



The Sibley Report

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... the place to find valuable information to help make your job - and your life easier! If you have a topic idea or any other suggestions, please give our Editor - Angie Catenaro - a call. Sibley & Associates is a national disability management firm with a decade of experience, nearly 300 healthcare professionals and state-of-the-art technology. Our customers benefit from all the advantages a large company has to offer...while also benefiting from the "small business" customer service philosophy of our dedicated Insurance Services Division.

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What Happens When the Spinal Cord is Injured?

When the spinal cord is injured, the axons* in the area of the injury are damaged and although the muscles may remain undamaged, the axons that target these muscles are no longer able to send the right signals.

For example, vertebrae in the upper region of the neck have nerves that target muscles on your neck and shoulders, similarly vertebrae in your lower back have nerves that target your leg muscles. If you were involved in an accident that resulted in injury to this region (between your neck and lower back) the axons may still be able to reach your neck nerves - so the function in your shoulders and arms is maintained.

However, you may no longer be able to control the muscles in your legs. Although the leg muscles and the motorneurons that control them are still undamaged and are able to function... they can no longer receive instructions.

The main problem is that axons cannot repair themselves and re-grow to their targeted muscles. Because the targets are often still okay, the challenge faced by spinal cord researchers is to determine how to make axons re-grow and re-connect with the appropriate targets in order to restore function.

For an overview of paralysis from spinal cord injury, please see the attached chart

* FYI - an axon is a long fiber of a nerve cell (a neuron) that acts somewhat like a fiber-optic cable carrying outgoing (efferent) messages. The neuron sends electrical impulses from its cell body through the axon to target cells. Each nerve cell has one axon. An axon can be over 20 cm (a foot) in length, which for the human body is remarkably long.

Resources: www.cord.ubc.ca/~steeves/~dave/dmpinh.htm
www.canparaplegic.org

www.sibley.ca

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