

Module 4 – SCI Biology Part I: How an SCI Causes Loss of Function

Review of Key Points

This concludes Module 4: SCI Biology Part I: How an SCI Causes Loss of Function. Before you take the quiz, let's review some key points:

- The spinal cord is the communication highway of the body.
- It contains neurons (or nerve cells) that relay information back and forth between the brain and body by transmitting chemical and electrical signals.
- It also contains glial cells, which help neurons function by:
 - Holding neurons in place
 - Supplying neurons with nutrients and oxygen
 - Fighting infection and removing dead cells
 - Insulating neurons with myelin to help them transmit information, and
 - Producing or eliminating chemicals to help neurons communicate
- When the spinal cord is injured, two types of damage occur:
 - The primary injury, which is the physical injury to the spinal cord itself, and
 - The secondary injury, which includes a range of after-effects that cause further damage as the body responds to the primary injury.
- Some of the biological events that happen during the secondary of injury, including inflammation and formation of the glial scar, have both positive and negative effects.
- The *location* of the primary injury determines which *parts* of the body may lose sensation or movement, but the *severity* of the primary injury affects *how much* sensation and/or movement are lost.
- The damage that occurs during the subacute phase of the secondary injury is responsible for much of the loss of function following an SCI and also influences the types and severity of secondary complications experienced during the chronic phase.
- Differences in the type of SCI a person has – defined by the location and the severity – may affect their ability to participate in a research study, the research outcomes that matter most to them, and the side effects or treatments results they experience.