



^a Low Dose Unfractionated Heparin (LDUH): dose adjustment not needed in renal failure (Clcr<30) or dialysis.

^b Low Molecular Weight Heparin (LMWH) (formulary agent is dalteparin): dose adjustment not needed in renal failure (Clcr<30). Use in dialysis is not absolutely contraindicated, but dialysis patients might preferentially receive heparin. **For pts with BMI>40, use enoxaparin 40mg SQ bid.**

^c Discuss with service that has expertise in specific bleeding issue (e.g. Gastroenterology for GIB, Neurosurgery for SAH, Neurology for hemorrhagic stroke, Orthopedics for hip fracture, etc.) **The 48-72 hour period of stability is intended as a guideline only and each case must be considered individually for optimal patient safety.**

^d Special Caution due to risk of spinal hematoma. **See Anticoagulation Guidelines for Neuraxial Anesthesia at www.uwmcacc.org for detailed dosing and timing guidelines.**

^e Mechanical Devices: 1) Mechanical devices should be used when anticoagulant-based prophylaxis is contraindicated (1C). 2) It is common practice to utilize SCD's intraoperatively when anticoagulant-based prophylaxis is withheld, however, there is NO evidence basis supporting this practice; 3) Mechanical devices may be removed when the patient is initiated on anticoagulant-based prophylaxis except in selected high risk groups described in table.

^f Extended DVT prophylaxis is recommended following THR and TKR, but may also be a consideration in any high risk patient, including those who will remain bed bound post-discharge.

^g ACCP endorses either LDUH or LMWH as a 1A recommendation for ischemic stroke. Several reports favor LMHW over LDUH.

^h Evidence to favor LMHW over LDUH in lower risk trauma patients is lacking, however, evidence consistently favors LMHW in higher risk patients.

ⁱ Suboptimal prophylaxis defined as initiation of LMWH > 36 hours after trauma, interruption of LMWH during hospital course, or transfer from an outside facility.

Inpatient Acquisition COSTS: heparin 5000 Units (\$1.61 / dose); dalteparin 5000 units (\$18.35/dose)

Level of Evidence: Grade 1 benefit clearly outweighs risks and burdens; Grade 2: benefits vs risks and burdens closely balanced;
Quality of the Data: Grade A = consistent evidence from RCTs or exceptionally strong evidence from observational studies; Grade B = Evidence from RCTs with important limitations or very strong evidence from observational studies; Grade C = Evidence from observational studies, case series or from RCTs with serious flaws or indirect evidence



Clinical Group	1st Line Regimen	2nd Line Regimen	SCD / ES Augmentation?	Duplex Screen in Asymptomatic?	Extended Prophylaxis? ^f
MEDICALLY ILL					
Moderate Risk for DVT: Medical illness w/reduced mobility.	LDUH 5000 units SQ q8h (or q12h) (1A)	Dalteparin 5000 units SQ daily (1A)	No	No	No
High Risk for DVT: ICU Patients, thrombophilia active malignancy, previous VTE	Dalteparin 5000 units SQ daily (1A)	LDUH 5000 units SQ q8h (1A)	May be effective in high risk patients. (1C)	No	Consider in high risk patients.
NEUROLOGY					
Ischemic stroke ⁹	Dalteparin 5000 units SQ daily (1A)	Mechanical prophylaxis	May be effective in high risk patients. (1C)	No	Consider in high risk patients.
Hemorrhagic stroke (when clinically stable and hemorrhage on CT is stable.)	LDUH 5000 units SQ q8h or (q12h) (1A)	Dalteparin 5000 units SQ daily (1A)	No	No	No
TRAUMA/SPINAL CORD INJURY					
Trauma (As soon as risk of bleeding is low enough to permit use of prophylactic anticoagulants.) (1A)	Dalteparin 5000 units SQ daily (1A)	Mechanical prophylaxis (1B)	No	High risk for VTE (SCI, LE or pelvic fx, or head injury) who have received no or suboptimal prophylaxis ⁱ . (1C)	LMWH or warfarin recommended during inpatient rehabilitation (2C)
Spinal Cord Injury (As soon as risk of bleeding is low enough to permit use of prophylactic anticoagulants.) (1A)	Dalteparin 5000 units SQ daily (1A)	LDUH 5000 units SQ Q8 ^o Plus mechanical prophylaxis (1B)	May be effective in high risk patients (1C)	No	LMWH or Warfarin recommended in rehabilitation phase. (1C)
NEUROSURGERY					
General neurosurgery	mechanical prophylaxis (1A)	Dalteparin 5000 units SQ daily (2A) or LDUH 5000 units SQ q8h (or q12h) (2B)	Recommended in combination with dalteparin 5000 units SQ daily or LDUH 5000 units SQ q8 or q12h in very high risk patients (2B)	No	No
ORTHOPEDICS					
Knee arthroscopy	<i>Early Mobilization (2B)</i>	Not Applicable	No	No	No
Knee arthroscopy with additional VTE risk factors or complicated procedure	<i>Dalteparin 5000 units SQ daily (1B)</i>	Not Applicable	No	No	No



