

THE BENEFITS OF ROWHEELING



Rowheels are the key to *mobility health*!

When you propel your chair using our REV wheels, all the issues associated with push propulsion go away!

The Ergonomics of Rowheeling

Pulling/rowheeling uses the larger back and posterior shoulder muscles that retract the scapula and stabilize the shoulder joint, reducing the risk of impingement/SIS and improving posture. This was confirmed by a recent study by the prestigious Pathokinesiology Laboratory at **Rancho Los Amigos National Rehabilitation Center** comparing the muscle activity of manual wheelchair users while propelling push wheels and rowheeling/pulling push wheels.

The problem with push wheeling is that it uses two muscles (anterior deltoid and pectoralis major) to do all the work, causing them to become overused, tight, and destabilizing the shoulder joint. The rowheeling muscles have the opposite effect as they stabilize the shoulder joint and improve posture, reducing the risk of Shoulder Impingement Syndrome. Rowheeling also distributes the work over a greater number of larger muscles, resulting in less fatigue and overuse of individual muscles.



Rowheeling



Push-wheeling

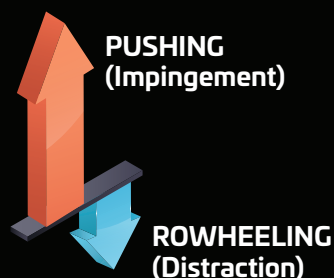
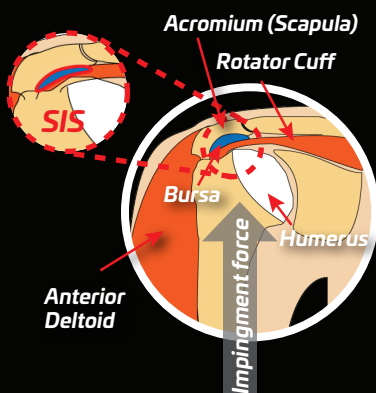
The problem with push-wheeling...



up to **70 percent** of manual wheelchair users develop chronic shoulder injury and pain, reducing their quality of life and affecting their ability to perform activities of daily living.

- Shoulder impingement syndrome is a condition caused by the repetitive impingement or “pinching” of the rotator cuff tendon. Over time, the rotator cuff tendon & surrounding tissue become **inflamed, swollen** and fraying or tearing can occur. **Overuse** of the chest and shoulder muscles involved in **pushing** a chair tend to de-stabilize the shoulder joint, putting users at a much **high risk** for shoulder impingement.

- The same Rancho Los Amigos National Rehabilitation Center clinical study conclusively showed that **rowheeling generates negligible** (pulling up an incline) **or negative** (pulling on level ground) impingement forces.



Average superior shoulder forces during level ground propulsion. (Impingement forces lead to shoulder wear and tear while distraction forces eliminate the problem by pulling the shoulder in the opposite direction)

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