



Fig. E-1A



Fig. E-1B



Fig. E-1C

Figs. E-1A through E-1C Correction of the sitting position to increase the patient's awareness for the correct sitting position and the interscapular muscles. **Fig. E-1A** The patient sits on a stool with the hands on the knees. **Fig. E-1B** The physiotherapist corrects the sitting position and uses facilitation techniques on the interscapular muscles. **Fig. E-1C** The patient retracts and protracts the shoulder girdle.

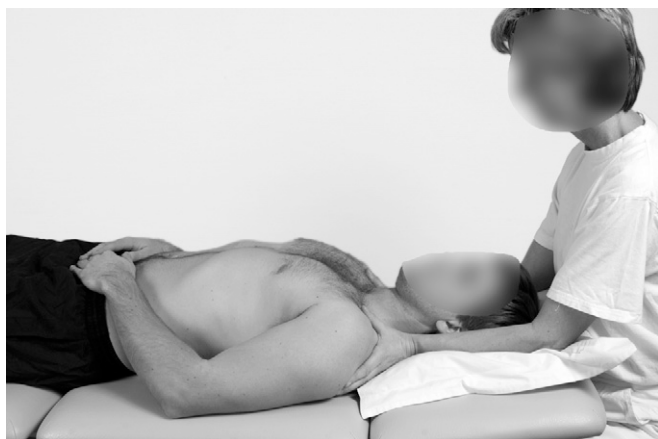


Fig. E-2A



Fig. E-2B



Fig. E-2C



Fig. E-2D

Figs. E-2A through E-2D Treatment to relax the upper part of the trapezius muscle. **Fig. E-2A** Patient in the supine position with pillows under the knees and under the head and neck. Hands are lying on the stomach. The physiotherapist places her hands on top of the patient's shoulder girdle. **Fig. E-2B** The patient elevates his shoulders cranially with or without resistance from the physiotherapist and holds the position isometrically. The physiotherapist supports the movement back to the starting position. **Fig. E-2C** The physiotherapist massages the upper trapezius. **Fig. E-2D** The physiotherapist stretches the muscles by first flexing the patient's head laterally toward the opposite side and then flexing it anteriorly and rotating it to the same side.

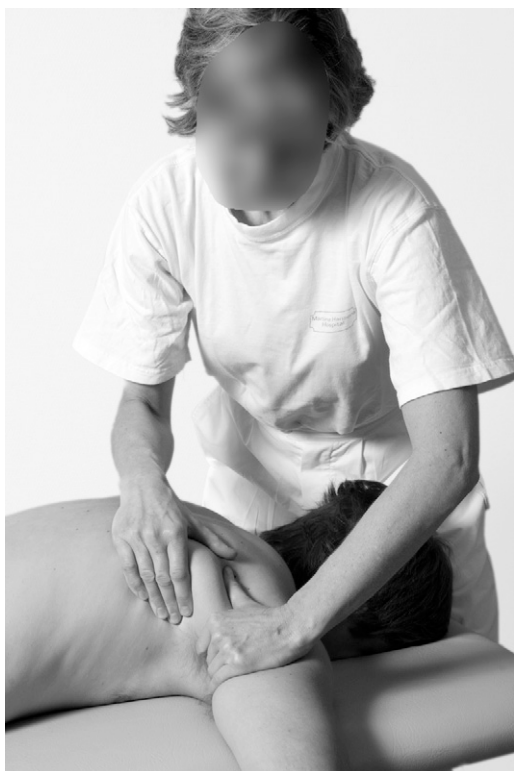


Fig. E-3

The patient is in the prone position with the arms hanging over the edge of the bench. To relax the muscles of the dorsal armpit, the physiotherapist massages, twists, and shakes the muscles in the dorsal armpit. The physiotherapist starts laterally and works toward the subscapularis muscle.



Fig. E-4A



Fig. E-4B



Fig. E-4C

Figs. E-4A through E-4E The physiotherapist relaxes and stretches the levator scapulae muscle. **Fig. E-4A** The patient is in the right or left lateral recumbent position, and the physiotherapist sits behind the patient. **Fig. E-4B** The patient adducts and elevates the scapula and holds it isometrically. **Fig. E-4C** The physiotherapist supports and reinforces the caudal motion of the scapula.



