Nerve Conduction Study (NCS)

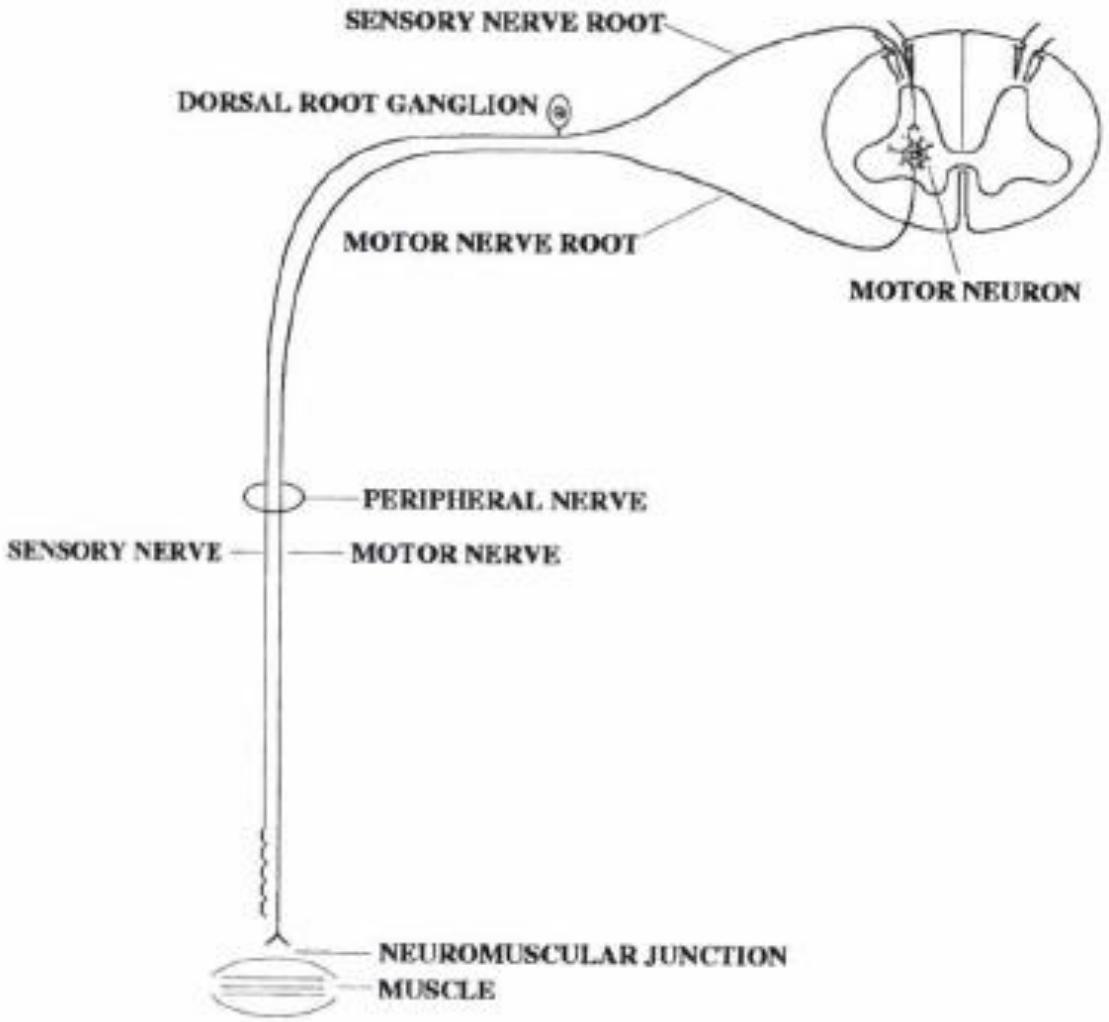
NCS

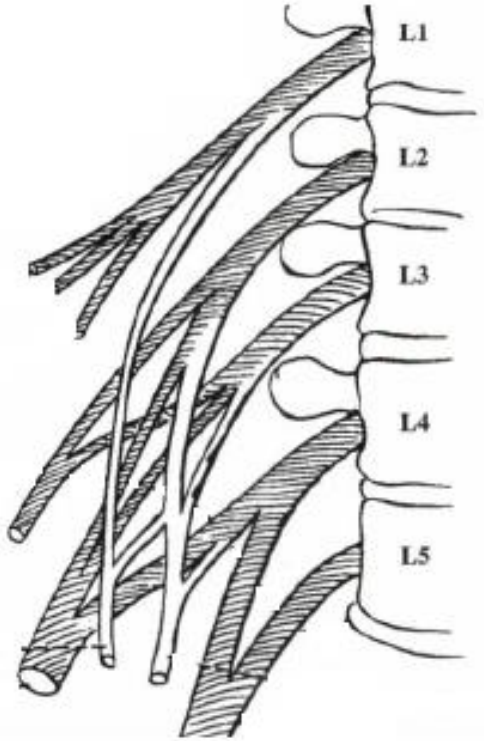
- Assess the electrical conductivity along the nerve using brief electrical stimulus
- Equipment: Recording electrodes (active, reference and ground), stimulator (cathode and anode), amplifier and other controls

