



# ANTICOAGULATION GUIDELINES FOR NEURAXIAL PROCEDURES

Guidelines to Prevent Spinal Hematoma following Epidural/Intrathecal/Spinal Procedures and Perineural Hematoma following Peripheral Nerve Procedures

**ATTENTION! WHEN CAN YOU SAFELY DO NEURAXIAL/PERIPHERAL NERVE PROCEDURES OR GIVE ANTICOAGULANTS?**  
 Neuraxial routes include epidural and intrathecal infusions, implanted intrathecal pumps, and spinal injections.  
 Peripheral routes include all peripheral nerve and plexus infusions. **NOTE: Bloody tap/procedure? Anesthesia to call Pain Service**

MEDICATION	PRIOR TO NEURAXIAL/NERVE PROCEDURE Minimum time between last dose of anticoagulant and spinal injection OR neuraxial/nerve catheter placement	WHILE NEURAXIAL/NERVE CATHETER IN PLACE Restrictions on use of anticoagulants in patients with neuraxial/nerve catheters in place	AFTER NEURAXIAL/NERVE PROCEDURE Minimum time between neuraxial/nerve catheter removal OR spinal/nerve injection and next anticoagulant dose
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## ANTICOAGULANTS FOR VTE PROPHYLAXIS

heparin unfractionated 5000 units q8 or q12 hr	May be given; no time restrictions for catheter placement/removal or spinal injections Do NOT call Pain Service		
heparin unfractionated 7500 units SQ q8 hr	8 hrs	<b>CONTRAINDICATED</b> while catheter in place: may NOT be given unless approved by Pain Service Attending	2 hrs
dalteparin (Fragmin) 5000 units SQ qday	12 hrs (longer in renal impairment)	May be given BUT contact Pain Service regarding dose timing •Must wait 6-8 hrs after catheter PLACEMENT before giving dose •Must wait 18-24 hours after last dose before REMOVING catheter	2 hrs
enoxaparin (Lovenox) 40mg SQ qday			
enoxaparin (Lovenox) 30mg SQ q12 hr or 40mg SQ q12 hr	12 hrs (longer in renal impairment)	<b>CONTRAINDICATED</b> while catheter in place: may NOT be given unless approved by Pain Service Attending	2 hrs
fondaparinux (Arixtra) < 2.5mg SQ qday	48 hrs (longer in renal impairment)		
rivaroxaban (Xarelto) 10mg po qday	18 hrs (longer in renal impairment)	May be given BUT contact Pain Service regarding dose timing •Must wait 6-8 hrs after catheter PLACEMENT before giving dose •Must wait 18-24 hours after last dose before REMOVING catheter	6 hrs (per manufacturer recommendations)

## AGENTS USED FOR FULL SYSTEMIC ANTICOAGULATION

dabigatran (Pradaxa)	72 hrs (longer in renal impairment)	<b>CONTRAINDICATED</b> while catheter in place: may NOT be given unless approved by Pain Service Attending	2 hours
dalteparin (Fragmin) 200 Units/kg SQ qday or 100 Units/kg SQ q12 hr	24 hrs (longer in renal impairment)		
drotrecogin (Xigris)	24 hrs (longer in renal impairment)		
enoxaparin (Lovenox) 1.5mg/kg SQ qday or 1mg/kg SQ q12h	24 hrs (longer in renal impairment)		
fondaparinux (Arixtra) 5-10mg SQ qday	72 hrs (longer in renal impairment)		
heparin unfractionated IV continuous infusion or >5000 Units SQ bid or tid	when aPTT<40 sec		
warfarin (Coumadin)	when INR< 1.5		



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	Minimum time between last dose of anticoagulant and spinal injection OR neuraxial/nerve catheter placement	Restrictions on use of anticoagulants in patients with neuraxial/nerve catheters in place	Minimum time between neuraxial/nerve catheter removal OR spinal/nerve injection and next anticoagulant dose

## DIRECT THROMBIN INHIBITORS

<b>argatroban</b> IV continuous infusion <b>bivalirudin</b> (Angiomax) IV continuous infusion <b>lepirudin</b> (Refludan) IV continuous infusion	when DTI assay < 40 or aPTT < 40 sec	<b>CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending</b>	2 hours
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## ANTIPLATELET AGENTS

Aspirin/NSAIDS	May be given; no time restrictions for catheter placement or removal Do NOT call Pain Service		
abciximab (Reopro)	48 hrs	<b>CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending</b>	2 hours
clopidogrel (Plavix)	7 days		
eptifibatid (Integrelin)	8 hrs (longer in renal impairment)		
prasugrel (Effient)	7 days		
tirofiban (Aggrastat)	8 hrs (longer in renal impairment)		

## THROMBOLYTIC AGENTS

<b>alteplase</b> (TPA) 2mg dose for catheter clearance	May be given; no time restrictions for catheter placement or removal (Maximum dose 4mg/24 hours)		
<b>alteplase</b> (TPA) full dose for stroke, MI, etc	10 days	<b>CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending</b>	10 days