Fig. E-4D



Fig. E-4E

Fig. E-4D The physiotherapist stretches the levator scapulae muscle by rotating the scapula caudally. **Fig. E-4E** The physiotherapist stretches the levator scapulae muscle by rotating the scapula laterally.



Fig. E-5A

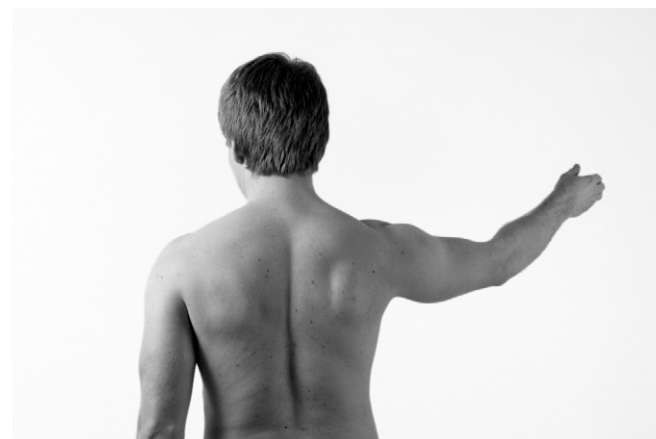


Fig. E-5B

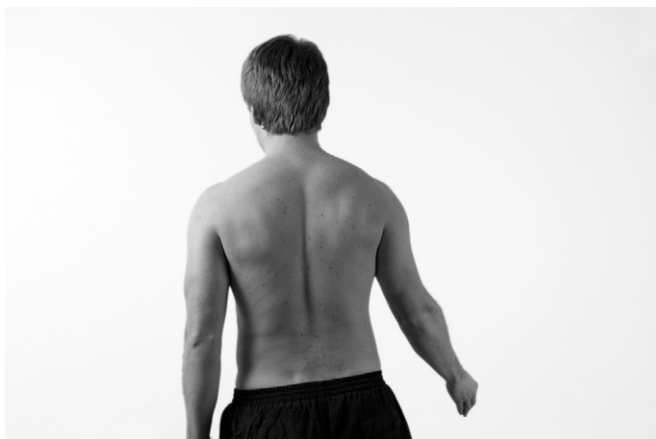


Fig. E-5C

Figs. E-5A through E-5C Stabilization of the scapula. **Fig. E-5A** The patient is in the standing position. The physiotherapist elevates the arm of the patient to 90° in the plane of the scapula, adducts the scapula, and facilitates the interscapular muscles. **Fig. E-5B** The patient has to hold the weight of the arm while he keeps the scapula adducted. **Fig. E-5C** The patient lowers the arm while adducting the scapula.



Fig. E-6A



Fig. E-6B



Fig. E-6C



Fig. E-6D

Figs. E-6A through E-6D Positioning of the scapula with external rotation in the glenohumeral joint to strengthen the infraspinatus and interscapular muscles and to stabilize the glenohumeral joint. **Fig. E-6A** The patient is in the prone position. **Fig. E-6B** With one hand, the physiotherapist guides the scapula into the correct position. With the other hand, she supports the arm in abduction and external rotation. **Fig. E-6C** The physiotherapist slips the scapula. **Fig. E-6D** The patient has to use the interscapular muscles to maintain the position of the scapula and to hold the load of the arm.

