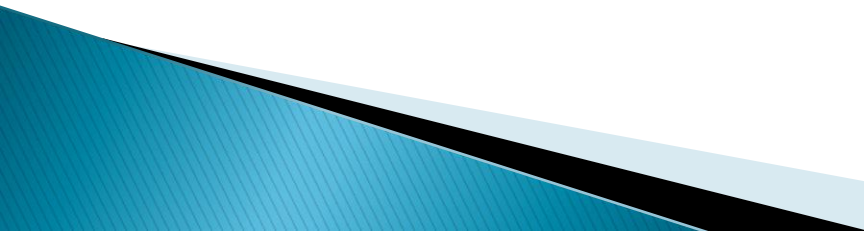
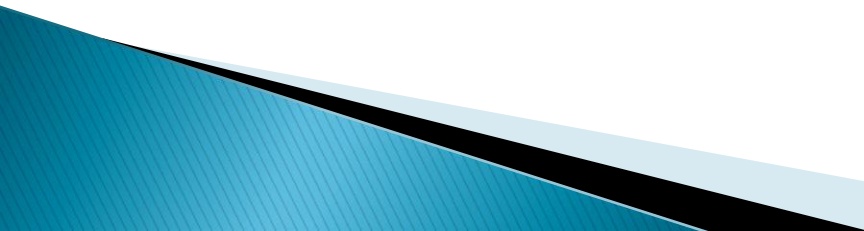


Topic: Nerve Conduction
Class: B.Sc Part -III (Hons.)
Paper- V
Group - B

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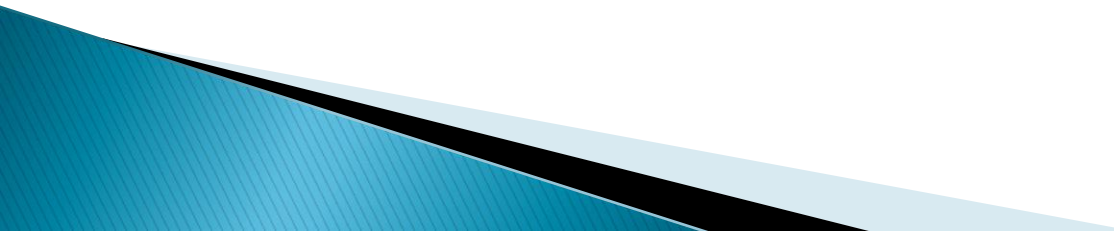
- ▶ The nerve conduction study consists of the following components
 - ▶ Motor NCS
 - ▶ Sensory NCS
 - ▶ F wave study
 - ▶ H-reflex study
 - ▶ The nerve conduction study is often combined with needle electromyography
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Motor NCS

- ▶ Motor NCS are obtained by stimulating a motor nerve and recording at the belly of a muscle innervated by that nerve.
 - ▶ The CMAP is the resulting response, and depends on the motor axons transmitting the action potential, status of the neuromuscular junction, and muscle fibers.
 - ▶ The CMAP amplitudes, motor onset latencies, and conduction velocities are routinely assessed and analyzed .
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- ▶ As with sensory NCS, conduction velocity is calculated by dividing distance by time.
- ▶ In this case, however, the distance between two stimulation sites is divided by the difference in onset latencies of those two sites, providing the conduction velocity in the segment of nerve between the two stimulation sites.
- ▶ This method of calculating conduction velocity thereby avoids being confounded by time spent traversing the neuromuscular junction and triggering a muscle action potential (since these are subtracted out).

Sensory NCS

- ▶ Sensory NCS are performed by electrical stimulation of a peripheral nerve while recording the transmitted potential at a different site along the same nerve.
 - ▶ Three main measure can be obtained SNAP (Sensory nerve action potential)amplitude, sensory latency and conduction velocity.
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- ▶ The SNAP amplitude (in microvolts) represents a measure of the number of axons conducting between the stimulation site and the recording site.
- ▶ Sensory latency (in milliseconds) is the time that it takes for the action potential to travel between the stimulation site and the recording site of the nerve.
- ▶ The conduction velocity is measured in meters per second and is obtained dividing the distance between stimulation site and the recording site by the latency:
- ▶ $\text{Conduction velocity} = \text{Distance} / \text{Latency}$