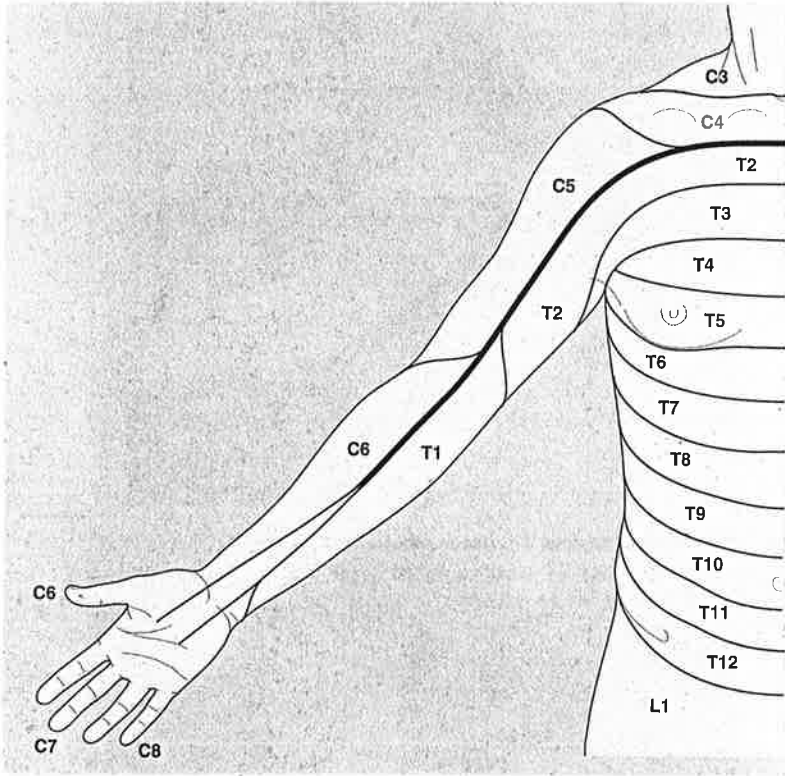


# DERMATOMES



**Fig. 88** Approximate distribution of dermatomes on the anterior aspect of the upper limb.

**Fig. 88–91** show the approximate cutaneous areas supplied by each spinal root. There is considerable variation and overlap between dermatomes, so that an isolated root lesion results in a much smaller area of sensory impairment than is indicated in these diagrams.

This variation also applies to the innervation of the fingers, but the thumb is usually supplied by C6 and the little finger usually by C8 (see Inouye and Buchthal (1977) *Brain* 100: 731–748). The heavy axial lines are usually more consistent, showing the boundary between non consecutive dermatomes.

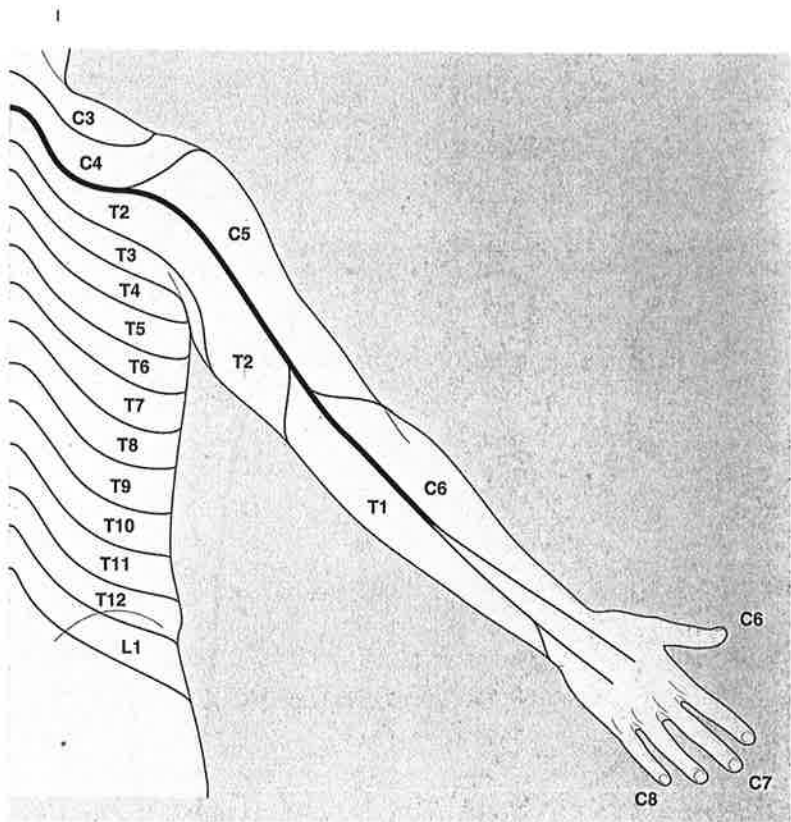


Fig. 89 Approximate distribution of dermatomes on the posterior aspect of the upper limb.

