

The effects of a conservative shoulder rehabilitation for an individual with chronic spinal cord injury and persistent shoulder pain: A retrospective case report

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Background

Nearly one out of three individuals with a spinal cord injury (SCI) will experience shoulder pain at some point in their lives¹. This pain can be especially debilitating due to the increased use of the upper extremities for mobility, transfers, and pressure relief.² Due to this reliance on the upper extremities, conservative interventions for persistent shoulder pain may be favored over surgical interventions.³ The purpose of this case report is to describe the outcomes of a 6-week physical therapy (PT) treatment plan for an individual with chronic SCI who had been experiencing persistent shoulder pain.

Case description

This patient was a 53-year-old male with a T4 level chronic SCI sustained 17 years prior. The patient had chronic left shoulder pain worsening over the previous two months. This case report examines the effects of a six-week conservative, non-surgical treatment protocol utilizing traditional PT on the outcomes of pain, range of motion, strength, and function.

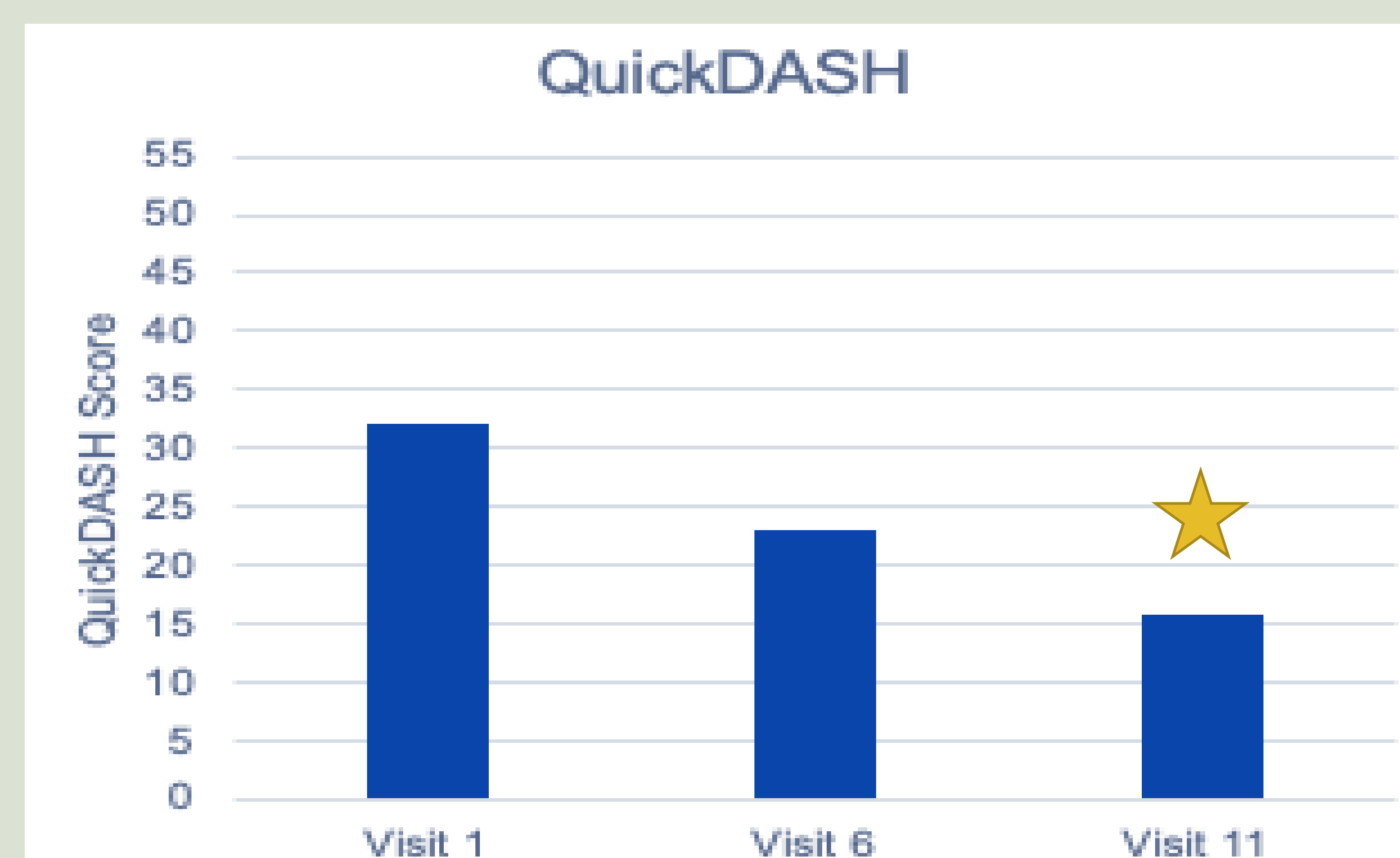
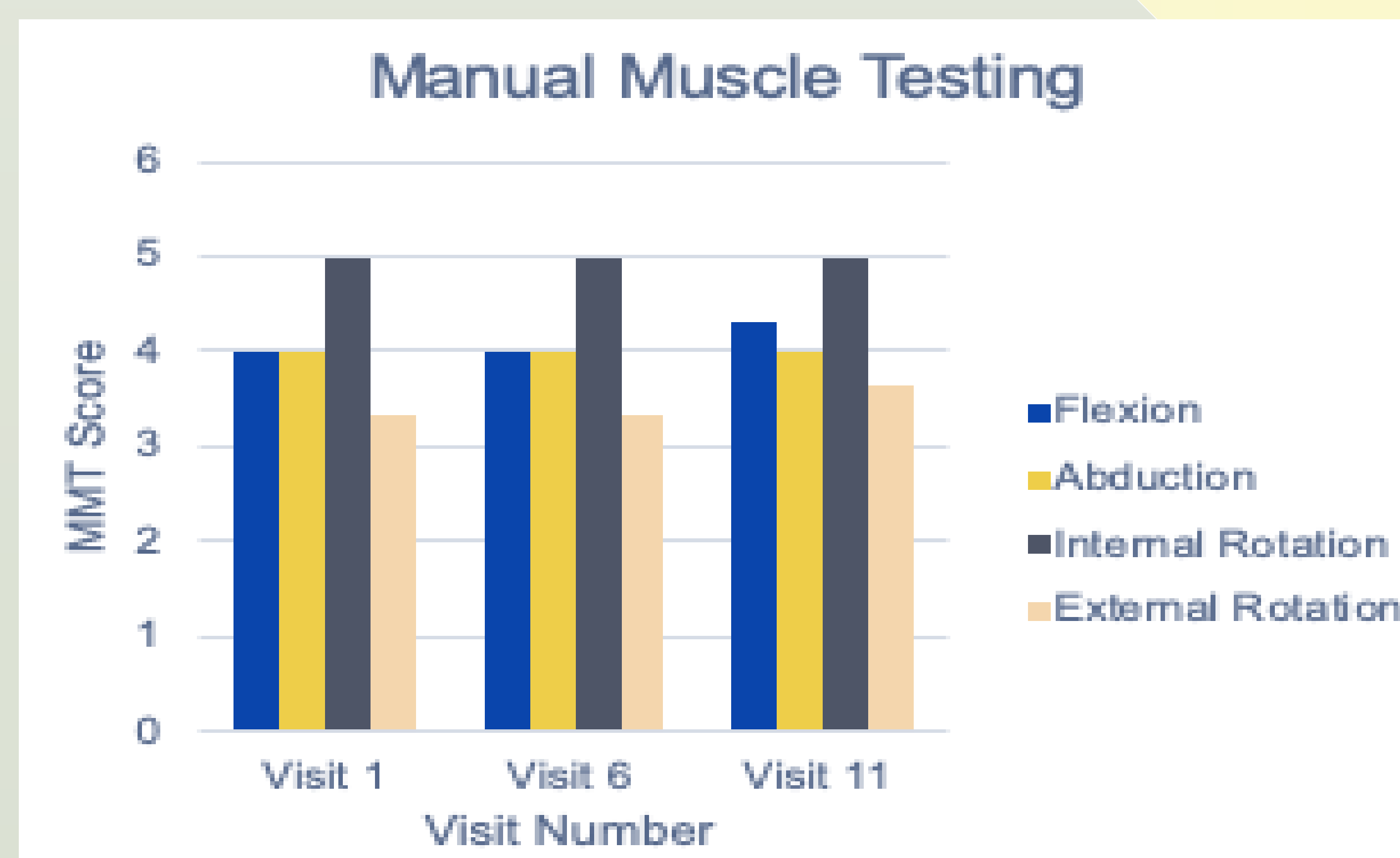
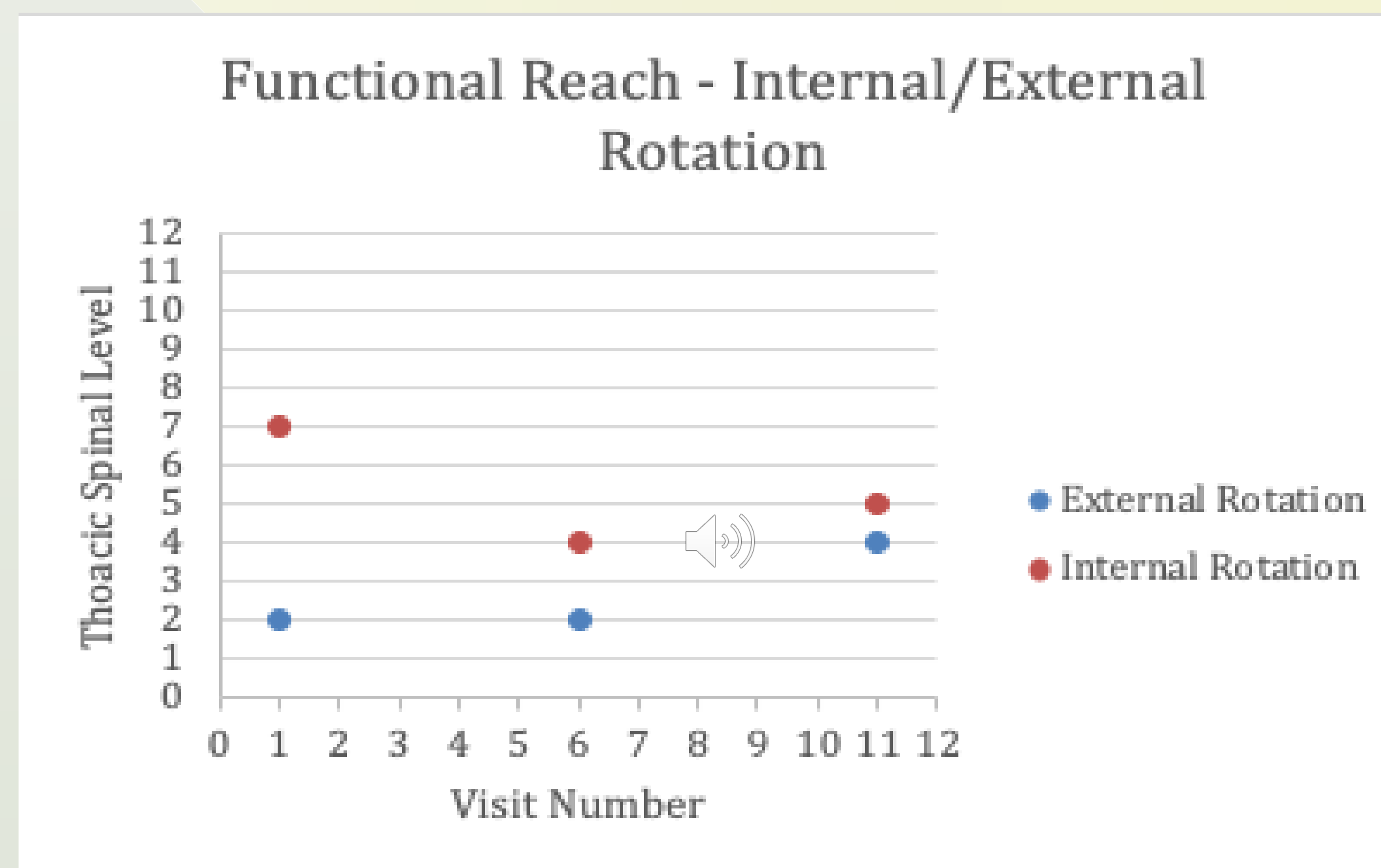
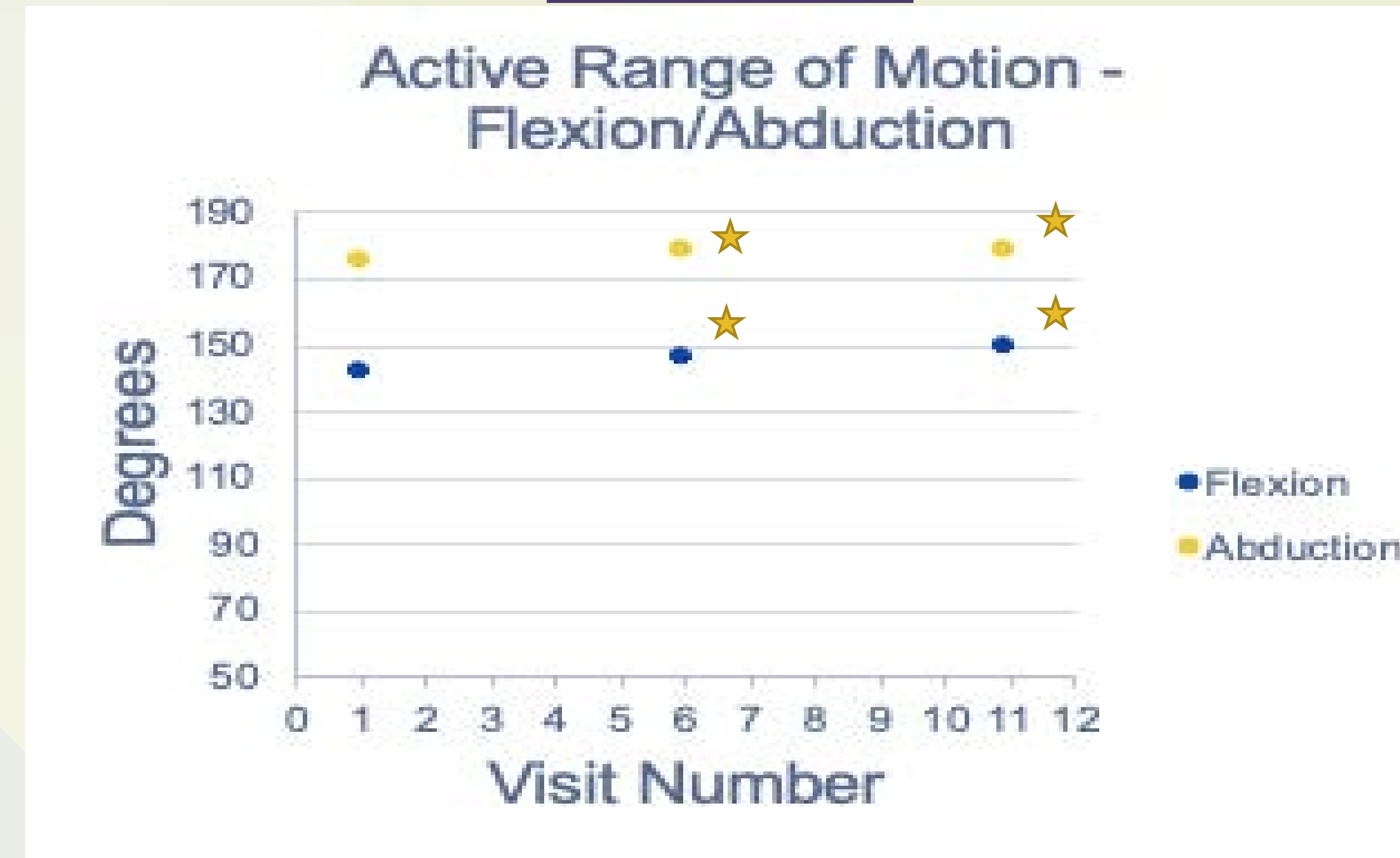
Systems Review

