VTE Prophylaxis Algorithm for Hospitalized Surgery Patients

Visit [www.hopkinsmedicine.org/armstrong/bloodclots](http://www.hopkinsmedicine.org/armstrong/bloodclots) for more information on venous thromboembolism prevention.
*Major VTE Risk Factor

**Contraindications**

- Creatinine clearance < 30 ml/min or unstable renal function (potential for CrCl to decline below 30ml/min during therapy)

**Very High Risk w/ contraindications**

- TEDS/SCDs
  - Use mechanical prophylaxis until contraindication no longer present. Review patient status daily (0,2)

**Very High Risk w/ normal renal function**

- TEDS/SCDs (0,1,4)
  - Heparin 5000 units sc q8h (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - Enoxaparin 40mg sc qDay

**Very High Risk w/ Systemic Anticoag**

- No Prophylaxis Recommended
  - Review patient status daily (0,3)

**Yes (0)**

**No (1)**

**Yes (2)**

**No (5)**

**Yes (3)**

**Yes (4)**
*Major VTE Risk Factor

- **TEDs/SCDs**
  - Use mechanical prophylaxis until contraindication no longer present. Review patient status daily.

- **No Prophylaxis Recommended**
  - Review patient status daily.

*Minor VTE Risk Factor

- **Contraindications**
  - **TEDs/SCDs**
  - Use mechanical prophylaxis until contraindication no longer present. Review patient status daily.

*Contraindications

- **Age >60**

- **Age >40**

- **Very High Risk w/o renal function**

- **Heparin 5000 units sc q8h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - Plus
  - **TEDs/SCDs**

- **Very High Risk With Renal Function**

- **Heparin 5000 units sc q8h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - Plus
  - **TEDs/SCD**

  - **Enoxaparin 40mg sc qDay**
  - (First dose 2 hours pre-op and then 12-24 hours post-op)
  - (Remove epidural catheter at nadir (20-22 hrs.) of anticoagulant effect and wait at least 2 hours after catheter removal to redose)
  - Plus
  - **TEDs/SCDs**

*High Risk w/ Contraindications

- **Heparin 5000 units sc q8h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - Plus
  - **TEDs/SCDs**

*High Risk w/ Systemic Anticoag

- **Heparin 5000 units sc q8h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - Option to add
  - **TEDs/SCD**

*High Risk w/o contraindications

- **Heparin 5000 units sc q12h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - With option to ADD
  - **TEDs/SCDs**

*Moderate Risk w/ contraindications

- **No Prophylaxis**
  - **TEDs/SCDs**
  - Use mechanical prophylaxis until contraindication no longer present. Review patient status daily.

*Low Risk w/ Systemic Anticoag

- **No Prophylaxis Recommended**
  - **TEDs/SCD**
  - **Enoxaparin 40mg sc qDay**
  - (First dose 2 hours pre-op and then 12-24 hours post-op)
  - (Remove epidural catheter at nadir (20-22 hrs.) of anticoagulant effect and wait at least 2 hours after catheter removal to redose)
  - Plus
  - **TEDs/SCDs**

*Low Risk w/o contraindications

- **No Prophylaxis Recommended**
  - **TEDs/SCD**
  - **Enoxaparin 40mg sc qDay**
  - (First dose 2 hours pre-op and then 12-24 hours post-op)
  - (Remove epidural catheter at nadir (20-22 hrs.) of anticoagulant effect and wait at least 2 hours after catheter removal to redose)
  - Plus
  - **TEDs/SCDs**

*Very High Risk w/o renal function

- **Heparin 5000 units sc q8h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - Plus
  - **TEDs/SCDs**

*Very High Risk With Renal Function

- **Heparin 5000 units sc q8h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - Plus
  - **TEDs/SCD**

  - **Enoxaparin 40mg sc qDay**
  - (First dose 2 hours pre-op and then 12-24 hours post-op)
  - (Remove epidural catheter at nadir (20-22 hrs.) of anticoagulant effect and wait at least 2 hours after catheter removal to redose)
  - Plus
  - **TEDs/SCDs**

*High Risk w/ contraindications

- **Heparin 5000 units sc q12h**
  - (Give first dose 2 hrs. pre-op and then beginning 12-24 hours post-op)
  - With option to ADD
  - **TEDs/SCDs**

*Moderate Risk w/ contraindications

- **No Prophylaxis**
  - **TEDs/SCDs**
  - Use mechanical prophylaxis until contraindication no longer present. Review patient status daily.

*Low Risk w/ Systemic Anticoag

- **No Prophylaxis Recommended**
  - **TEDs/SCD**
  - **Enoxaparin 40mg sc qDay**
  - (First dose 2 hours pre-op and then 12-24 hours post-op)
  - (Remove epidural catheter at nadir (20-22 hrs.) of anticoagulant effect and wait at least 2 hours after catheter removal to redose)
  - Plus
  - **TEDs/SCDs**

*Low Risk w/o contraindications

- **No Prophylaxis Recommended**
  - **TEDs/SCD**
  - **Enoxaparin 40mg sc qDay**
  - (First dose 2 hours pre-op and then 12-24 hours post-op)
  - (Remove epidural catheter at nadir (20-22 hrs.) of anticoagulant effect and wait at least 2 hours after catheter removal to redose)
  - Plus
  - **TEDs/SCDs**
Major VTE Risk Factors
- Previous VTE
- Cancer
- Thrombophilia
- Prolonged procedure (> 2 hrs.)
- NYHA Class III/IV Heart Failure
- Respiratory failure requiring mechanical ventilation
- Acute Stroke with paresis (< 3 mos.)
- Perioperative Bed Rest > 3 days

Minor VTE Risk Factors
- Sepsis
- Central venous catheter
- Systemic Estrogens/
- Selective estrogen receptor modulators (e.g., Tamoxifen)
- Inflammatory bowel disease

Contraindications
- High risk of bleeding
- Active bleeding
- Systemic anticoagulation
- INR ≥ 1.3 or aPTT ratio ≥ 1.3
- Platelet count < 100,000

Key:
0 - Major Risk Factor
1 - No Contraindications
2 - Contraindications
3 - Systemic Anticoagulation
4 - Unstable Renal Function
5 - Normal renal function
6 - Minor Risk Factor
7 - No Major Risk Factor
8 - no minor risk factor
9 - Age greater than 60
10 - Age less than 60
11 - Age greater than 40
12 - Age less than 40