

Venous Thromboembolism Prophylaxis Recommendations for Medical/Surgery Patients

Instructions for Use:

- 1) Select specific Medical/Surgery Services patient category
- 2) In surgical patient, recommendations below are usually instituted peri-operatively. Prior to surgery, it is often appropriate to use risk assessment table for medical patients to determine appropriate pre-op prophylaxis.
- 3) From categories below select prophylaxis treatment and complete corresponding order on front of order sheet.

General Surgery Patients (Includes Critical Care)	Low Risk	• No prophylaxis other than early ambulation
	Moderate Risk and High Risk	• Heparin 5000 units subcutaneous every 8 hours starting after surgery – OR – • Enoxaparin (Lovenox) 40 mg (30 mg if CrCl 15 - 30 mL/min) subcutaneous daily*
	Very High Risk	• Enoxaparin (Lovenox) 40 mg (30 mg if CrCl 15 - 30 mL/min) subcutaneous daily* and in combination with pneumatic compression device – OR – • Heparin 5000 units subcutaneous every 8 hours starting after surgery and in combination with pneumatic compression device

*Abdominal Surgery: start 2 hours prior to surgery

Orthopedic Surgery Patients	Operative Patients	
	Hip Surgery	• Enoxaparin (Lovenox) 40 mg (30 mg if CrCl 15 - 30 mL/min) subcutaneous daily; start 12 hours prior to surgery – OR – • Enoxaparin (Lovenox) 30 mg subcutaneous every 12 hours (30 mg daily if CrCl 15 - 30 mL/min); start 12 – 24 hours after surgery if hemostasis is established – OR – • Fondaparinux (Arixtra) 2.5 mg subcutaneous daily (contraindicated if CrCl less than 30 mL/min); start 8 hours after surgery (<i>check formulary status</i>) • Warfarin (Coumadin) at 1800 hours daily, preoperatively and adjusted to INR range 2- 3 • Consider in combination with pneumatic compression device in addition to one of the above
	Knee Surgery	• Enoxaparin (Lovenox) 30 mg subcutaneous every 12 hours (30 mg daily if CrCl 15 - 30 mL/min); start 12 – 24 hours after surgery if hemostasis is established – OR – • Fondaparinux (Arixtra) 2.5 mg subcutaneous daily (contraindicated if CrCl less than 15 - 30 mL/min); start 8 hours after surgery (<i>check formulary status</i>) • Warfarin (Coumadin) at 1800 hours daily, preoperatively and adjusted to INR range 2- 3 • Consider in combination with pneumatic compression device in addition to one of the above
	Non-operative Patients	
	• May follow guidelines for medical patients below, when appropriate	

Neurosurgery	Neurosurgery – Intracranial Procedure	
		• Pneumatic compression device
	High Risk Patients	• Consider use of pharmacologic prophylaxis (heparin or enoxaparin (Lovenox)) if risk of bleeding is not felt to be high.
	Moderate Risk and High Risk	• Enoxaparin (Lovenox) 30 mg every 12 hours (30 mg daily if CrCl 15 - 30 mL/min) if risk of bleeding acceptable – OR – • Pneumatic compression device if risk of bleeding high
	Very High Risk	• Enoxaparin (Lovenox) 30 mg every 12 hours (30 mg daily if CrCl 15 - 30 mL/min) and in combination with pneumatic compression device
	Rehabilitation Phase of Acute Spinal Cord Injury	
	• Enoxaparin (Lovenox) 30 mg q 12 hours (30 mg daily if CrCl 15 - 30 mL/min) – OR – • Warfarin (Coumadin) at 1800 hours daily, preoperatively and adjusted to INR range 2- 3	

Medical Patients (Includes Critical Care)	Low Risk	• No prophylaxis other than early ambulation
	Moderate Risk and High Risk	• Heparin 5000 units subcutaneous every 8 hours – OR – • Enoxaparin (Lovenox) 40mg (30 mg if CrCl 15 - 30 mL/min) subcutaneous daily – OR – • Pneumatic compression device (if risk of bleeding high)
	Very High Risk	• Heparin 5000 units subcutaneous every 8 hours – OR – • Enoxaparin (Lovenox) 40 mg (30 mg if CrCl 15 - 30 mL/min) subcutaneous daily • CONSIDER pneumatic compression device in addition to either heparin or enoxaparin (Lovenox)

Gynecologic Surgery Patients	Low Risk *	• No prophylaxis other than early and aggressive ambulation
	Moderate Risk and High Risk **	• Heparin 5000 units subcutaneous every 8 hours; start 2 hours prior to surgery – OR – • Enoxaparin (Lovenox) 40mg (30 mg if CrCl 15 - 30 mL/min) subcutaneous daily; start 12 hours prior to surgery – OR – • Intermittent pneumatic compression device started just before surgery
	Very High Risk ***	• Heparin 5000 units subcutaneous every 8 hours; start 2 hours prior to surgery – OR – • Enoxaparin (Lovenox) 40mg (30 mg if CrCl 15 - 30 mL/min) subcutaneous daily; start 12 hours prior to surgery – OR – • Heparin or enoxaparin (Lovenox) with Intermittent pneumatic compression device

Low risk: *	Surgery less than 30 minutes in patient below 40 years with no additional risk factors
Moderate Risk: **	Surgery less than 30 minutes in patients with additional risk factors; surgery less than 30 minutes in patients 40-60 years with no additional risk factors; Major surgery in patients less than 40 with no additional risk factors
High Risk: **	Surgery less than 30 minutes in patients over 60 years or with additional risk factors, major surgery in patients over 40 years with additional risk factors
Very High Risk: ***	Major surgery in patients older than 60 years plus prior VTE, cancer, or hypercoagulable state

The following recommendations are derived from the references listed below and represent consensus guidelines for the groups of patients. The physician must make decisions about VTE prophylaxis for individual patients by combining knowledge of the literature with knowledge of patient-specific factors and clinical judgment. As this is a rapidly evolving field, these guidelines are not intended to replace evidence-based clinical practice cited in current literature. **References:**

- Committee on Practice Bulletins—Gynecology, American College of Obstetricians and Gynecologists. ACOG Practice Bulletin No. 84: Prevention of deep vein thrombosis and pulmonary embolism. *Obstet Gynecol.* 2007 Aug;110(2 Pt 1):429-40.
- Geerts WH, Pineo GF, Heit JA, Bergqvist D, Lassen MR, Colwell CW, Ray JG. Prevention of venous thromboembolism: the Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. *Chest.* 2004 Sep;126(3 Suppl):338S-400S.
- Geerts W, Selby R. Prevention of venous thromboembolism in the ICU. *Chest.* 2003 Dec;124(6 Suppl):357S-363S.
- Lovenox [package insert]. sanofi-aventis U.S. LLC., Bridgewater, NJ, 08807, May 2007.

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