

## **The Efficacy of Home Shoulder Therapy Programming: A Clinical Case Study**

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**Background and Purpose.** There is a paucity of literature dealing with the effectiveness of home based shoulder therapy programs. With rising out of pocket expenses increasing patient responsibility, there is an increased need to look at the safety and efficacy of home based physical therapy programs. The purpose of this study was to assess patient progress and efficacy of home-based physical therapy programming.

**Subjects.** Fourteen subjects, presenting with shoulder complaints, received instruction in a home physical therapy shoulder program. (n=14; 44% female, 56% male; (mean age [ $\pm$ SD] =63.92 $\pm$ 8.47 years). Seven of fourteen subjects had co-pays averaging \$32.14/visit (high \$40/low \$10). The 14 subjects seen included: 1 s/p TSA, 1 RTC repair, 2 proximal humerus fractures, 1 OA, 8 non-operative RTC tears and 1 RTC tendonitis.

**Methods.** Subjects, following both written and verbal instruction in PROM/S1/S2 therapeutic exercise program, performed the prescribed therapy program. Subjects were scheduled for a follow-up visit at 7-10 days in an effort to assess progress and to insure proper completion of the exercise patterns. Subject progress was based on changes in shoulder flexion, external rotation in (POS), internal rotation and pain. Pain was assessed at rest, with ADL's and while sleeping.

**Results.** Subjects assessed in follow-up demonstrated improvement in range-of-motion as follows: Flexion, from 100.42 degrees to 132.21 degrees (range 2 to 80), ER in (POS) from 38.14 degrees to 53.5 degrees (range 4 to 40) and internal rotation showing the least amount of progress with subjects averaging 1.92 spinal levels above initial measurements (range 0 to 8). Subjects performing self directed home exercise programming consistently noted pain with internal rotation affecting compliance. Pain levels (using VAS of zero no pain to 10 excruciating pain) decreased at rest from 2.07 to 1.57 (range 0 to 3), during ADL's from 5.07 to 3.42(range 0 to 5) and while sleeping from 4.35 to 2.85(range 0 to 8). In addition, subjects on follow-up were noted to be inconsistent in proper completion of the external rotation pattern demonstrated and explained during the initial encounter.

**Discussion and Conclusion.** While subjects performing the home exercise program demonstrated marked improvement in both shoulder flexion and external rotation, there were minimal gains seen in internal rotation. One reason for minimal gains being seen in internal rotation was due to the subjects reporting increased pain while performing the exercise. Time differences between initial encounter and follow-up varied between subjects affecting outcomes. Subjects, on average, were seen in follow-up at 15 days from the initial encounter (range 4 to 50 days). Improved program design and measurement techniques will aide in patient safety and compliance.