

**TABLE 15. Neuraxial\* Anesthesia in the Patient Receiving Thromboprophylaxis**

	Antiplatelet Medications	UFH		
		Subcutaneous	Intravenous	LMWH
German Society for Anaesthesiology and Intensive-Care Medicine†	NSAIDs: no contraindication; hold LMWH, fondaparinux 36–42 hrs Thienopyridines and GP IIb/IIIa are contraindicated	Needle placement 4 hrs after heparin; heparin 1 hr after needle placement or catheter removal	Needle placement and/or catheter removal 4 hrs after discontinuing heparin, heparinize 1 hr after neuraxial technique; delay bypass surgery 12 hrs if traumatic	Neuraxial technique 10–12 hrs after LMWH; next dose 4 hrs after needle or catheter placement Delay block for 24 hrs after therapeutic dose
Belgian Association for Regional Anesthesia‡	NSAIDs: no contraindication Discontinue ticlopidine 14 d, clopidogrel 7 d, GP IIb/IIIa inhibitors 87–48 hrs in advance	Not discussed	Heparinize 1 hr after neuraxial technique Remove catheter during normal aPTT; reheparinize 1 hr later	Neuraxial technique 10–12 hrs after LMWH; next dose 4 hrs after needle or catheter placement Delay block for 24 hrs after therapeutic dose
American Society of Regional Anesthesia and Pain Medicine	NSAIDs: no contraindication. Discontinue ticlopidine 14 d, clopidogrel 7 d, GP IIb/IIIa inhibitors 8–48 hrs in advance	No contraindication with twice-daily dosing and total daily dose <10,000 U, consider delay heparin until after block if technical difficulty anticipated. The safety of neuraxial blockade in patients receiving doses greater than 10,000 units of UFH daily, or more than twice daily dosing of UFH has not been established.	Heparinize 1 hr after neuraxial technique, remove catheter 2–4 hrs after last heparin dose; no mandatory delay if traumatic	Twice-daily dosing: LMWH 24 hrs after surgery, regardless of technique; remove neuraxial catheter 2 hrs before first LMWH dose  Single-daily dosing: according to European statements BUT with no additional hemostasis-altering drugs Therapeutic dose: delay block for 24 hrs
American College of Chest Physicians§	NSAIDs: no contraindication Discontinue clopidogrel 7 d before neuraxial block.	Needle placement 8–12 hrs after dose; subsequent dose 2 hrs after block or catheter withdrawal	Needle placement delayed until anticoagulant effect is minimal	Needle placement 87–12 hrs after dose; subsequent dose 2 hrs after block or catheter withdrawal. Indwelling catheter safe with twice-daily dosing Therapeutic dose: delay block for 18+ hrs
*For patients undergoing deep plexus or peripheral block, follow ASRA recommendations for neuraxial techniques.				
†Adapted from the German Society of Anesthesiology and Intensive Care Medicine Consensus guidelines. <sup>103</sup>				
‡Adapted from the Belgian Association for Regional Anesthesia. Working party on anticoagulants and central nerve blocks. <sup>68</sup>				
§Adapted from the American College of Chest Physicians. <sup>7</sup>				

Warfarin	Fondaparinux	Direct Thrombin Inhibitors	Thrombolytics	Herbal Therapy
INR <1.4 for needle/catheter insertion and withdrawal	Needle placement 36–42 hrs after last dose, wait 6–12 hrs after catheter removal for subsequent dose	Needle placement 8–10 hrs after dose; delay subsequent doses 2–4 hrs after needle placement	Absolute contraindication	No contraindication
INR <1.4 for needle/catheter insertion and withdrawal	Needle placement 36 hrs after last dose. Indwelling epidural catheter not recommended	Needle placement 8–10 hrs after dose; delay subsequent doses 2–4 hrs after needle placement	Absolute contraindication	Not discussed
Normal INR (before neuraxial technique); remove catheter when INR ≤ 1.5 (initiation of therapy)	Single injection, atraumatic needle placement or alternate thromboprophylaxis. Avoid indwelling catheters.	Insufficient information Suggest avoidance of neuraxial techniques	Absolute contraindication	No evidence for mandatory discontinuation before neuraxial technique; be aware of potential drug interactions
Avoid or limit epidural analgesia to <48 hrs. Remove catheter when INR <1.5	Single-injection spinal safe Avoid epidural analgesia	Not addressed	Not addressed	Not addressed