

Introduction

Background

Dystonia is a neurological disorder, characterized by involuntary muscle spasms and tremors, resulting in abnormal movements and posture. Symptoms include pain, spasms, tremors, and dyskinesia. Conventional treatments include medication, botulinum injections, and surgical intervention. Many dystonia patients seek complementary and alternative medicine (CAM) therapies such as massage, but the effects of treatments are not well documented. Little research was found on massage and dystonia. This study documents massage treatment for dystonia, in a specific case.

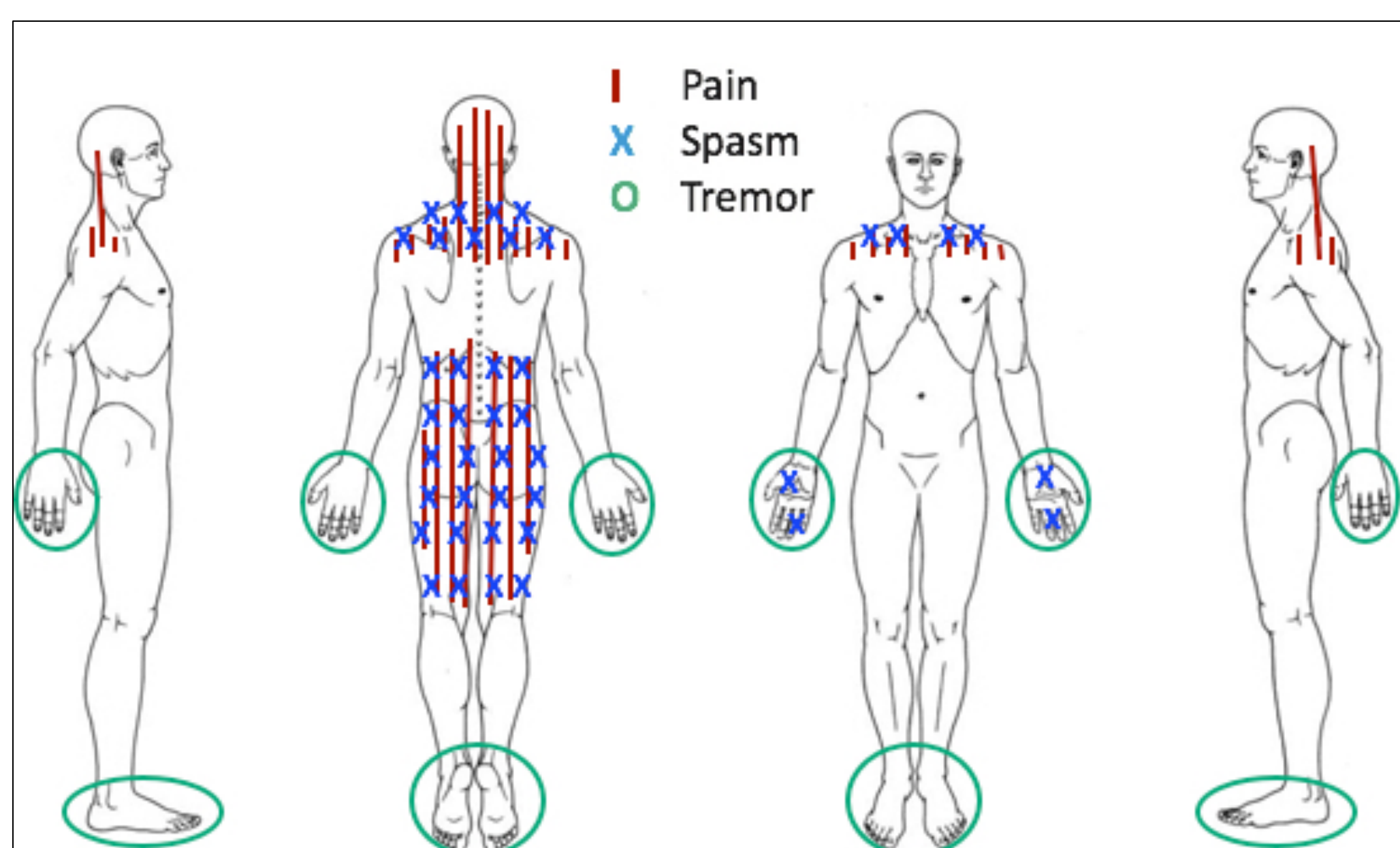
Objective

To examine the effects of massage therapy on pain, dyskinesia, and functional mobility in activities of daily living in a patient with dystonia.

