Upper Extremity Rehab in the Elderly

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Whenever a patient age 60 or over needs to regain function in the upper extremity or shoulder girdle, several questions arise: Are exercises appropriate, safe, and effective? Won't exercising the upper extremity make the problem worse, because of degeneration or osteoarthrosis? The last thing we want to do for older patients is to increase their pain or add to their disability.

Contrary to common belief, moderate exercise does not increase the risk for osteoarthrosis, or exacerbate it; rather, exercise has been found to improve function and reduce pain.¹

Concerning exercises for a patient over the age of 60, the benefits generally outweigh the risks. In fact, it is an advantage for people who are aging to be under the care of a chiropractor, who can advise and provide guidance regarding the most effective forms of exercising.

Benefits of Exercise for Older Patients

A nationwide survey shows that 70 percent or more of older adults do not engage in any regular exercise.² This is compounded by loss of strength and muscle mass, and increase in body fat, that is normally seen in aging. This change in body composition is tied to many factors, including poor nutrition, decreased physical activity, increased disability and disuse, type II muscle fiber atrophy, and drug side-effects.

There is now a wealth of data that supports the value of resistance exercise in the geriatric population. Improvements are seen in weight and body composition, decreased falls/improved balance, better psychological health, less frailty, and improved function. With exercise, the resting blood pressure lowers and there is a reduction in the risk of all-cause mortality.³ These benefits overwhelm the few detrimental concerns, and encourage us to recommend resistance exercise to older patients who need upper extremity rehab.

Upper Extremity Choices

Isometric exercises may increase the systolic blood pressure; therefore, isotonic (or "dynamic") exercises are safest for older patients.⁴ Elastic resistance tubing is an excellent method to provide strengthening.
dynamic exercise for the upper extremity without the need for machines or heavy weights. A home-based program using elastic tubing can provide significant gains in upper extremity strength and improvements in daily functioning.  

**Posture and Exercise Results**

A factor that is frequently overlooked when planning exercise for the upper extremity is the influence of posture on shoulder girdle and arm function. Several studies support the need to evaluate the patient for specific postural distortions that interfere with shoulder function, such as thoracic kyphosis and cervical anterior translation (causing a "forward head"). Correction of any chronic alignment faults will significantly reduce the biomechanical stress on muscular support for the shoulder.

A very easy and effective rehab program starts with a consistent isotonic exercise routine, using elastic tubing equipment to perform external rotation. This is initially performed within a limited, pain-free range of motion, building to full range as pain subsides. A stretching program consisting of "in-doorway stretch exercises" will progressively improve shoulder flexibility and external rotation range of motion.

Exercises for the supraspinatus muscle may need to be initially avoided in older patients, since they can tend to further irritate and compress the muscle tendon in the subacromial space. This inexpensive rehabilitation program should initially be practiced under supervision to ensure proper performance. Once good exercise and stretching mechanics are demonstrated, a self-directed program of home exercises is appropriate.

**The "Pronated" Shoulder**

Even the coordination of the lower extremities during gait is a critical aspect of shoulder function. While gravity and ground reaction forces are affecting the legs and feet, the torso and shoulder are also responding. With each step, the scapula reacts to opposite-leg loading by tipping anteriorly in the sagittal plane, rotating upward in the frontal plane, and gliding around the rib cage in the transverse plane (protraction). This reaction at the shoulder produces the appearance of a hunched and forward-rounded shoulder, and can be described as "shoulder pronation."

The biomechanical and neurological processes that link shoulder pronation to lower extremity pronation on the opposite sides help us understand some of the previous treatment failures, particularly in older patients. This may require the use of an in-shoe support for long-term management.
Conclusion

An appropriate and progressive rehab program should be started early in the treatment of elderly patients with upper extremity problems. Simple, effective rehab techniques are available, none of which requires expensive equipment or great time commitments. A closely monitored home exercise program is recommended, since this allows the doctor of chiropractic to provide cost-efficient, effective rehabilitative care.

References


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