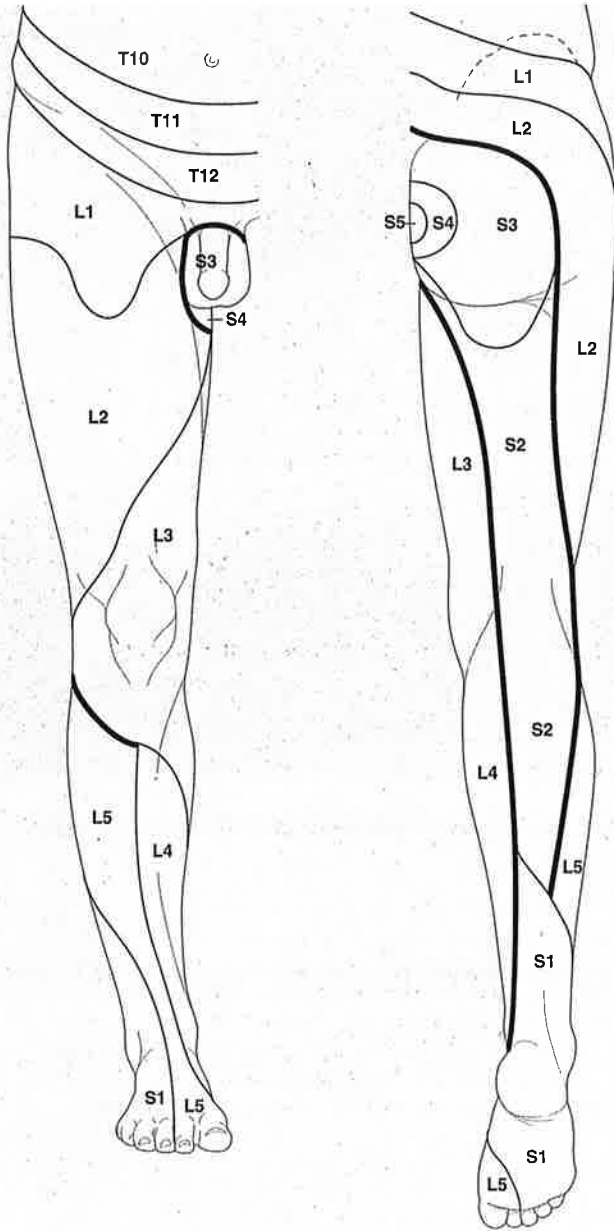


Fig. 90 Approximate distribution of dermatomes on the lower limb.

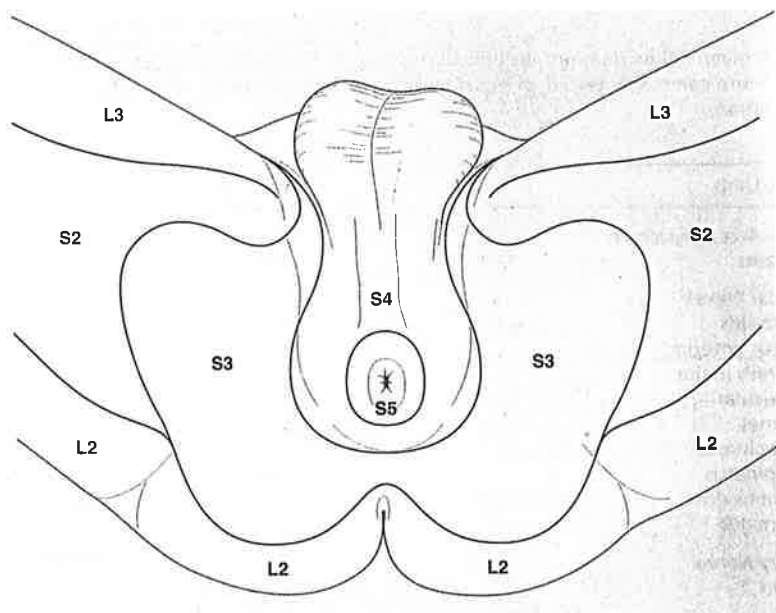


Fig. 91 Approximate distribution of dermatomes on the perineum

# NERVES AND MAIN ROOT SUPPLY OF MUSCLES

The list given below does not include all the muscles innervated by these nerves, but only those more commonly tested, either clinically or electrically, and shows the order of innervation.