Surface tests

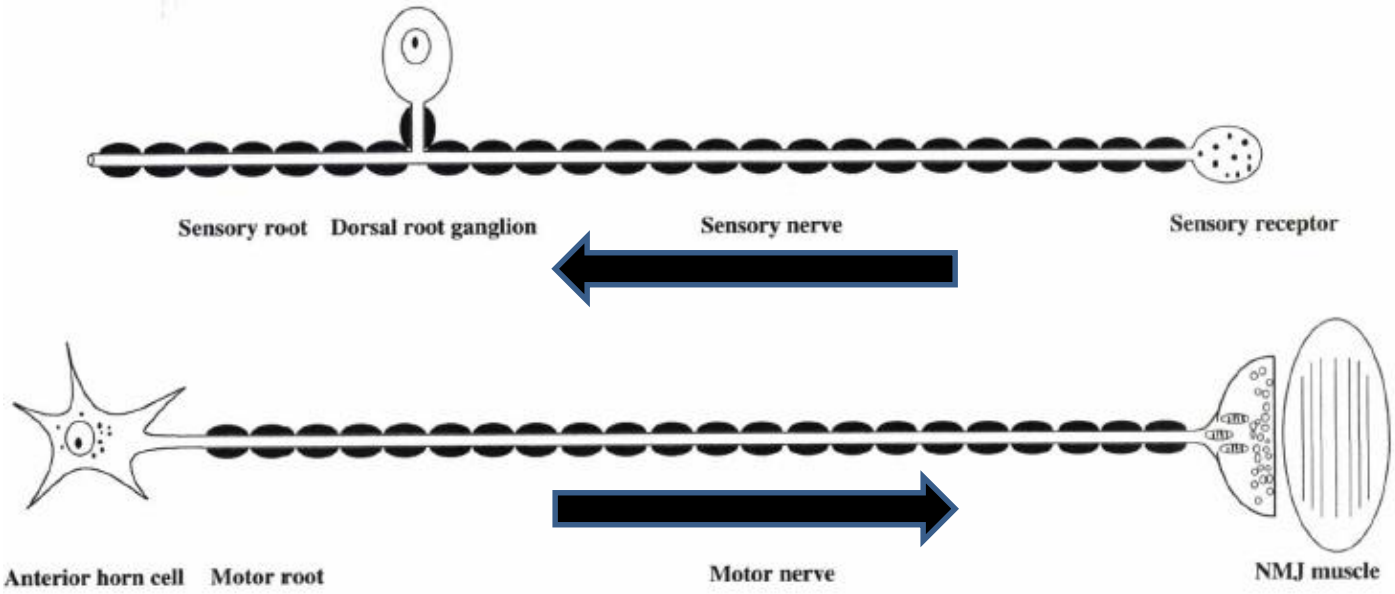
- Nerve conduction studies (motor, sensory and mixed NCS)
- Late reflexes (F wave, H reflex)
- Blink reflex
- Repetitive nerve stimulation (RNS)
- Short and long exercise studies
- Sympathetic skin reflex (SSR)

