

Risk Assessment for Non-Bariatric Surgical Patients 12-17 years old

1.0 DEFINITIONS

- 1.1. **Altered mobility:** A permanent or temporary state in which the patient is unable to ambulate freely, corresponds to a Braden Q scale for mobility 1-3 or activity 1-2.
- 1.2. **Deep Vein Thrombosis (DVT):** A thrombus in a deep vein.
- 1.3. **Graduated Compression Stocking (GCS):** Elastic stockings, either knee- or thigh-high, also known as TED hose.
- 1.4. **Risk category: Refer to VTE Risk Factors algorithm below**
 - 1.4.1. **Low risk:** No VTE risk factors
 - 1.4.2. **Moderate risk:** Multiple risk factors for VTE in the absence of altered mobility or has altered mobility with one or fewer additional risk factors.
 - 1.4.3. **High risk:** Altered mobility plus two or more additional risk factors
- 1.5. **Sequential Compression Device (SCD):** A device designed to intermittently squeeze blood from underlying deep veins in the leg upon compression of an inflatable sleeve, and to allow the blood to flow again when it decompresses.
- 1.6. **Venous Thromboembolism (VTE):** A thrombus in a vein or one that has broken free and is carried in the bloodstream (embolus).

2.0 GUIDELINE

- 2.1. It is recommended that patient's age 12-17 years be assessed for VTE risk factors, and based on that assessment, assigned to a risk category (low, moderate, high) using the VTE Risk Assessment & Prevention flowsheet in EPIC.
 - 2.1.1. Nursing will complete the VTE Risk Assessment & Prevention flowsheet in EPIC at the time of inpatient admission, including in Same Day prior to surgery, and automatically place SCDs if indicated.
 - 2.1.2. Reassessed at 24 hours of hospitalization by nursing staff.
 - 2.1.3. This should be documented in the patient's medical record in the VTE Risk Assessment & Prevention flowsheet in EPIC.
- 2.2. It is recommended that VTE prophylaxis be administered based on risk category as soon as feasible, but within 24 hours of assessment, unless there are contraindications (See below).
- 2.3. If planning to initiate Lovenox prophylaxis, it is recommended:
 - 2.3.1. In surgical patients to seek surgical input regarding bleeding risk prior to initiation
 - 2.3.2. Obtain Hematology consultation when considering alternative pharmacologic agents.

VTE Prevention Intervention Based on VTE Risk Assessment

	LOW RISK	MODERATE RISK		HIGH RISK
Mobility Status ¹	Baseline	Baseline	Altered	Altered
Number of VTE Risk Factors ²	0	1 or more	0-1	2 or more
Interventions: <i>with no contraindications present</i>				
○ Encourage highest degree of mobility	Yes	Yes	Yes	Yes
○ Sequential Compression Device (SCD)	-	Yes	Yes	Yes
○ Prophylactic Anticoagulation ³	-	-	-	Consider

¹ **Baseline Mobility:** *usual state of mobility*

Altered Mobility: *inability to ambulate freely, corresponds to a Braden Q scale for mobility 1-3 or activity 1-2*

² **VTE Risk Factors:**

- Critically ill (in the intensive care unit)
- Presence of a Central Venous Catheter (PICC, non-tunneled or tunneled)
- Obesity (BMI >95th percentile for age)
- Major Trauma (>1 extremity, pelvis or spine injury)
- Active cancer/malignancy
- Acute systemic infection/sepsis
- Chronic Inflammatory disorder (IBD, Lupus)
- Cyanotic heart disease
- Estrogen therapy
- Thrombophilic/Clotting disorder
- Personal history of blood clots
- Recent invasive surgery within past 30 days
- Family history of clots in 1st degree relative

³ **Prophylactic Anticoagulation:** *utilize a form of low molecular weight heparin or subcutaneous unfractionated heparin. If a patient is already on other forms of anticoagulants no additional prophylactic anticoagulation is needed. Aspirin or other antiplatelet therapy is not considered VTE prophylaxis.*

Contraindications to SCD (sequential compression device)?	☐ Suspected or existing deep vein thrombosis ☐ Acute fracture ☐ Skin conditions (burn, dermatitis, wound) ☐ Lower extremity conditions which result in significant pain with compression (solid tumor, veno-occlusive episode in sickle cell disease) ☐ Patients undergoing lower extremity venous or arterial access (including femoral venous/arterial access)	☐ Yes (if any checked) ☐ No
Contraindications to Lovenox?	☐ Active bleeding ☐ Known bleeding disorder ☐ Epidural or lumbar puncture in the last 12 hours ☐ Platelets <50,000/mm or heparin-induced thrombocytopenia ☐ Brain tumor ☐ Pelvic fracture in last 48 hours ☐ Recent or scheduled neurosurgical procedure within 48 hours ☐ Uncontrolled hypertension	☐ Yes (if any checked) ☐ No

High Risk	☐ Sequential Compression Device (SCD) AND ☐ Prophylactic Anticoagulation Lovenox * (first dose 12 hours after surgery and hold 12h prior to surgical procedure) ○ < 50 kg = 0.5 mg/kg/dose subQ BID ○ 50-125 kg = 30 mg subQ BID <u>or</u> 40mg subQ daily ○ > 125 kg = 40 mg subQ BID * If renal dysfunction, consider decreasing dose and checking LMWH level 4 hours after 2 nd or 3 rd dose (goal 0.1-0.3 unit/mL) ** If considering other options, consult Hematology.
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3.0 REFERENCES

- 4.1 Petty, J. K. (2017). Venous thromboembolism prophylaxis in the pediatric trauma patient. *Seminars in Pediatric Surgery*, 26, 14-20.
- 4.2 Mahajerin, A., Petty, J., Hanson, S. J., Thompson, A. J., O'Brien, S. H., Streck, C. J., . . . Faustino, V. S. (2016). Prophylaxis against venous thromboembolism in pediatric trauma: A practice management guideline from the Eastern Association for the Surgery of Trauma and the Pediatric Trauma Society. *Journal of Trauma and Acute Care Surgery*, 82(3), 627-636.
- 4.3 Landisch, R. M., Hanson, S. J., Cassidy, L. D., Braun, K., Punzalan, R. C., & Gourlay, D. M. (2016). Evaluation of guidelines for injured children at high risk for venous thromboembolism: A prospective observational study. *Journal of Trauma and Acute Care Surgery*, 82(5), 836-844.