

Neuroscience II

Peripheral Neuropathy

Dr. Hani Ahmed Alanqar
Consultant of pathology



Peripheral neuropathy refers to the **conditions that result when nerves that carry messages to and from the brain and spinal cord from and to the rest of the body are damaged or diseased.**

General Types of Peripheral Nerve Injury

Axonal Neuropathies

Axons are the primary target of the damage in this large group of peripheral neuropathies . The morphologic hallmarks of axonal neuropathies can be produced experimentally by cutting a peripheral nerve, which results in a prototypical pattern of injury described as Wallerian degeneration. Portions of axons that are distal to the point of transection are disconnected from the cell bodies and degenerate. Within a day of injury, the distal axons begin to fragment.

Demyelinating Neuropathies

In these disorders, Schwann cells with their myelin sheaths are the primary targets of damage , whereas axons are relatively preserved. This definition is similar to that of demyelinating diseases that affect the CNS



Neuronopathies

Neuronopathies result from destruction of neurons, leading to secondary degeneration of axonal processes. Infections like herpes zoster and toxins like platinum compounds are examples of insults that may lead to neuronopathies.

Because the damage is at the level of the neuronal cell body, peripheral nerve dysfunction caused by neuronopathies is equally likely to affect proximal and distal parts of the body (unlike peripheral axonopathies, which preferentially affect the distal extremities).