LEVEL OF LESION

Localisation of the lesion is carried out at three levels

- Sensory level
- Motor level
- Reflex level

SENSORY LEVEL

COMPLETE TRANSECTION OF CORD

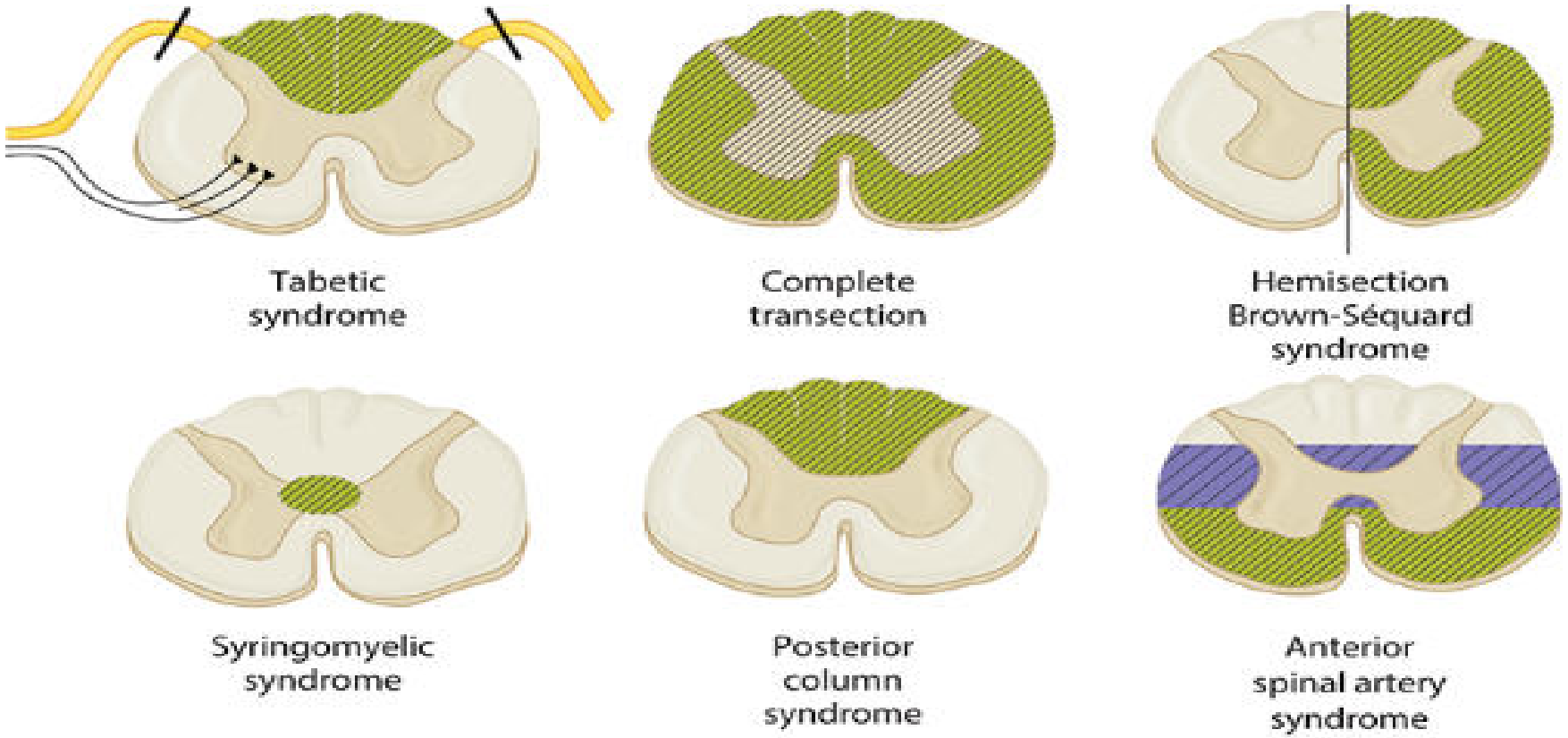
All sensory tracts involved ----------total anaesthesia below the level

