ORTHOVERSE · HIGH-YIELD CARD

Dermatomes vs Peripheral Nerves

Interactive simulator
orthoverse.org/simulators/dermatome-map/

HIGH-YIELD

- A dermatome = skin supplied by one spinal root; a peripheral nerve territory carries fibers from several roots.
- ASIA trunk landmarks: nipple T4, xiphoid T6, umbilicus T10, midpoint of inguinal ligament T12.
- Upper limb Rockwood table: thumb and lateral forearm C6; middle finger C7; ring and little fingers and medial forearm C8.
- Lower limb key points: medial malleolus L4; dorsum of foot over 3rd MTP joint L5; lateral heel S1.
- Autonomous zone = area supplied exclusively by one peripheral nerve; complete anesthesia there suggests nerve transection.
- Median autonomous zone: distal phalanges of index and middle fingers; ulnar: middle and distal phalanges of little finger.
- C8 vs ulnar: medial forearm numbness = C8 or medial cord; the ulnar nerve does not supply the medial forearm.
- L5 vs fibular: hip abductor or invertor weakness rules out fibular nerve alone; look for L5 root or sciatic.
- LFCN (meralgia paresthetica): lateral thigh burning with no motor deficit; compressed near the ASIS.
- Spinal shock hides the level; bulbocavernosus reflex (S2-S4) signals resolution; cauda equina lesions do not cause spinal shock.

PITFALLS

- Axillary nerve lesion may show no sensory loss; diagnosis depends on deltoid weakness, not numbness.
- Medial forearm numbness is not ulnar territory (it is medial antebrachial cutaneous); do not stop at an ulnar diagnosis.
- ASIA examination is not necessarily reliable in the first 72 hours after spinal cord injury.

NUMBERS TO KNOW

Nipple sensory level	T4
Xiphoid process sensory level	T6
Umbilicus sensory level	T10
Midpoint of inguinal ligament sensory level	T12
Dermatomes covered by simulator	C2 to S4-5
ASIA sensation grades	3 (normal, decreased, absent)
ASIA muscle strength scale	0 to 5
Bulbocavernosus reflex root supply	S2 to S4

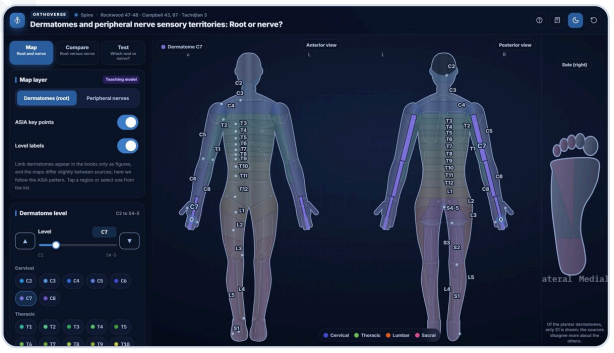


Figure. Pick a root and its dermatome lights up, with the ASIA key sensory point.

FURTHER READING

Rockwood and Green's Fractures in Adults, 10th edition: ch 47 and 48 (spinal cord injury and its assessment).
Campbell's Operative Orthopaedics, 15th edition (2026): ch 43 and 67.
Tachdjian's Pediatric Orthopaedics: ch 3 (the neurologic examination).

Free for personal study. © 2026 Orthoverse. Not for redistribution. Educational material for health professionals, not medical advice.

Dr m.m.bakhshaei