Upper Limb	Spinal Roots
<i>Spinal Accessory Nerve</i>	
Trapezius	C3, C4
<i>Brachial Plexus</i>	
Rhomboids	C4, C5
Serratus anterior	C5, C6, C7
Pectoralis major	
Clavicular }	C5, C6
Sternal }	C6, C7, C8
Supraspinatus	C5, C6
Infraspinatus	C5, C6
Latissimus dorsi	C6, C7, C8
Teres major	C5, C6, C7
<i>Axillary Nerve</i>	
Deltoid	C5, C6
<i>Musculocutaneous Nerve</i>	
Biceps	C5, C6
Brachialis	C5, C6
<i>Radial Nerve</i>	
Triceps { Long head Lateral head Medial head }	C6, C7, C8
Brachioradialis	C5, C6
Extensor carpi radialis longus	C5, C6
<i>Posterior Interosseous Nerve</i>	
Supinator	C6, C7
Extensor carpi ulnaris	C7, C8
Extensor digitorum	C7, C8
Abductor pollicis longus	C7, C8
Extensor pollicis longus	C7, C8
Extensor pollicis brevis	C7, C8
Extensor indicis	C7, C8
<i>Median Nerve</i>	
Pronator teres	C6, C7
Flexor carpi radialis	C6, C7
Flexor digitorum superficialis	C7, C8, T1
Abductor pollicis brevis	C8, T1
Flexor pollicis brevis*	C8, T1
Opponens pollicis	C8, T1
Lumbricals I & II	C8, T1

*Anterior Interosseous Nerve*

Pronator quadratus	C7, C8
Flexor digitorum profundus I & II	C7, C8
Flexor pollicis longus	C7, C8

*Ulnar Nerve*

Flexor carpi ulnaris	C7, C8, T1
Flexor digitorum profundus III & IV	C7, C8
Hypothenar muscles	C8, T1
Adductor pollicis	C8, T1
Flexor pollicis brevis	C8, T1
Palmar interossei	C8, T1
Dorsal interossei	C8, T1
Lumbricals III & IV	C8, T1

Lower Limb	Spinal Roots
<i>Femoral Nerve</i>	
Iliopsoas	L1, L2, L3
Rectus femoris	} Quadriceps femoris
Vastus lateralis	
Vastus intermedius	
Vastus medialis	
<i>Obturator Nerve</i>	
Adductor longus	} L2, L3, L4
Adductor magnus	
<i>Superior Gluteal Nerve</i>	
Gluteus medus and minimus	} L4, L5, S1
Tensor fasciae latae	
<i>Inferior Gluteal Nerve</i>	
Gluteus maximus	L5, S1, S2
<i>Sciatic and Tibial Nerves</i>	
Semitendinosus	L5, S1, S2
Biceps	L5, S1, S2
Semimembranosus	L5, S1, S2
Gastrocnemius and soleus	S1, S2
Tibialis posterior	L4, L5
Flexor digitorum longus	L5, S1, S2
Abductor hallucis	} Small muscles of foot
Abductor digiti minimi	
Interossei	
<i>Sciatic and Common Peroneal Nerves</i>	
Tibialis anterior	L4, L5
Extensor digitorum longus	L5, S1
Extensor hallucis longus	L5, S1
Extensor digitorum brevis	L5, S1
Peroneus longus	L5, S1
Peroneus brevis	L5, S1

\*Flexor pollicis brevis is often supplied wholly or partially by the ulnar nerve.

## COMMONLY TESTED MOVEMENTS

Movement	UMN	Root	Reflex	Nerve	Muscle
<b>Upper limb</b>					
> Shoulder abduction	++	C5		Axillary	Deltoid
> Elbow flexion		C5/6 C6	+	Musculocutaneous Radial	Biceps Brachioradialis
> Elbow extension	+	C7	+	Radial	Triceps
Radial wrist extension	+	C6		Radial	Extensor carpi radialis longus
Finger extension	+	C7		Posterior interosseus nerve	Extensor digitorum communis
> Finger flexion		C8	+	Anterior interosseus nerve  Ulnar	Flexor pollicis longus + digitorum profundus (index) Flexor digitorum profundus (ring + little)
Finger abduction	++	T1		Ulnar  Median	First dorsal web space Abductor digiti minimi
<b>Lower limb</b>					
> Hip flexion	++	L1/2			Iliopsoas
> Hip adduction		L2/3	+	Obturator	Adductor longus
Hip extension		L5/S1		Sciatic	Gluteus maximus
Knee flexion	+	S1		Sciatic	Hamstrings
> Knee extension		L3/4	+	Femoral	Quadriceps
Ankle dorsiflexion	++	L4		Deep peroneal	Tibialis anterior
> Ankle eversion		L5/S1		Superficial peroneal	Peroneus lateralis
> Ankle plantarflexion		S1/S2	+	Tibial	Gastrocnemius Soleus
Big toe extension		L5		Deep peroneal	Extensor digitorum longus

The table shows some commonly tested movements, the principal muscle involved, the spinal roots and nerve supply. The column headed UMN indicates those movements which are preferentially weak in upper motor neuron lesions.