The patient demonstrated impairments in the neurological and musculoskeletal systems. The patient demonstrated gross strength and range of motion deficits in bilateral shoulders as well as absent sensation below his level of SCI (T4). The integumentary, cardiopulmonary, digestive, and urogenital systems were screened via a self-report questionnaire and were unimpaired.

References

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Outcomes



Interventions

Interventions consisted of manual therapy, therapeutic exercises, therapeutic activities, and neuromuscular re-education. Manual therapy consisted of soft tissues mobilization to the left shoulder. Therapeutic exercises included activities such as shoulder flexion and abduction with resistance, bicep curls, and scapular rows. Therapeutic activities consisted of functional movements such as overhead reaching and wheelchair propulsion. Neuromuscular re-education consisted of shoulder isometrics, rhythmic stabilization, and D1/D2 PNF patterns with resistance.

Visit #	Therapeutic Activities Dynamic activities to improve function (e.g. Overhead reaching, propulsion simulation)	Manual Therapy Soft tissue mobilization	Therapeutic Exercise Exercises used to develop strength, endurance, and range of motion (e.g. Shoulder flexion, shoulder abduction, biceps curls, seated rows)	Neuromuscular re-education Used to improve movement, balance, coordination, and/or proprioception (e.g. Shoulder isometrics, rhythmic stabilization, PNF)
1 (IE)				
2	X-1	X-1	X-2	X-6
3		X-1	X-2	X-8
4		X-1	X-1	X-6
5		X-1	X-3	X-3
6 (PN)	X-3	X-1	X-3	X-4
7	X-2	X-1	X-2	X-2
8	X-3	X-1	X-3	X-3
9	X-2	X-1	X-7	X-1
10	X-3	X-1	X-3	X-3
11 (PN)	X-3	X-1	X-2	X-2
12	X-2	X-1	X-4	X-3

Conclusion

Improvements were seen in pain, range of motion, strength, and function. The findings of this report suggest that a conservative course of PT may be a reasonable alternative to surgical intervention for individuals with SCI who have persistent shoulder pain. Future studies could investigate optimal treatment parameters studying the effects of different frequencies and volumes in regards to total treatment sessions completed.