Sensory and Motor nerves

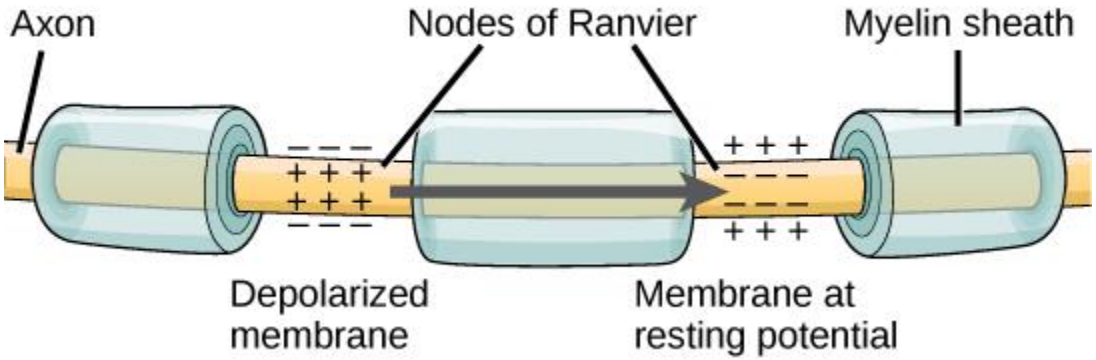


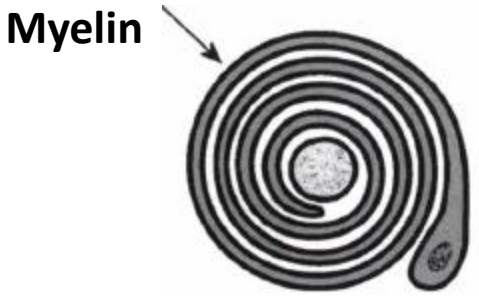


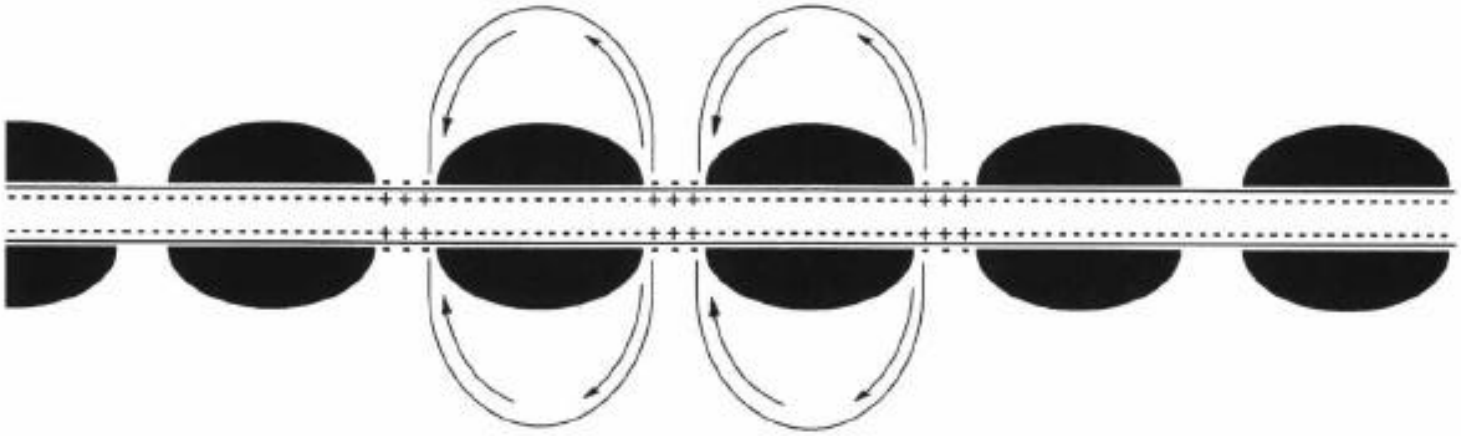
Sensory and Motor axon



Conduction along myelinated axons