Clinical Group	1st Line Regimen	2nd Line Regimen	SCD / ES Augmentation?	Duplex Screen in Asymptomatic?	Extended Prophylaxis? ^f
ORTHOPEDECS					
Elective total hip replacement	Dalteparin 5000 units SQ daily (1A) (started either 12 hrs pre-op or 10-12 hrs post-op)	Warfarin to target INR 2-3 (1A) (started either the night before surgery or the evening of the day of surgery)	No	No	Dalteparin (1A) or Warfarin (1B) recommended for up to 35 days
Elective total knee replacement	Dalteparin 5000 units SQ daily (1A) (started either 12 hrs pre-op or 10-12 hrs post-op)	Warfarin to target INR 2-3 (1A) (started either the night before surgery or the evening of the day of surgery)	No	No	Dalteparin (1C) or Warfarin (1C) recommended for up to 35 days
Hip fracture surgery	Dalteparin 5000 units SQ daily (1A) (started either 12 hrs pre-op or 10-12 hrs post-op)	Warfarin to target INR 2-3 (1B) (started either the night before surgery or the evening of the day of surgery)	No	No	Dalteparin (1C) or Warfarin (1C) recommended for up to 35 days
SPINAL SURGERY					
no VTE risk factors	Early Mobilization (2C)	Not Applicable	No	No	No
additional VTE risk factors	LDUH 5000 units SQ q8h (or q12h) (1B)	Dalteparin 5000 units SQ daily (1B)	Recommended in high risk patients (2C)	No	Consider in high risk patients.
BURNS					
with additional risk factors for VTE	LDUH 5000 units SQ q8h (or q12h) (1C)	Dalteparin 5000 units SQ daily (1C)	No	No	Consider in high risk patients.
GENERAL SURGERY/LAPAROSCOPY					
Low risk for DVT: Minor surgery in mobile patients	Early Mobilization (1A)	Not Applicable	No	No	No
Moderate risk for DVT: Major surgery for benign disease	LDUH 5000 units SQ or q8h (or q12h) (1A)	Dalteparin 5000 units SQ daily (1A)	No	No	No
High risk for DVT: Major surgery for cancer, or multiple DVT risk factors.	Dalteparin 5000 units SQ daily (1A)	LDUH 5000 units SQ q8h (1A)	May be effective in high risk patients (1C)	No	Consider in high risk patients, especially cancer patients. (2A)
BARIATRIC SURGERY					
Bariatric procedures	Enoxaparin 40mg SQ q12h (1C)	LDUH > 5000 units q8h (1C)	Recommended as an alternative to pharmacologic prophylaxis alone (1C)	No	Consider in high risk patients.