

Module 7 – Neurorepair

Summary of Key Points

This concludes Module 7: Neurorepair. Before you take the quiz, let's review the key points:

- **Regeneration** refers to re-growth of the cut/injured axon through a lesion back towards its normal target
- The major inhibitors of axon growth and regeneration are:
 - The Glial Scar
 - Physical barrier
 - Production of CSPGs
 - Myelin Inhibitors
 - Intracellular inhibitors
 - Factors that cause the bulbous structure to form in the CNS compared to the growth cone that forms in the PNS allowing regeneration.
- There are various strategies that many researchers are focusing in on to help promote neurorepair. These include:
 - Eliminating sources of inhibition
 - Breaking down CSPGs via chondroitinase ABC
 - Providing growth promoting cues
 - Blocking intracellular inhibitors of growth/ enhancing pro-regenerative programs
 - Turning on/off genes to allow growth.
- Scaffolds provide physical support for growing axons. They are implanted into the spinal cord to help axons “bridge” the lesion and to rebuild neural circuits by providing a beneficial microenvironment.
- Most treatment strategies to produce axon growth and regeneration work better when applied early after SCI.
- The threat of unspecific growth is a major hurdle for the use of growth promoting proteins.