Multiple Sclerosis
• Progressive destruction of myelin sheaths
• Autoimmune disease
• Lack of coordination; paralysis of voluntary muscle

Intensity of NI
• Frequency of impulses influence intensity
• Number of sensory/motor neurons activated

Signal transmission from neuron to neuron
• Occurs at the synapse
• Specialized junction where two neurons meet
• Presynaptic neuron
• Postsynaptic neuron
• NI reaches axon terminal of pre-synaptic neuron
• Cannot propagate across synaptic cleft to post-synaptic neuron (dendrite or axon hillock)
• Depolarization causes gated Ca+ channels, as well as Na+ channels to open.
• Ca+ rushes in causing vesicles to merge with plasma membrane and release chemical neurotransmitter into synaptic cleft

Neurotransmitters
• Acetylcholine (ACh)
• Norepinephrine (NE)

• Acetylcholinesterase (AChE) breaks down ACh

Remember
• Within the neuron transmission of NI is ELECTRICAL
• Neuron to neuron transmission of NI is CHEMICAL

Spinal Cord Function
• Conveys sensory information from PNS to brain
• Conveys motor information from brain to PNS
• Processes sensory information in a limited manner: reflexes

Structure
• Located in vertebral canal of vertebral column
• Extends from inferior part of the brain stem to 2nd lumbar vertebra
• 31 pairs of nerves extend out/in

Protection of S.C.
• Vertebral column
• Epidural space
• Meninges:
  Dura mater
  subdural space (interstitial fluid)
  Arachnoid
  Subarachnoid space (cerebrospinal fluid)
  Pia mater

Cerebrospinal Fluid (CSF)
• Provides cushioning & protection of CNS
• Delivers nutrients & removes wastes
• Used for diagnostic purposes

Meningitis
• Inflammation of the meninges
• Viral or bacterial
• Pressure on spinal cord

**Spinal tap = Lumbar puncture**

• Removal of CSF at 3-5 lumbar vertebra