

2. CLINICAL MANAGEMENT GUIDELINES
E. VTE Prophylaxis

Chemical VTE Prophylaxis Guidelines for Patients with Traumatic Injuries
All Trauma Patients Except Special Populations Discussed Below:

Weight-Based Dosing:

Dose: 0.5 mg/kg BID.

Check Anti Factor Xa at extremes of weight:

BMI < 20

BMI > 35

Anti-Factor Xa Levels and Adjustments:

Draw level at 4 hours after 3rd dose (4-6 hours).

Target peak levels:

Prophylactic dose: 0.2 – 0.4 units/mL

Therapeutic dosing: 0.5 – 1 units/mL

Enoxaparin Anti-Xa Titration for Prophylaxis Dosing (target 0.2-0.5 IU/mL)

Anti-Xa Level (IU/mL)	Hold Dose	Dosage Change*	Next Anti-Xa Level
< 0.2	N/A	Increase 25%	4-6 hours after 3 rd consecutive dose
0.2 – 0.5	N/A	None	Weekly or as clinically indicated
0.51 – 1	N/A	Decrease 25%	4-6 hours after 3 rd consecutive dose
> 1	Until level is < 0.3	Decrease 40% Initiate new dose when level < 0.3	Every 12 hours until level < 0.3

*Round to the nearest 10 mg dose (e.g. 74 mg → 70 mg; 75 mg → 80 mg)

Holding of DVT Prophylaxis Prior to Surgery:

Never on the Trauma/ ACS service, unless specifically instructed by a Trauma or ACS Attending. For consultant/subspecialty services, any holds/interruptions must involve discussion with the Trauma/ ACS Attending.

Kidney Dysfunction:

Lovenox is safe in patients with renal dysfunction. Dose adjustment based on Creatinine Clearance (CrCl):

CrCl ≥ 30 mL/min -> No Adjustment

CrCl < 30 mL/min -> Reduce to 30 mg daily (from q12h)

If using SQH, use 5,000 units q8h, For BMI ≥ 40 or weight ≥ 120 kg use SQH 7,500 q8h

Obesity:

For BMI ≥ 40 OR weight ≥ 120 kg, use adjusted weight (IBW + 0.4 * (ABW - IBW)) for weight based Lovenox

If using SQH (as with CrCl < 30 mL/min), use 7,500 units q8h or Lovenox 40 mg daily

Pain Catheters:

LMWH Prophylaxis (Lovenox) is considered safe for all types of blocks and indwelling pain catheters.

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Types of blocks/catheters:

- Neuraxial (Epidural) / Deep (paravertebral)
 - o **Dose: 40 mg to 60 mg, QD**
 - < 50 kg = 0.5 mg/kg daily
 - 50-74 kg = 40 mg daily
 - 75 - 99 kg = 50 mg daily
 - ≥ 100 kg = 60 mg daily
 - o **For TBI + Pain Catheter -> max dose of 40 mg Daily**
- ESP/serratus plane, peripheral

No Restriction on Chemical DVT Prophylaxis (Use standard dosing)

Lovenox should be **held 12 hours prior to insertion** and for **12 hours after** removal. Lovenox can be **restarted 12 hours after placement**.

SQH should be **held 4 hours prior to insertion** and for **4 hours after** removal.

For patients with renal dysfunction (CrCl < 30) and obesity, use **SQH 5,000 q8h** in accordance with WMC Dept. Of Anesthesia Neuraxial guidelines (2021)

Traumatic Spine Injury

- Patients with spine fracture waiting for MRI; if MRI not done within 24 hours, then:
 - o In patients without neuro deficit - at minimum SQH 5,000 q8h will be started on HD #1, then changed to Lovenox (0.5 mg/kg BID) within 24 hours if no EDH found on MRI.
 - o In patients with COMPLETE spinal cord injury/ ASIA A - at minimum SQH 5,000 q8h will be started within 24 hours of admission, then changed to Lovenox (0.5 mg/kg BID) within 24 hours if no EDH found on MRI.
 - o In patients with INCOMPLETE spinal cord injury and no acute deterioration in neurologic exam - at minimum, SQH 5,000 q8h will be started on HD #1, then changed to Lovenox (0.5 mg/kg BID) within 24 hours if no EDH found on MRI.
- Patients with spine fracture without EDH will receive Lovenox (0.5 mg/kg BID) within 24 hours on the day of admission.
- Patients with spine fracture and epidural hematoma (EDH) will NOT be placed on DVT prophylaxis until cleared by the Spine Service.
- Patients can receive Lovenox (0.5 mg/kg BID) 24 hours after uneventful spine surgery, with appropriate communication between the trauma surgery team and the operative team (Orthopedics or Neurosurgery) to ensure that there are no contraindications. Any deviation will be explicitly documented in the chart by the Spine Service.
- Lovenox should be withheld 12 hours before a planned operative spine procedure.

Traumatic Brain Injury (TBI)

NOTE - Lovenox is preferred compared to SQH.

Lovenox dosing will be 0.5 mg/kg BID and shall not exceed 30 mg q12 hours in patients with traumatic brain injury

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- BIG 1: can start Lovenox 24 hrs after initial head CT or head injury if date/time of injury is known.
- BIG 2: can start Lovenox 24 hrs after initial head CT and if neurologic exam is unchanged or improved compared to admission exam.
- BIG 3: can start Lovenox 24 hrs after confirmed stability of bleed on repeat head CT by NES.
- Lovenox can be started 24 hrs after placement of EVD/ICP monitor.
 - If post-procedure head CT requested, will wait to start Lovenox until head CT reviewed by NES for new hemorrhage/stability, etc.
- Lovenox can be started 24 hrs after intracranial surgery.
 - If post-procedure head CT requested, will wait to start Lovenox until head CT reviewed by NES for new hemorrhage/stability, etc.

NOTE: If NES attending wants to hold Lovenox or start different agent, then that will be relayed to Trauma service by NES service.

Solid Organ Injury

- Patients with AAST Grade 1-3 solid organ injuries and who undergo angioembolization, splenectomy, or nephrectomy:
 - Chemical VTE prophylaxis should be initiated on admission.
- Patients with AAST Grade 4 and 5 solid organ injuries:
 - Chemical VTE prophylaxis should be initiated 24 hours after hemoglobin levels are stable (+/- 1.5 g/dL in 24 hours) or 48 hours after injury elapses, whichever is sooner.

Additional Considerations:

- Exclude patients actively bleeding or requiring transfusion.
- Exclude patients actively receiving DOACs or therapeutic anticoagulation.
- Exclude patients with specific conditions or injuries as per specialty recommendations (e.g., ocular trauma with recommendations by Ophthalmology, orthopedic injuries with specific Aspirin recommendations).
- Exclude patients with severe coagulopathy INR ≥ 1.5 and/or platelets (PLTs) ≤ 50

References:

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