

Hand nerve blocks

By Gavin Cardwell, DO, Shannon Hart, DO, and Nathaniel A. Marroquin, DO



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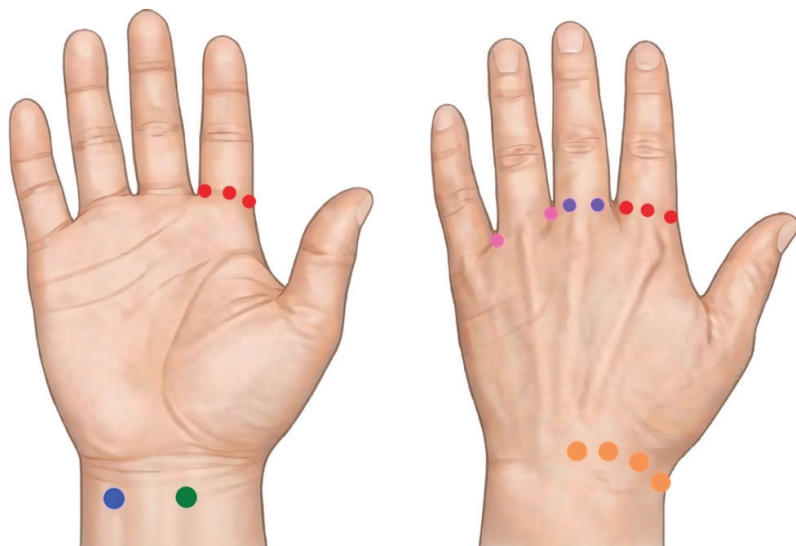


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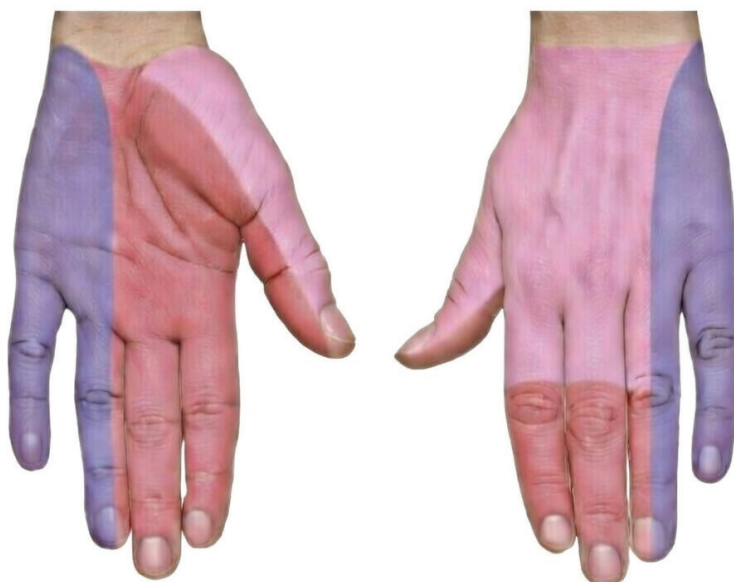
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Nerve block injection sites



- Median Nerve
- Digital Nerves
- Ulnar Nerve
- Ring Block
- Radial Nerve (Superficial Branch)
- Web Space Block

Cutaneous innervation of the hand



Median nerve
Radial Nerve
Ulnar nerve

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Nerve	Sensory distribution	Key landmarks	Injection site & technique	Volume	Complications/pearls
Median nerve	Palmar thumb, index, middle, radial half of ring finger; nail beds	Palmaris longus tendon, flexor carpi radialis; nerve lies just ulnar to flexor carpi radialis at wrist	At volar wrist crease, insert ulnar to flexor carpi radialis tendon, advance 1-2 cm, aspirate, inject	3-5 mL	Intravascular injection (radial artery nearby), nerve injury, incomplete block if injected too superficial
Ulnar nerve	Small finger and ulnar half of ring finger (palmar & dorsal)	Flexor carpi ulnaris tendon; ulnar artery is radial to nerve	At volar wrist crease, inject radial to flexor carpi ulnaris tendon, depth ~1 cm	3-5 mL	Ulnar artery puncture, nerve injury; always aspirate
Radial nerve (superficial branch)	Dorsal thumb, index, middle (not nail beds)	Radial styloid, anatomic snuffbox	Subcutaneous wheal over radial wrist, from radial styloid dorsally toward midline	3-5 mL	Usually very safe; incomplete coverage common if not wide enough
Digital nerves	Entire finger; each finger has radial & ulnar digital nerves	Base of finger at MCP crease	Inject lateral to flexor tendon on both sides of finger	1-2 mL per side	Caution with epinephrine in peripheral vascular disease; do not exceed 8 mL total volume per digit due to tourniquet effect
Ring block	Entire finger	Proximal finger base	Subcutaneous infiltration circumferentially	5-8 mL	Swelling, do not exceed 8 mL per digit due to tourniquet effect
Web space block	Individual digit	Web space between fingers	Insert into web space dorsally, advance toward palmar surface	2-3 mL	Less painful but sometimes incomplete

References:

1. Bolognia, J. L., Schaffer, J. V., & Cerroni, L. (2024). *Dermatology* (5th ed.). Elsevier
2. Alikhan A, Hocker TL. (2023) *Review of Dermatology* (2nd ed). Elsevier

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