

# Venous Thromboembolism Risk Factor Assessment

## Each Risk Factor Represents 1 Point

- Age 40-59 years
- Minor surgery planned
- History of prior major surgery
- Varicose veins
- History of inflammatory bowel disease
- Swollen legs (current)
- Obesity (BMI >30)
- Acute myocardial infarction (< 1 month)
- Congestive heart failure (< 1 month)
- Sepsis (< 1 month)
- Serious lung disease incl. pneumonia (< 1 month)
- Abnormal pulmonary function (COPD)
- Medical patient currently at bed rest
- Leg plaster cast or brace
- Central venous access
- Other risk factor \_\_\_\_\_
- Blood transfusion (<1 month)

## Each Risk Factor Represents 2 Points

- Age 60-74 years
- Major surgery (> 60 minutes)\*
- Arthroscopic surgery (> 60 minutes)\*
- Laparoscopic surgery (> 60 minutes)\*
- Previous malignancy
- Morbid obesity (BMI >40)

## Each Risk Factor Represents 3 Points

- Age 75 years or more
- Major surgery lasting 2-3 hours\*
- BMI > 50 (venous stasis syndrome)
- History of SVT, DVT/PE
- Family history of DVT/PE**
- Present cancer or chemotherapy
- Positive Factor V Leiden
- Positive Prothrombin 20210A
- Elevated serum homocysteine
- Positive Lupus anticoagulant
- Elevated anticardiolipin antibodies
- Heparin-induced thrombocytopenia (HIT)
- Other thrombophilia  
Type \_\_\_\_\_

\*Select only one from the surgery category

# Venous Thromboembolism Risk Factor Assessment

## Each Risk Factor Represents 2 Points

- ❑ Age 60-74 years
- ❑ Major surgery (> 60 minutes)\*
- ❑ Arthroscopic surgery (> 60 minutes)\*
- ❑ Laparoscopic surgery (> 60 minutes)\*
- ❑ Previous malignancy
- ❑ Morbid obesity (BMI >40)

## Each Risk Factor Represents 3 Points

- ❑ Age 75 years or more
  - ❑ Major surgery lasting 2-3 hours\*
  - ❑ BMI > 50 (venous stasis syndrome)
  - ❑ History of SVT, DVT/PE
  - ❑ **Family history of DVT/PE**
  - ❑ Present cancer or chemotherapy
  - ❑ Positive Factor V Leiden
  - ❑ Positive Prothrombin 20210A
  - ❑ Elevated serum homocysteine
  - ❑ Positive Lupus anticoagulant
  - ❑ Elevated anticardiolipin antibodies
  - ❑ Heparin-induced thrombocytopenia (HIT)
  - ❑ Other thrombophilia
- Type \_\_\_\_\_

## For Women Only (Each Represents 1 Point)

- ❑ Oral contraceptives or hormone replacement therapy
- ❑ Pregnancy or postpartum (<1 month)
- ❑ History of unexplained stillborn infant, recurrent spontaneous abortion ( $\geq 3$ ), premature birth with toxemia or growth-restricted infant

## Each Risk Factor Represents 5 Points

- ❑ Elective major lower extremity arthroplasty
- ❑ Hip, pelvis or leg fracture (< 1 month)
- ❑ Stroke (< 1 month)
- ❑ Multiple trauma (< 1 month)
- ❑ Acute spinal cord injury (paralysis)(< 1 month)
- ❑ Major surgery lasting over 3 hours\*

