

Exercising Post-Spinal Cord Injury

For persons who have sustained a spinal cord injury, a growing body of research suggests that exercise may be — quite literally — the best medicine. Consequently, for spinal cord patients, caregivers, physical therapists and doctors, understanding the full benefits of exercise, and understanding how to design, deploy and maximize the value of a rehabilitative exercise program, is critically important.

Forms of Exercise

With any exercise or physical therapy regimen for spinal cord injuries, early intervention and repetition are critically important.

Spinal cord injury often results in a large area of paralysis. Multiple muscles and multiple extremities may be affected, with significant injuries also involving the trunk and neck.

A more sedentary lifestyle and the lack of mobility and utility in certain areas in the body contribute to potentially significant secondary health problems, such as obesity, diabetes, coronary artery disease, nonhealing wounds, congestive heart failure, and osteoporosis. Exercise can help avoid all of these concerns.

Functional electrical stimulation (FES). FES is important in recovery from a spinal cord injury. Specialized tools such as RTI bikes can yield dramatic results, and any kind of FES treatment — on any muscle beginning to recover — can pay significant dividends. Incorporating exercise in conjunction with FES is even more impactful.

Body-weight training. Bodyweight-supported treadmill training is another therapeutic pillar of any spinal cord injury exercise program. Research is demonstrating how beneficial this can be for incomplete spinal cord injury.

BWS-TT (like any therapeutic exercise program) should be performed under the guidance of a trained physical therapist with specific expertise in spinal cord treatment.

Cardiovascular exercise. Science has shown us that this is another important component of recovery, specifically maintaining the heart

rate at an intensity of 80% of maximum heart rate in intervals. Cardio interval training not only helps with the recovery of motor function, but also the speed with which a damaged muscle can be moved.

Additional Strategies for Success

Some additional best practices for any spinal cord injury exercise treatment include:

Mixing it up. With central nervous system injury, it's important to change the type of therapy and the intensity on a regular basis. You want to constantly stimulate the central nervous system with different exercises and intensities to yield long-term improvements.

Standing for it. A standing program is another key piece of the exercise puzzle, regardless of the type of spinal cord injury.

Weight bearing through the extremities reduces the risk of fracture and bone disease, helps maintain normal range of motion, and helps strengthen skin integrity. Additionally, standing is good for the muscles and internal organs that are typically compressed when seated for prolonged periods of time, ultimately helping with digestion and elimination.

Heading home. For optimal response, supplement your in-office exercise and treatment sessions with a custom-designed home exercise program. While research suggests that it takes at least 10,000 repetitions of a movement to produce a change, not every person will have access to enough therapy sessions due to health insurance restrictions.

Long-term benefits. In addition to the motor skills, respiratory fitness, disease prevention, and strength and mobility benefits, regular therapeutic exercise can also decrease anxiety and depression, and promote social engagement and overall well-being.

The over-riding goal is lifelong health: Keep the body as healthy as possible so that when science does come up with cure or intervention, the body is healthy enough to take full advantage. ■

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