ANTERIOR SPINAL ARTERY SYNDROME

Spinothlamic tract……..loss of sensations below the level

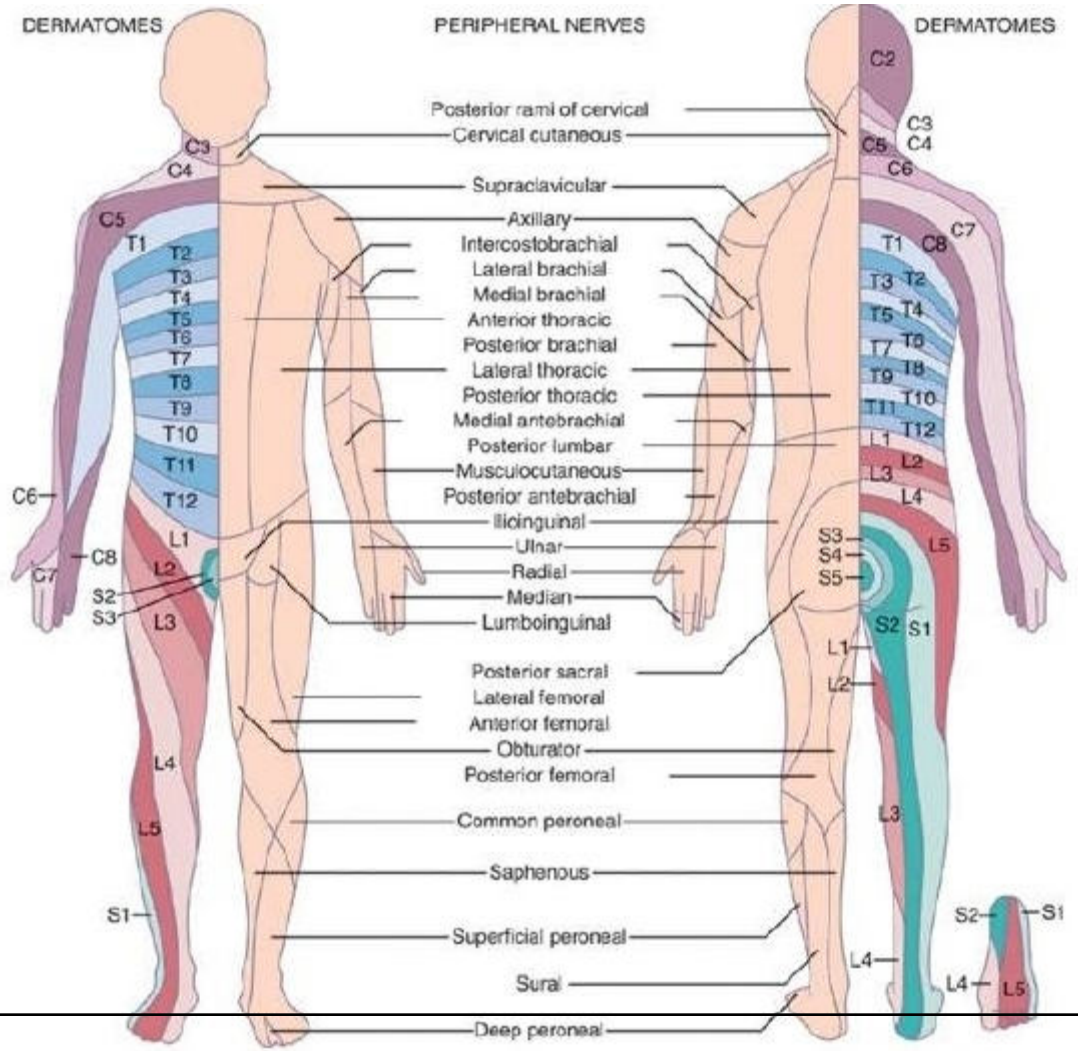
SYRINGOMYELIA

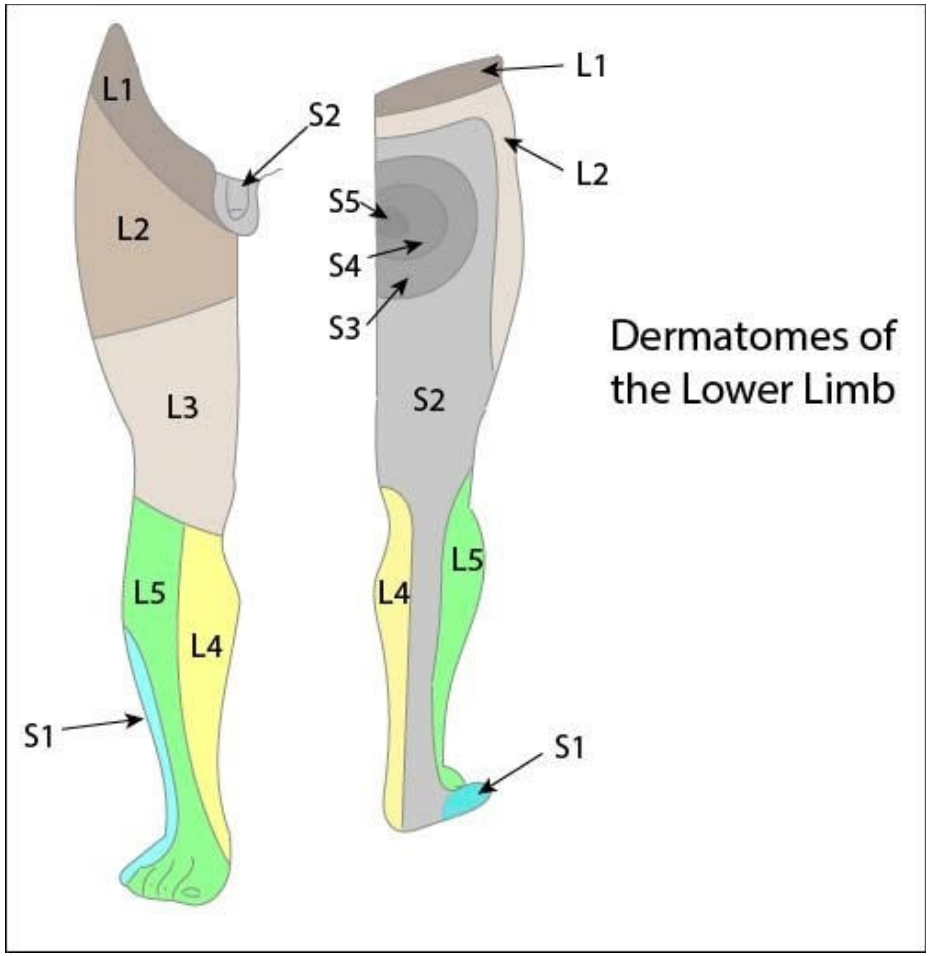
Dissociated anesthesia



Source: Tony Mosconi, Victoria Graham:
Neuroscience for Rehabilitation

DERMATOMES





MOTOR LEVEL

AT THE LEVEL OF LESION……..LMN type

BELOW THE LEVEL OF LESION ……UMN type

Hip flexion L1,L2,L3

Hip extension L5,S1,S2

Hip adduction L2,L3,L4

Hip abduction L4,L5,S1

Knee extension L2,L3,L4

Knee flexion L4,L5,S1,S2

ankle dorsiflexion L4,L5

ankle inversionL5,S1

ankle eversionL5,S1

plantar flexion L5,S1,S2

Big toe extensionL5,S1

extension of other toes and flexionL5,S1

REFLEX LEVEL

AT THE LEVEL OF LESION……..reflexes are absent or diminished

BELOW THE LEVEL……exaggerated

Reflex	*Cord level*
Biceps (elbow)	*C5,6*
Brachioradialis	*C5,6*
Triceps	*C6,7*
Long finger flexors	*C8-T1*
Hip Abductors	*L2,3,4*
Quadriceps (knee)	*L2,3,4*
Gastrocnemius-soleus (ankle)	*S1,2*

