Regional anesthesia which can be given outside the operating room

1. Intercostal nerve block is indicated after thoracotomy or before chest tube placement.

a. Anatomy and placement

Anatomy and placement for intercostal nerve block. **A:** The anesthesiologist's hand closest to the patient's head (cephalic) first locates the target interspace and then **(B)** retracts the skin over the rib above. **C:** The hand closest to the patient's feet (caudad) places the needle and attached syringe containing local anesthetic through the skin onto the rib at approximately a 30-degree angle, with the needle bevel directed cephalad. **D:** The cephalic hand then grasps the needle while maintaining contact with the patient, and allows the tension of the retracted skin to walk the needle off the inferior edge of the rib and advance 2–3 mm.

1. The **posterior axillary line is identified** and, using sterile technique, a 23 gauge needle is placed perpendicular to the patient's skin until contact is made with his or her rib. The needle is then walked caudad off the patient's rib and advanced several millimeters. After negative aspiration, 5 mL of bupivacaine 0.25–0.50% with epinephrine (1:200,000) is injected.

2. Usually, **five interspaces** (including 2 above and 2 below the interspace of interest) are injected.

b. Complications include pneumothorax and intravascular injection causing arrhythmias. Injection into the nerve sheath with retrograde spread back to the spinal cord can produce a high spinal or epidural.

2. Digital block is indicated for minor procedures of the fingers.

a. Anatomy and placement

1. From the **dorsal surface of the hand**, a 23-gauge needle is placed on either side of the metatarsal head and inserted until the increased resistance of the palmar connective tissue is felt. An injection of 1–2 mL of lidocaine 1–2% is made as the needle is withdrawn.

2. Supplemental injection of 0.5–1.0 mL of lidocaine 1–2% in the interdigital web on either side may be required.

b. Epinephrine is contraindicated.

c. Local infiltration

1. In the operating room, the area of incision can be infiltrated before incision or at the conclusion of the operation. Some evidence suggests that infiltration before incision is associated with less postoperative discomfort and reduced analgesic use. Bupivacaine is frequently used.

2. Outside the operating room, local anesthetic infiltration may also be useful during wound débridement, central venous catheter placement, or repair of minor lacerations. The agent of choice is lidocaine 1–2% due to its quick onset and low toxicity. The area of interest should be injected liberally.

Frequent aspiration helps to avoid intravascular injection. Injection should be repeated as necessary.

3. Epinephrine should not be used in areas at risk of vascular compromise from arterial spasm (e.g., nose, ears, fingers, toes, or penis).