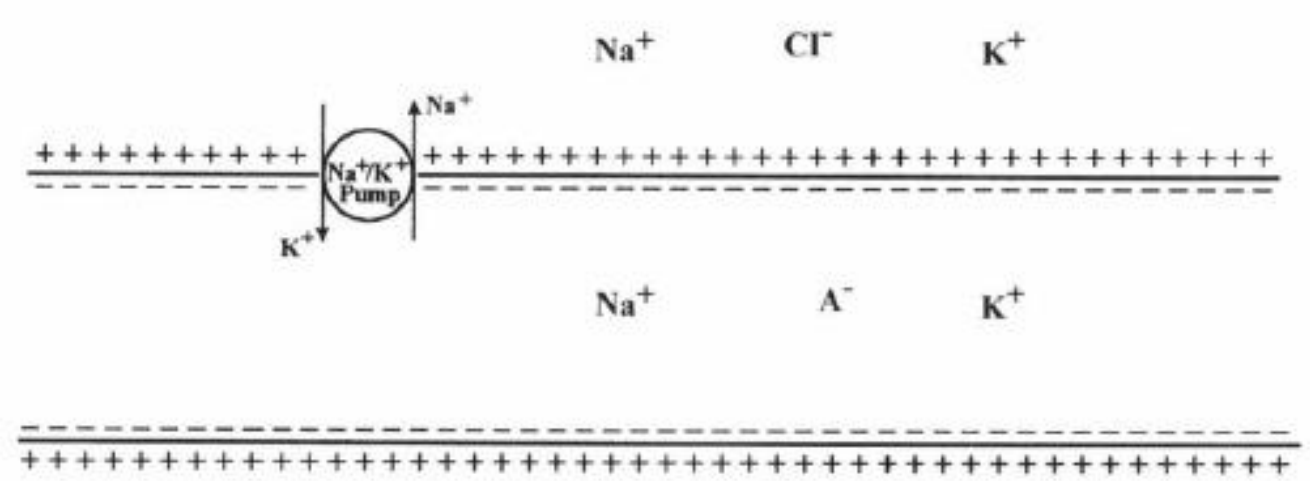


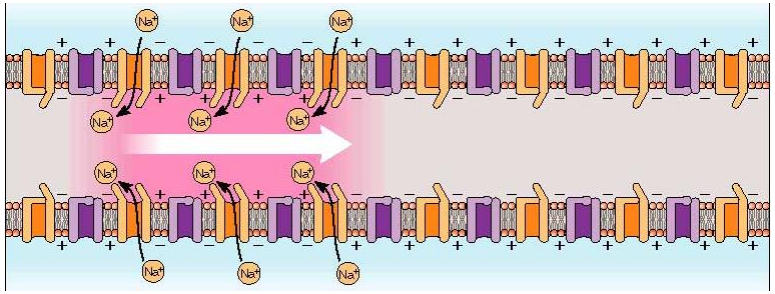




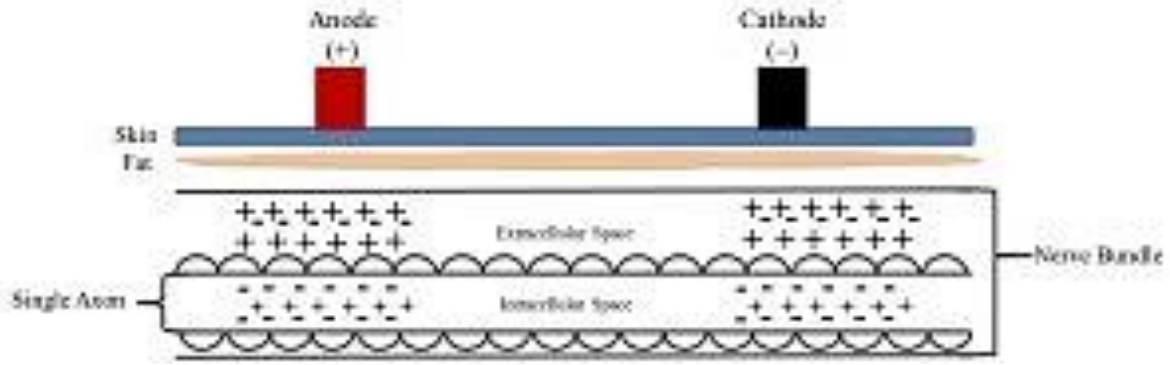
- **Because of myelination depolarization occurs only at the nodes of ranvier (gaps between two adjacent myelin)**

