

Pain after Spinal Cord Injury

SUPPLEMENT: Activity Modification for Musculoskeletal Pain



For more information, contact your nearest SCI Model System. For a list of SCI Model Systems go to: <http://www.msctc.org/scimodel-system-centers>

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Exercise

- Almost everyone can benefit from a fitness program that includes resistance training of the muscles that stabilize the shoulder. Training helps prevent shoulder pain as well as treat overuse pain. Strong muscles are less likely to be injured. Talk with your doctor or therapist about starting a program of resistance exercises that emphasizes muscles that are neglected during everyday activities, such as during transfers and wheelchair propulsion.
- For cardiovascular exercise, use upper limb ergometry equipment, such as a stationary bicycle powered by the arms, or a hand-cranked sports wheelchair. You can also box with a speed-bag instead of pushing a manual wheelchair for exercise. These exercises will reduce stress on the shoulders and wrists.
- Make sure your back and shoulder muscles are strong enough to support wheeling and transferring. It is especially important that there is a balance between your left and right sides. Ask your physical therapist to evaluate you and to prescribe strengthening exercises if you need them.

Using a Wheelchair

- Repetitive pushing of wheel rims is a major cause of musculoskeletal pain. Consider obtaining a power or power-assist wheelchair if you:
 - Have significant shoulder, elbow, or hand pain.
 - Have tetraplegia (quadriplegia).
 - Have a prior injury to an upper limb.
 - Are overweight.
 - Are elderly.
 - Live in a challenging environment such as on a steep hill or near rough terrain.
- If you use a manual wheelchair, make sure it is the lightest model (made from aluminum or titanium) you can afford or your insurer will pay for. Lighter models require less effort to push around and can often be customized to make it easier for you to propel the chair.
- If you do use a manual wheelchair, reduce the number of strokes you use per distance traveled. Rather than quick short pushes, use long smooth strokes.
- If you use a manual wheelchair, make sure it is in good repair and set up in a way that allows you to get around with minimal effort. Ask your

therapist to check whether your seat is in the right position relative to your rear axle. Have your therapist check that your chair and cushion give you good stability.

- Get your wheelchair seating, posture and pushing technique evaluated by a rehabilitation professional periodically since your needs, habits or activities may change over time.
- Keep your tires well-inflated to minimize rolling resistance.
- Wheel your chair over concrete and linoleum rather than through sand, grass or heavy carpeting. The reduced resistance to your wheels lessens the load on your arms.

Shoulder Health

- Minimize the frequency of arm/hand tasks, especially tasks that involve lifting heavy loads higher than your shoulder. Let someone get that book off a high shelf for you.
- If possible, do not do tasks repetitively that require you to bring your hand higher than your shoulder. Doing so may require reorganizing your house. Talk with your occupational therapist about home modifications.
- Minimize lifting heavy loads. If you cannot get someone to do the heavy lifting, hold whatever you need close to your chest rather than at the end of an outstretched arm.
- Avoid doing push-up pressure reliefs (weight shifts), which can harm your shoulder joint. Instead, perform side-to-side or forward-lean pressure reliefs. Work with a therapist to learn proper technique for these methods or see the MSKTC fact sheet “How to do Pressure Reliefs (Weight Shifts)” before discontinuing push-ups.

Transfers

- The heaviest thing you lift generally will be yourself. Reduce the number of transfers you do each day, and do them in a way that minimizes risk of injury.
- Transferring from a high point to a lower one is not as hard on your wrists, elbows

and shoulders as transferring from a low to a higher point. It is better to make two level transfers rather than one downhill transfer followed by one uphill transfer.

- Use sliding boards and lifts in making transfers
- When transferring, use a handgrip if available, rather than putting your hand on a flat surface. When transferring, don't spread your hand flat and rest on it. Make a fist, and rest on your knuckles.

When transferring, position your hands as

- close to your body as possible so that your arms are straight up and down and your weight hangs between them.

Alternate which one of your arms is the lead

- arm in transferring. Different muscles are used by the lead and trailing arms during transfers, and alternating the arms keeps muscles balanced.

Maintain your ideal weight. Being overweight is

- hard on your shoulders, arms, and wrists when you do transfers or push your wheelchair.

Reference

Consortium for Spinal Cord Medicine. *Preservation of upper limb function following spinal cord injury: a clinical practice guideline for health-care professionals*. J Spinal Cord Med 2005; 28:433-70.

Authorship

Please see the Spinal Cord Injury Model Systems Consumer Information publication *Pain after Spinal Cord Injury* for information about authorship.