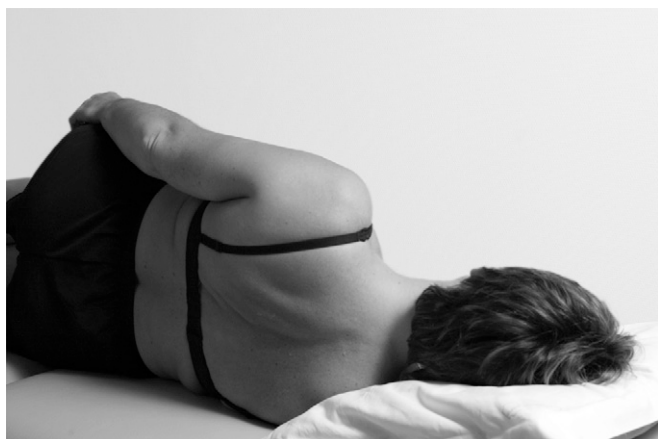


Fig. E-7A

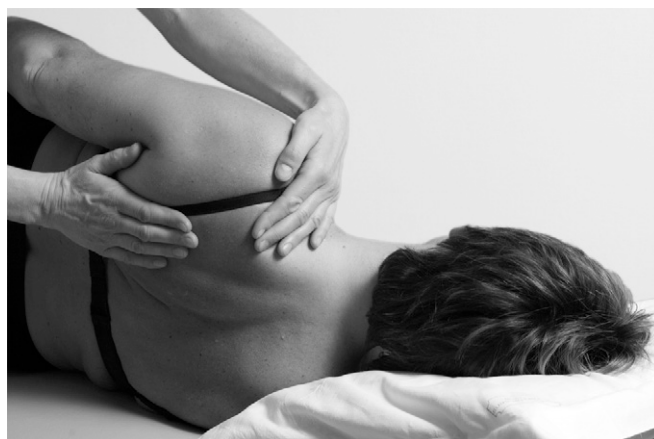


Fig. E-7B



Fig. E-7C



Fig. E-7D

Figs. E7-A through E7-D Elevation of the arm in the plane of the scapula to correct the humeroscapular rhythm and to centralize the humeral head. **Fig. E-7A** The patient is in the right or left lateral recumbent position with the upper arm along the body. **Fig. E-7B** The patient retracts the scapula medially. The physiotherapist assists the motion of the scapula. **Fig. E-7C** The physiotherapist elevates the patient's arm in the plane of the scapula. **Fig. E-7D** The patient progresses from active-assisted to active movement and to full elevation.



Fig. E-8A



Fig. E-8B



Fig. E-8C

Fig. E-8A through E-8C Rotation of the glenohumeral joint to strengthen the rotator cuff muscles and to stabilize the scapula. **Fig. E-8A** The patient is in the standing position with arms 90° abducted in the plane of the scapula, elbows flexed to 90°. **Fig. E-8B** The patient squeezes his scapulae together while rotating the humerus slowly internally and externally. **Fig. E-8C** Progress from performing the exercise without load to use of weights.



Fig. E-9A



Fig. E-9B



Fig. E-9C

Figs. E-9A through E-9C Arm movements on a Swiss ball to stabilize the spine and the shoulders and to strengthen the muscles of the arms and the upper spine. The patient is in the prone position lying on a Swiss ball, with hips and knees extended and toes touching the floor. **Fig. E-9A** The patient squeezes the scapulae together, puts the hands on the back of the neck, and lifts the upper body. **Fig. E-9B** The patient extends the arms straight out to the side and then moves them back to the starting position while keeping the scapulae squeezed together. **Fig. E-9C** The patient extends the arms cranially and moves them back to the starting position while pulling the scapulae caudally.



Fig. E-10A



Fig. E-10B

Figs. E-10A and E-10B Shoulder flexion in slings to stabilize the upper body, the shoulder girdle, and the glenohumeral joint. **Fig. E-10A** The patient is kneeling with the hands in the slings. **Fig. E-10B** The patient leans forward while flexing the arms and extending the neck. Then the patient pulls his body slowly back to the starting position.

