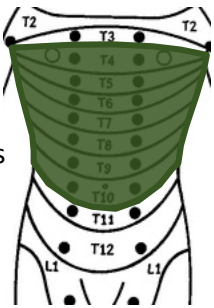
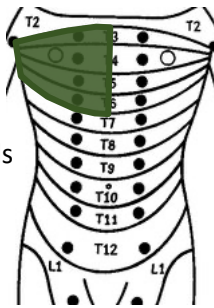
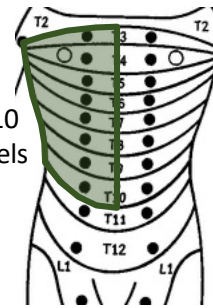
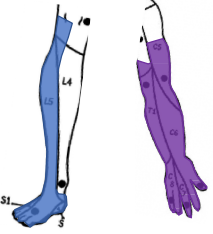




# VUMC Regional Anesthesia in Trauma

## Understanding differences between TEC, PVB, ESPB, Peripheral techniques

This document is NOT intended to decide which patients should receive a block. Once it is determined that a clinical situation warrants a procedure, this document can help guide 1) the decision to perform **one technique over another** and 2) the **anticoagulation implications** of this choice.

Procedure Type:	Thoracic Epidural (TEC)	Paravertebral (PVB)	Erector Spinae (ESPB)	Peripheral (PNB)
Indications	>3 Rib fx, especially below T3 Bilateral rib fx or chest tube Moderate or high-risk* patients with any # rib fx Exploratory Laparotomy	2-5 Rib fx, any location Unilateral rib fx or chest tube Moderate or high-risk* patients with small # rib fx Bilateral placement possible May be placed at or above T4	2-10 Rib fx, any location Chest tube Low or moderate-risk patient, any # rib fx Bilateral placement possible	Injury to extremity or joint (e.g. ankle, knee, shoulder, hand) Laparoscopy
Prerequisites	1) Lateral decub or sitting positioning possible, 2) No thoracic spine surgery planned, 3) <b>NO Enoxaparin</b> ordered until after APS eval as it precludes TEC & PVB placement			N/A
Contraindications	Anticoagulants (see below) T-spine pathology or surgery Elevated ICP	Anticoagulants (see below) T-spine pathology or surgery	Recent or anticipated T-spine surgery	Compartment syndrome
Region Covered	 4-10 Levels	 2-5 Levels	 6-10 Levels	Dependent on block location 
Laterality	Bilateral	Unilateral (Bilateral with multiple catheters)	Unilateral (Bilateral with multiple catheters)	Unilateral
Intensity	Dense	Dense	Diffuse/inconsistent	Dense
Hypotension	Potentially significant	Minimal	Minimal	Minimal
<b>Acceptable Anticoagulation at VUMC</b>				
Enoxaparin	X	X	✓	✓
Clopidogrel	X	X	✓	✓
Heparin IV gtt	X	X	✓	✓
Heparin subQ	✓	✓	✓	✓
ASA, NSAIDs	✓	✓	✓	✓
Other anticoagulants	Typically no, call APS w/ ?'s	Typically no, call APS w/ ?'s	✓	✓
Recommended:	Heparin, max 5000 U subQ TID		Enoxaparin subQ, prophylactic or therapeutic	

\* High risk denotes patients either at high risk for deterioration requiring intubation/respiratory support or at high risk for morbidity or mortality should deterioration occur

## Block Selection\*\*

Epidural vs. Paravertebral		Epidural vs. Erector Spinae		Paravertebral vs. Erector Spinae	
TEC preferred:	PVB preferred:	TEC preferred:	ESBP preferred:	PVB preferred:	ESPB preferred:
Bilateral rib fx High # rib fx (6+) Diffuse pain Rib fx at <b>T4 or below</b> Open surgery	Unilateral rib fx Low # rib fx (2-5) Limited area of pain Analgesic coverage needed <b>above T4</b>	Bilateral rib fx No anticoagulation Significant pain relief needed High risk patient High injury severity Open surgery	Unilateral fx Anticoagulated Modest pain relief needed Low risk patient Analgesic coverage needed <b>above T4</b>	< 6 rib fx No anticoagulation Significant pain relief needed in a <b>limited</b> area (2-5 dermatomes)	6+ rib fx Anticoagulated Modest pain relief needed in a <b>broad</b> area (>5 dermatomes)

\*\*Provider preference plays a significant role, but listed factors may impact procedure selection

Authors:

Edward Yagmour, MD  
Brian Allen, MD

Danial Shams, MD  
Brad Dennis, MD

Crystal Parrish, APRN

Revisions: 5/2026, 4/2024, 4/2022, 3/2020