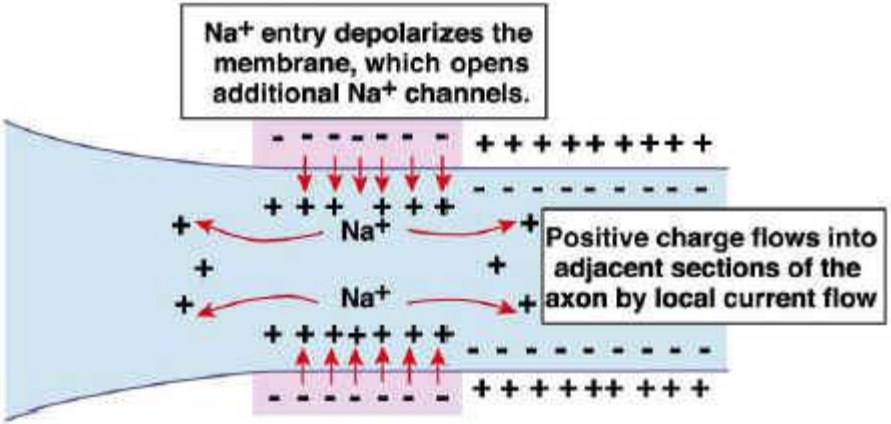
Axonal membrane





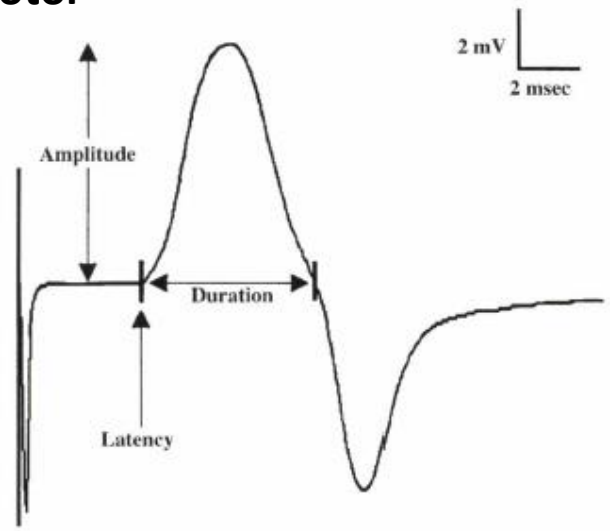
Antidromic and Orthodromic



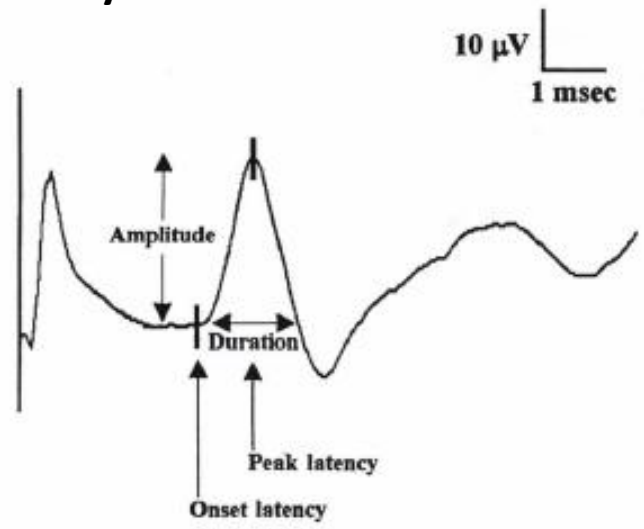


Terminologies

Motor



Sensory



- Action potential – waveform seen on the screen
- Latency – time interval between stimulus application and onset of the action potential
- Amplitude – size of the action potential
- Conduction velocity – speed of the fastest conducting nerve fibre (distance/latency)

Upper limb NCS

Sensory nerve	**Motor nerve**
Median	Median
Ulnar	Ulnar
Radial	Radial
Antebrachial cutaneous (medial and lateral)	

Lower limb NCS

Sensory nerve	**Motor nerve**
Superficial peroneal	Common Peroneal
Medial and lateral plantar	Posterior tibial
Sural	
Saphenous	
Lateral femoral cutaneous	