Total Risk Factor Score

V. Bahl, H. Hu, P. K. Henke, T. W. Wakefield, D. A. Campbell J, Caprini JA. Annals of Surgery In press 2009.

## VTE Risk and Suggested Prophylaxis For Surgical Patients

Total Risk Factor Score	Incidence of DVT	30-day Proven DVT Incidence*	Risk Level	Prophylaxis Regimen	Legend
0-1	<10%	0%	Low Risk	No specific measures; early ambulation	<b>IPC</b> - Intermittent Pneumatic Compression <b>LDUH</b> - Low Dose Unfractionated Heparin <b>LMWH</b> - Low Molecular Weight Heparin <b>FXa I</b> - Factor X Inhibitor
2	10-20%	0.7%	Moderate Risk	IPC, LDUH (5000U BID), or LMWH (<3400 U)	
3-4	20-40%	0.97%	High Risk	IPC, LDUH (5000U TID), or LMWH (>3400U) or FXa I	
5 or more	40-80% 1-5% mortality	1.94%	Highest Risk	Pharmacological: LDUH, LMWH (>3400 U), Warfarin, or FXa I alone or in combination with IPC	

\*30-day post-discharge clinically evident imaging proven DVT

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# Prophylaxis Safety Considerations: Check box if answer is 'YES'

## Anticoagulants: Factors Associated with Increased Bleeding

- Is patient experiencing any active bleeding?
- Does patient have (or has had history of) heparin-induced thrombocytopenia?
- Is patient's platelet count  $<100,000/\text{mm}^3$ ?
- Is patient taking oral anticoagulants, platelet inhibitors (e.g., NSAIDS, Clopidogrel, Salicylates)?
- Is patient's creatinine clearance abnormal? If yes, please indicate value \_\_\_\_\_

If any of the above boxes are checked, the patient may not be a candidate for anticoagulant therapy and you should consider alternative prophylactic measures such as IPC or FP.

## Intermittent Pneumatic Compression (IPC)

- Does patient have severe peripheral arterial disease?
- Does patient have congestive heart failure?
- Does patient have an acute superficial/deep vein thrombosis?

If any of the above boxes are checked, then patient may not be a candidate for intermittent compression therapy and you should consider alternative prophylactic measures. (IVC filter?)

Based on: V. Bahl, H. Hu, P. K. Henke, T. W. Wakefield, D. A. Campbell J, Caprini JA. *Ann Surg* 2009;DOI: 10.1097/SLA.0b013e3181b7fca6; Zakai NA, Wright J, Cushman M. *J Thromb Haem* 2004;2:2156-61; Seruya M, Venturi ML, Iorio ML. *J Plastic & Reconstructive Surgery* 2008;122:1701-8; Hatf D, Kenkel J, Nguyen M. *Plastic & Reconstructive Surgery* 2008;122:269-79; McLafferty RB, Lohr JM, Caprini JA, et al. *J Vasc Surg* 2007;45:142-8; McLafferty RB, Passman MA, Caprini JA, et al. *J Vasc Surg* 2008;48: 394-9; Nicolaidis AN et al: *INT Angiol* 2006; 25:101-161.; Arcelus JI, Caprini JA, Traverso CI. *Semin Thromb Hemost* 1991;17(4):322-5.; Borow M, Goldson HJ. *Am J Surg* 1981;141(2):245-51.; Caprini JA, Arcelus I, Traverso CI, et al. *Semin Thromb Hemost* 1991;17(suppl 3):304-12.; Caprini JA, Arcelus JI et al: *Scope* 2001; 8: 228-240.; Caprini JA, Arcelus JI, Reyna JJ. *Seminars in Hematology*, April 2001;38(2)Suppl 5:12-19.; Caprini, JA. *Dis Mon* 2005;51:70-78.; Oger E: *Thromb Haem*, 2000; 657-660.; Turpie AG, Bauer KA, Eriksson BI, et al. *Arch Intern Med* 2002; 162(16):1833-40.; Ringley et al: *American Surgeon* 2002; 68(3): 286-9.; Morris et al. *Arch Surg* 2002. 137(11):1269-73.; Sugarman HJ et al, *Ann Surg*: 2001;234 (1) 41-46, . Nguyen, NT, Hinojosa, MW, Fayad, C, et al. *Ann Surg* 2007;246(8):1021-1027

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