticardiolipin antibodies
- History of DVT/PE
- Positive Lupus anticoagulant

**\*most frequently missed risk factor**

Subtotal: \_\_\_\_\_

### Each Risk Factor Represents 5 Points

- Stroke (<1month)
- Elective major lower extremity arthroplasty
- Multiple trauma (<1 month)
- Acute spinal cord injury (paralysis) (<1 month)
- Hip, pelvis, or leg fracture (<1 month)

Subtotal: \_\_\_\_\_

**TOTAL THROMBOSIS RISK FACTOR ASSESSMENT SCORE: \_\_\_\_\_**

### Revised Cardiac Risk Index (RCRI) Major Criteria

#### Each Risk Factor Represents 1 Point

- History of CAD (h/o MI, pathologic Q Waves on ECG, h/o positive stress test, current angina, use of SL nitroglycerin)
- History of CHF (includes: h/o pulmonary edema, PND, rales or S3 on exam, CSR consistent w/CHF)
- High-risk surgery (intrathoracic, intraperitoneal, vascular)
- History of TIA or CVA
- Renal insufficiency(CR>2.0)
- Diabetes Mellitus

TOTAL SCORE: \_\_\_\_\_

Physician Signature: \_\_\_\_\_ Dr # \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

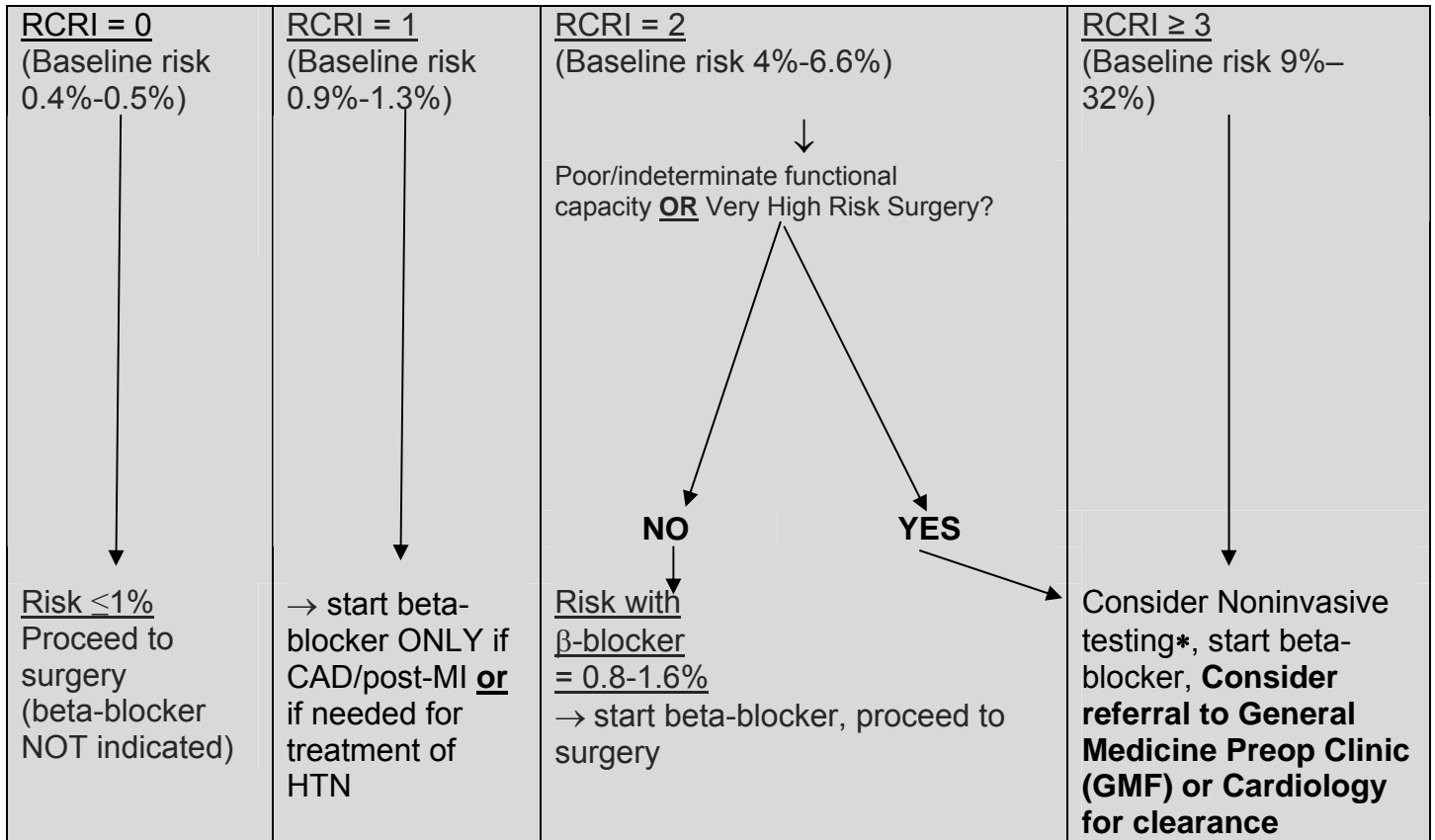
**FACTORS ASSOCIATED WITH INCREASED BLEEDING**

Patients may not be a candidate for anticoagulant therapy & SCD's should be considered.  
Active bleed, ingestion of oral anticoagulants, administration of glycoprotein IIb/IIIa inhibitors, history of heparin induced thrombocytopenia

**CLINICAL CONSIDERATIONS FOR THE USE OF SEQUENTIAL COMPRESSION DEVICES (SCD)**

Patient may not be a candidate for SCD's & alternative prophylactic measures should be considered.  
Patients with Severe Peripheral Arterial Disease, CHF, Acute Superficial DVT