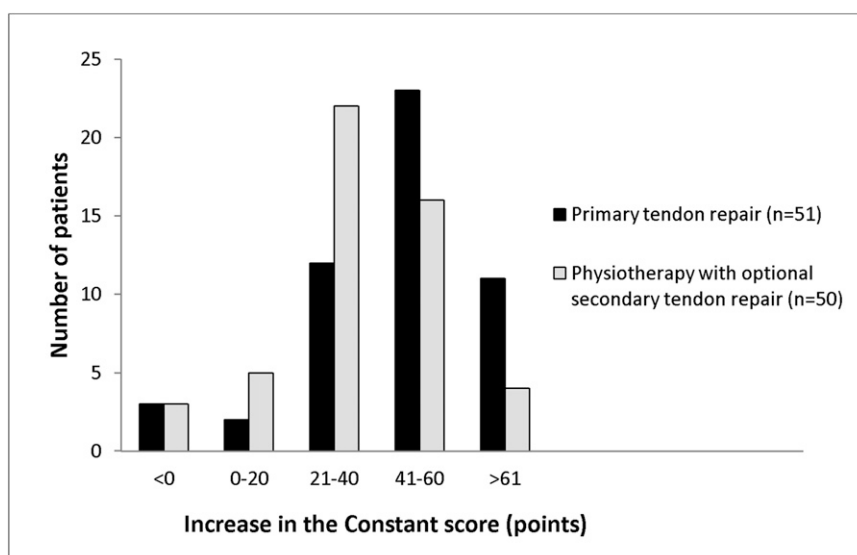


Fig. E-11
 Distribution of the increases in the Constant score from baseline to the five-year follow-up for the primary tendon repair group and the physiotherapy with optional secondary tendon repair group. Compared with the main analysis, the number of patients is reduced by two, due to one case of death in each group.

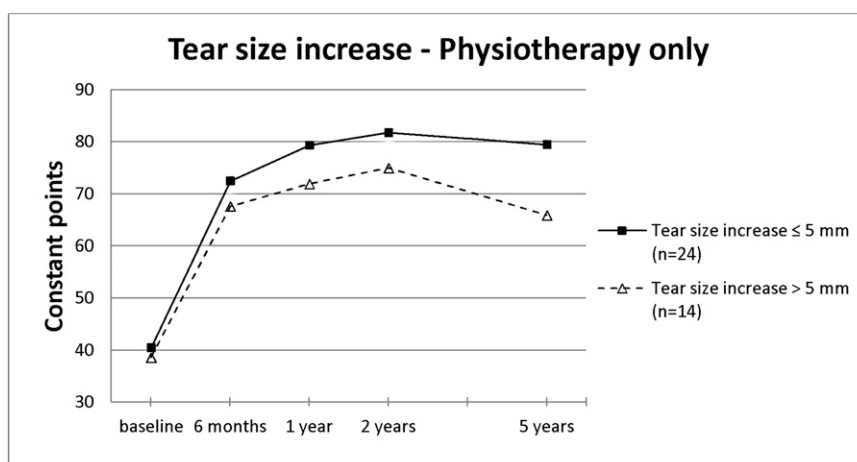


Fig. E-12
 Plot showing mean Constant scores at baseline and six-month, one-year, two-year, and five-year follow-ups for the patients treated by physiotherapy only. Based on results from sonography at baseline and after five years, separate curves are given for patients with a tear size increase of ≤ 5 mm and for those with a tear size increase of > 5 mm.

TABLE E-1 Adverse Events and the Need for Additional Therapeutic Measures During Follow-up

	Primary Tendon Repair	Physiotherapy with Optional Secondary Repair
Site other than the shoulder		
Medical event	One case of polymyalgia rheumatica prior to the two-year follow-up and one case of cerebral apoplexy after the two-year follow-up	One case of polymyalgia rheumatica, one case of herpes zoster, and one case of lymphoma, all prior to the two-year follow-up
Surgical event	One case of operatively treated abdominal aortic aneurysm after the two-year follow-up	
Musculoskeletal event	One case of lateral humeral epicondylitis and one patient with cervical radiculopathy prior to the two-year follow-up and one case of low back pain and one case of cervical radiculopathy after the two-year follow-up	One case of cervical radiculopathy prior to the two-year follow-up
Index shoulder		
Need for additional therapeutic measures	One case of physiotherapy prior to the two-year follow-up and one case of reoperation with acromioplasty and bicepstenotomy after the two-year follow-up	Three cases of physiotherapy after the two-year follow-up
New shoulder trauma	One case of a fracture of the humerus prior to the two-year follow-up and one case of a contusion of the shoulder after the two-year follow-up	Two cases of contusion of the shoulder prior to the two-year follow-up and one case of contusion of the shoulder after the two-year follow-up