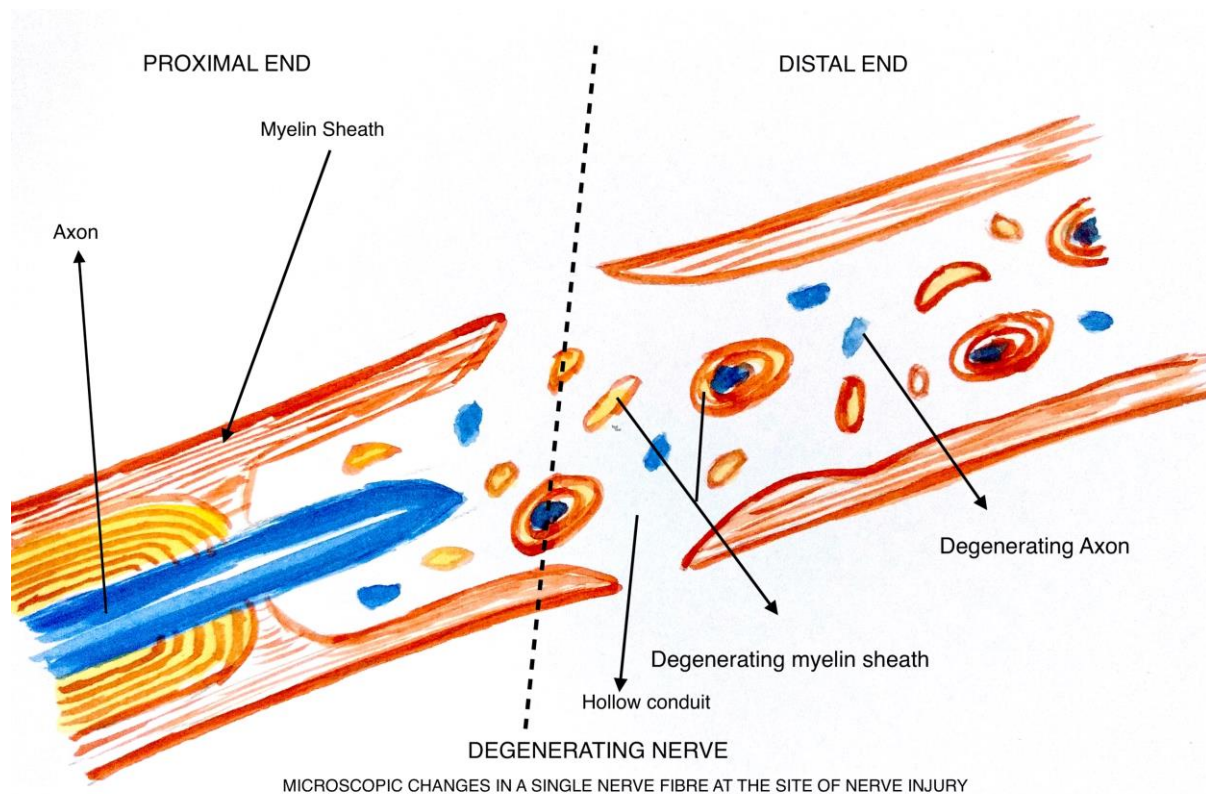


# Stages of Nerve Regeneration (In Pictures)

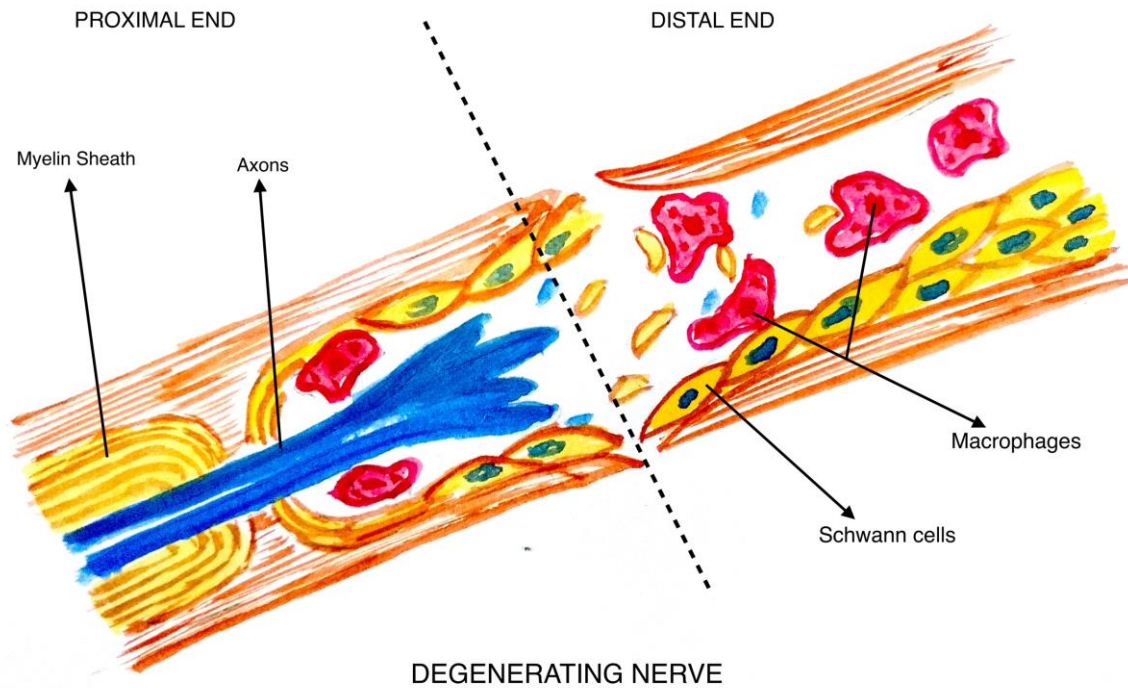
By:

**Dr. Vimalendu Brajesh** (drvbrajesh@yahoo.co.in)

Consultant- Medanta Hospital, Gurugram

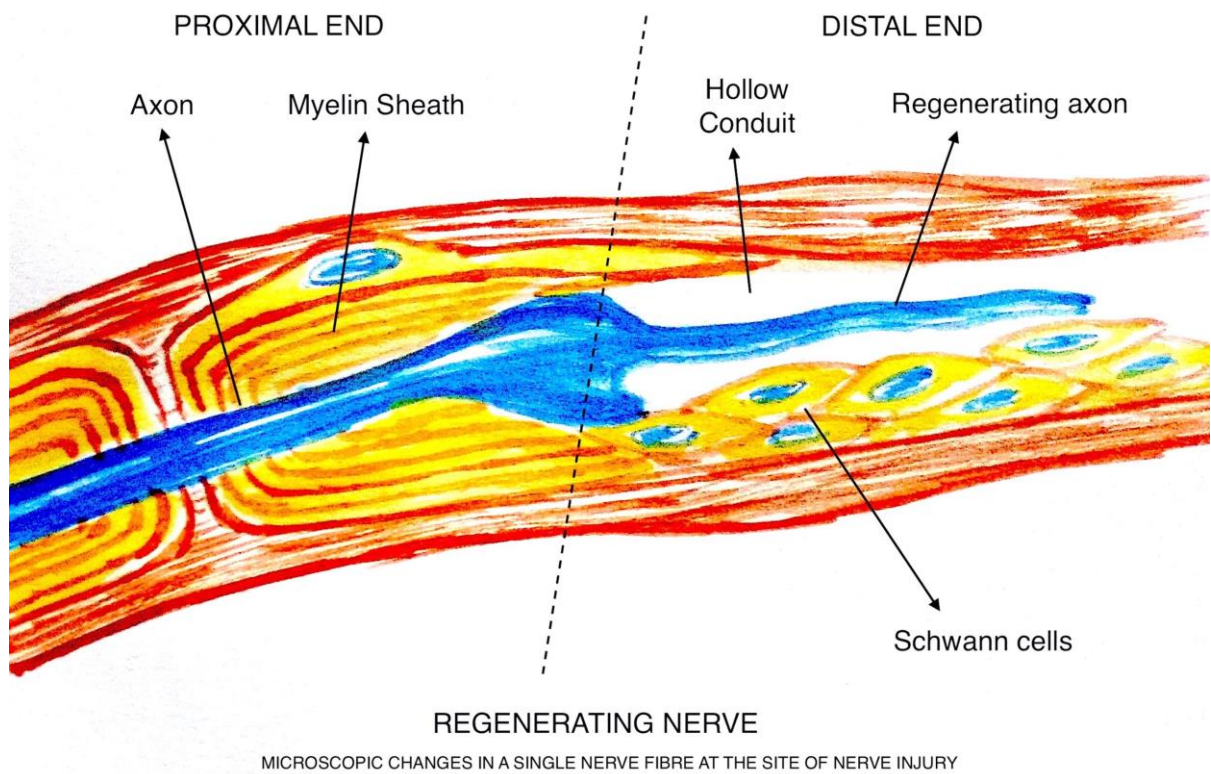


**Figure1-** Early stage of nerve degeneration causing Wallerian degeneration of the nerve segment distal to the transected site and upto one node of Ranvier proximal to the injury. Axon and Schwann cells degrade and get fragmented. Only the outer connective tissue sheath layer may remain intact as a hollow conduit or may get fibrosed and scarred.

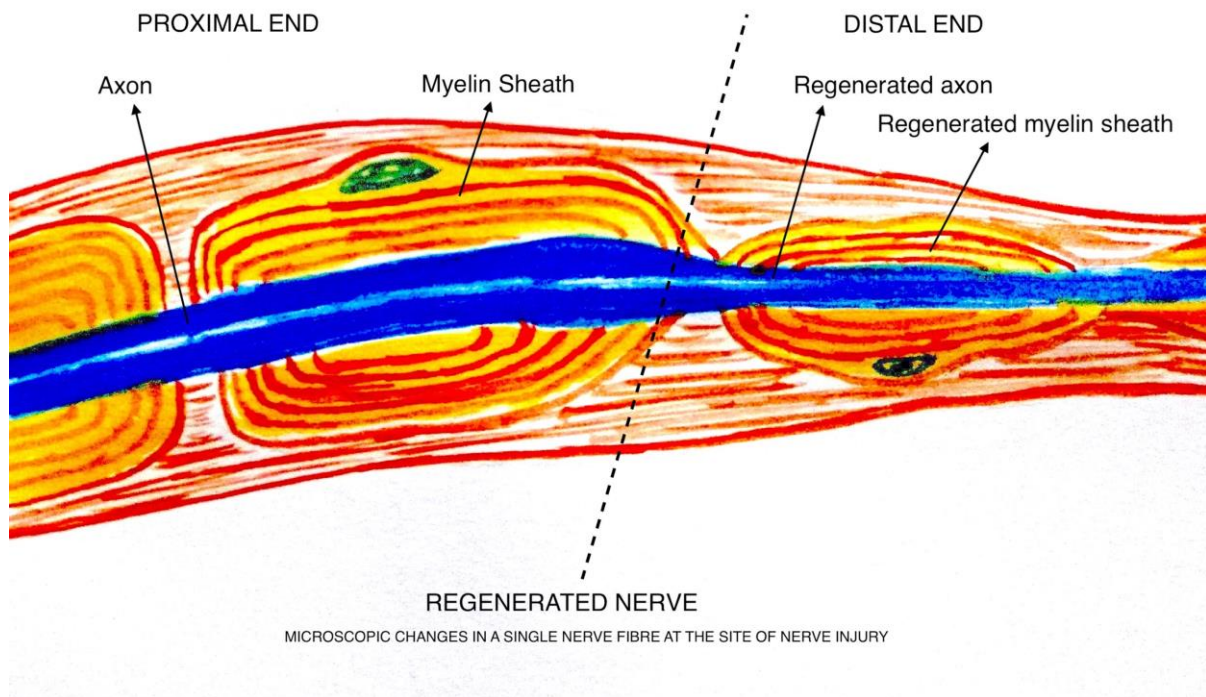


MICROSCOPIC CHANGES IN A SINGLE NERVE FIBRE AT THE SITE OF NERVE INJURY

**Figure 2-** Inflammatory stage; the macrophages and fibroblasts are recruited to clear the debris (degraded axon and Schwann cells) in the early inflammatory stage and Schwann cells proliferate to form the myelin sheath for the sprouting progressing axon in the late inflammatory stage.



**Figure 3** – Early stage of regeneration: Schwann cells forms a myelin sheath cover over the progressing axonal cone.



**Figure 4-** Regeneration complete: the axonal trunk and the myelin sheath cover are less robust than the original nerve but, the nerves anatomical and functional integrity is restored.