Total Risk Factor Score	Risk Level	Incidence of DVT	Propylaxis Regimen
0-1	Low Risk	2 %	<input type="checkbox"/> Early Ambulation
2	Moderate Risk	10-20%	Choose the following medication <b>OR</b> compression devices: <input type="checkbox"/> Sequential Compression Device (SCD) <input type="checkbox"/> Heparin 5000 units SQ BID
3-4	Higher Risk	20-40%	Choose ONE of the following medications + / - compression devices: <input type="checkbox"/> Sequential Compression Device (SCD) <input type="checkbox"/> Heparin 5000 units SQ TID <input type="checkbox"/> Enoxaparin/Lovenox: <input type="checkbox"/> 40mg SQ daily(WT<150kg,CrCl>30mL/min) <input type="checkbox"/> 30mg SQ daily(WT<150kg,CrCl=10-29mL/min) <input type="checkbox"/> 30mg SQ BID(WT>150kg, CrCl>30mL/min) <b>(please refer to dosing guidelines)</b>
5 or more	Highest Risk	40-80%	Choose ONE of the following medications + / - compression devices: <input type="checkbox"/> Sequential Compression Device (SCD) <input type="checkbox"/> Heparin 5000 units SQ TID <input type="checkbox"/> Enoxaparin/Lovenox: <input type="checkbox"/> 40mg SQ daily(WT<150kg,CrCl>30mL/min) <input type="checkbox"/> 30mg SQ daily(WT<150kg,CrCl=10-29mL/min) <input type="checkbox"/> 30mg SQ BID(WT>150kg, CrCl>30mL/min) <b>(please refer to dosing guidelines)</b>



\* No further testing necessary if:

1. Revascularization within 5 yrs **PLUS** no new cardiac symptoms
2. **NEGATIVE** stress test within 2 yrs **PLUS** no new cardiac symptoms

### Contraindications & Precautions to Beta-blocker use:

- severe sinus bradycardia (less than 50 beats per minute)
- systolic BP < 100 mmHg
- hypersensitivity to beta-blockers
- second and third degree AV block or sick sinus syndrome
- Pregnancy (Metoprolol=Category C; Atenolol=Category D)
- Uncontrolled COPD/asthma
- Use with caution or avoid in known or suspected decompensated CHF
- Use with caution in combination with verapamil, diltiazem, amiodarone

1. **DO NOT** use beta-blocker for LOW RISK surgery (OUTPATIENT Procedures, superficial surgery, endoscopic procedures)
2. Use only for INPATIENT surgeries (including 23 hour admissions)
3. Use beta-blockers only for INTERMEDIATE-HIGH risk surgeries:
  - **Intermediate risk** (per ACC): head and neck surgery, carotid endarterectomy, intraperitoneal and intrathoracic surgery, orthopedic surgery, prostate surgery
  - **High risk** (per ACC) : emergent surgery, aortic and major vascular surgery, peripheral vascular surgery, anticipated long surgical procedures associated with blood loss and/or large fluid shifts
  - **High risk** (per RCRI): intrathoracic, intraperitoneal, vascular
4. When indicated, start beta-blocker at preop H&P, ideally at least 2 weeks prior to surgery (based upon above criteria)
5. Continue beta-blockade for 30 days postop (optimal), but MUST continue for a minimum of 7 days postop
6. Preferable to taper when discontinuing, usually 1 week taper sufficient – best if deferred to patient's primary care physician postoperatively
7. Drug/dose of choice:
  - Metoprolol 25-50mg PO BID
  - Caveats: Low BP at evaluation, Low HR at eval (generally beta-blockers are not initiated for HR < 65, though NOT contraindicated), elderly, dialysis patients, patients with heart failure → consider lower dose (i.e. Metoprolol 12.5mg BID) or NO beta-blocker; REMINDER: DO NOT give if HR < 50 bpm, Systolic BP < 100 mmHg)
8. Titrate to target HR 50-65bpm
9. Patient to monitor HR + BP daily and relay results to nurse coordinator within 3-4 days (approximately 4 dosing cycles) to discuss titration → titrate when appropriate every 3-4 days (titrate slower in heart failure, i.e. q1-2weeks)
10. If patient fails to call, nurse coordinator will call patients for follow-up
11. Down-titrate dose if patient experiences adverse side effects (i.e. dizziness/lightheadedness, syncope/presyncope, shortness of breath/wheezing, etc.)
12. Consider CR +/- glucose on all pre-surgical patients (in order to properly assess risk based on above RCRI criteria)
13. Continue current beta-blocker if patient already taking beta-blocker at preop assessment; consider up-titration if not at target HR

14. **NOTE:** The above represent general guidelines and if any uncertainty exists a referral should be made to the preop GMF clinic.

Note: This protocol may require revision after results of POISE trial are published. The POISE Trial is a large multi-centre, blinded, randomized controlled group trial of metoprolol vs placebo in 10,000 at risk patients undergoing noncardiac surgery. The POISE Trial will determine the impact of perioperative administration of metoprolol on cardiovascular events (defined as cardiovascular death, nonfatal myocardial infarction, or nonfatal cardiac arrest) during the 30 day post-operative period in at risk patients undergoing noncardiac surgery.

References:

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- Devereaux PJ, Beattie WS, Choi PTL et al. How strong is the evidence for the use of perioperative B-blockers in non-cardiac surgery? Systematic review and meta-analysis of randomised controlled trials. *BMJ*, doi:10.1136/bmj.38503.623646.8F (published 4 July 2005).
- Lindenauer PK, Pekow P, Wang K et al. Perioperative Beta-blocker therapy and mortality after major noncardiac surgery. *N Engl J Med*. 2005; 353:349-361.