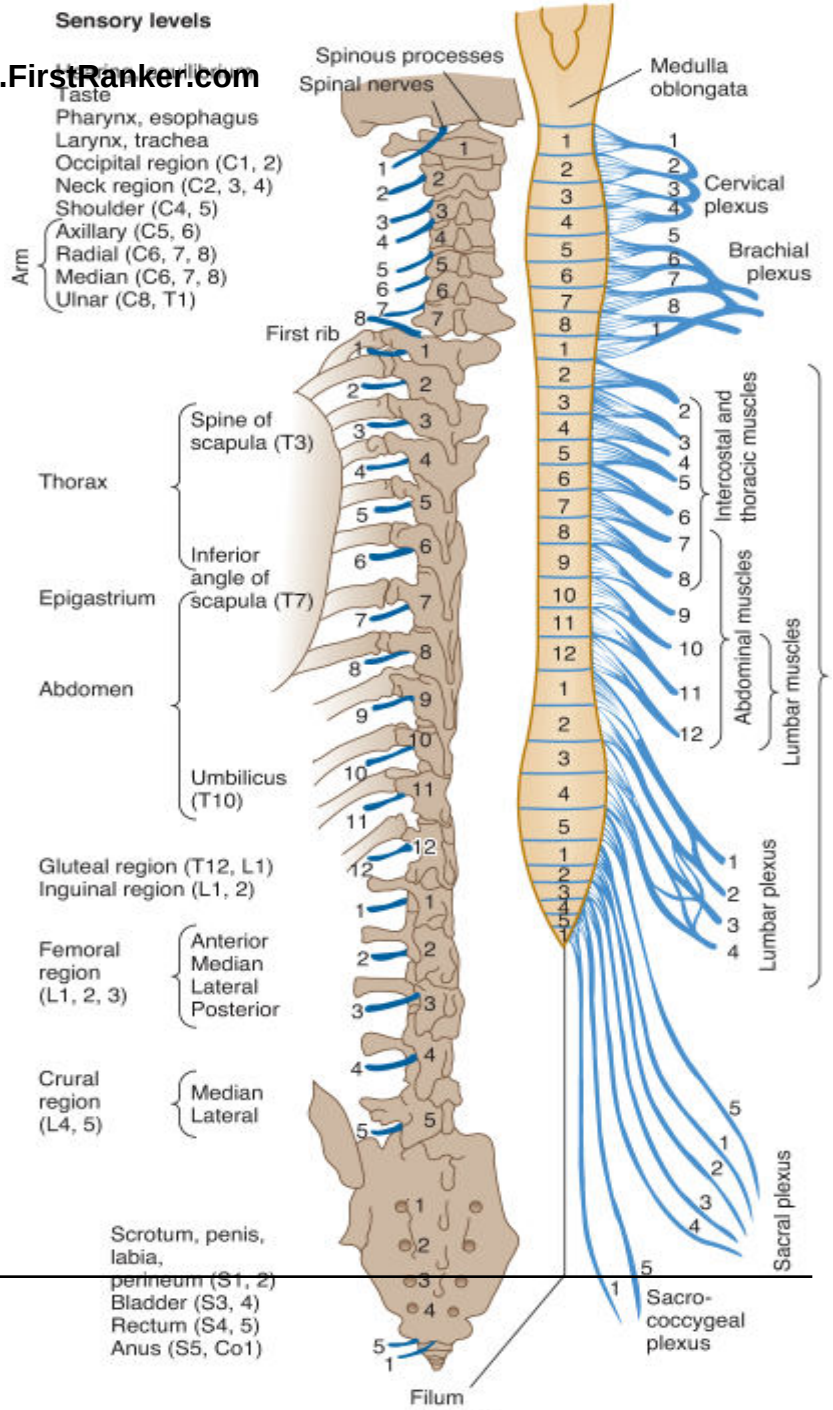
Spinal cord levels of the tendon reflexes

BLADDER

Character	*UMN Type*	*LMN Type*
	Spastic Bladder	Flaccid Bladder
Tone	Hypertonic (Increased)	Hypotonic (Decreased)
Volume	Normal or small	Large
Detrussor contraction	Involuntary intermittent contractions (Overactiity)	Absent (Underactivity)
Pressure	High	Low
Incontinence type	Urge	Overflow
Symptom	Urgency and Frequency nocturia Leaking of urine	Dribbling of urine Erectile edysfunction in men
Retention	(Detrussor-Sphincter Dyssynergia) Uncoordinated bladder contraction and sphincter relaxation	Detrusor Areflexia
Conditions	Spinal Cord damage above T12 Cerebrovascular accidents	Spinal cord damage at S2-S4 Peripheral Nerve injury Acute Stage of spinal cord injury Cauda Equina, Conus medullaris

VERTEBRAL LEVELS AND SPINAL SEGMENTS

Vertebral level	Spinal segment
Upper cervical	same
Lower cervical	+1
Upper thoracic	+2
Lower thoracic	+3
T 10	L1 – l2
T11 T12 L1	L3-l4 L5-S1 S2-C0



INVESTIGATIONS

BLOOD ROUTINE……..TC,DC,ESR,

MANTOUX TEST

CHEST XRAY

XRAY OF SPINE

LYMPH NODE BIOPSY

MRI/CT SCAN OF spine

LUMBAR PUNCTURE

MANAGEMENT

- Adequate nutrition
- Care of bowel ,bladder and trophic ulcers
- Muscle spasm…….. Diazepam
- Underlying cause
- Physiotherapy
- surgery