Methods

Patient Profile

A 51-year-old female presented with symptoms of pain, spasms, and tremors, affecting functional mobility in activities of daily living. She first experienced symptoms following a rock-climbing accident in 1998, and was diagnosed with dystonia in 2003.



Patient's symptom profile at initial assessment

Treatment

A student massage therapist administered five massages over a six-week period.

Techniques used:

- Swedish massage
- Hydrotherapy
- Myofascial release
- Stretching
- Remedial exercise

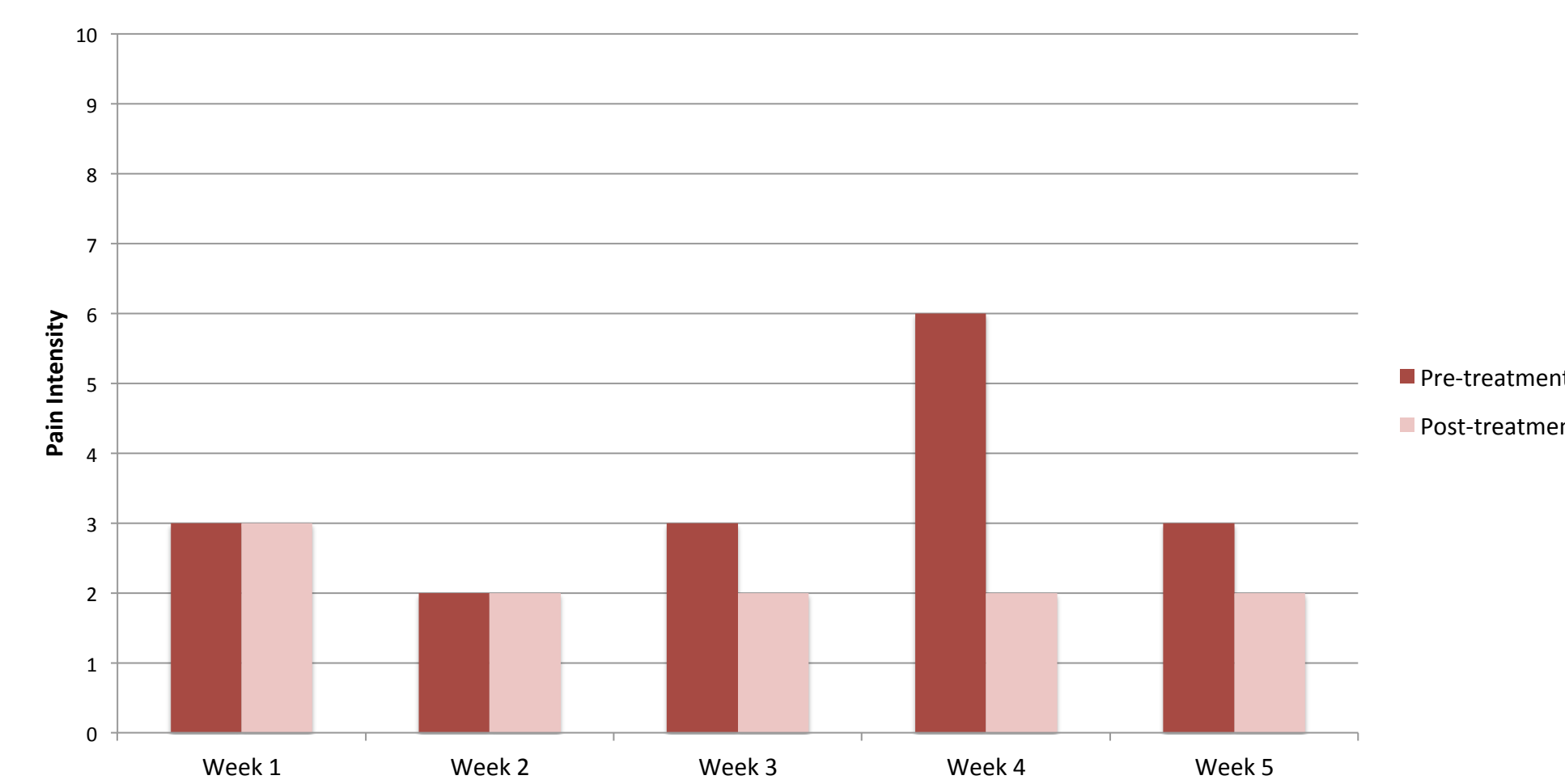
Assessment

- Pre- and post-Numeric Rating Scale for pain
- Frequency of night pain
- Modified Bradykinesia Rating Scale
- Timed Up and Go Test
- Functional Rating Index
- Modified Gait Efficacy Scale

Results

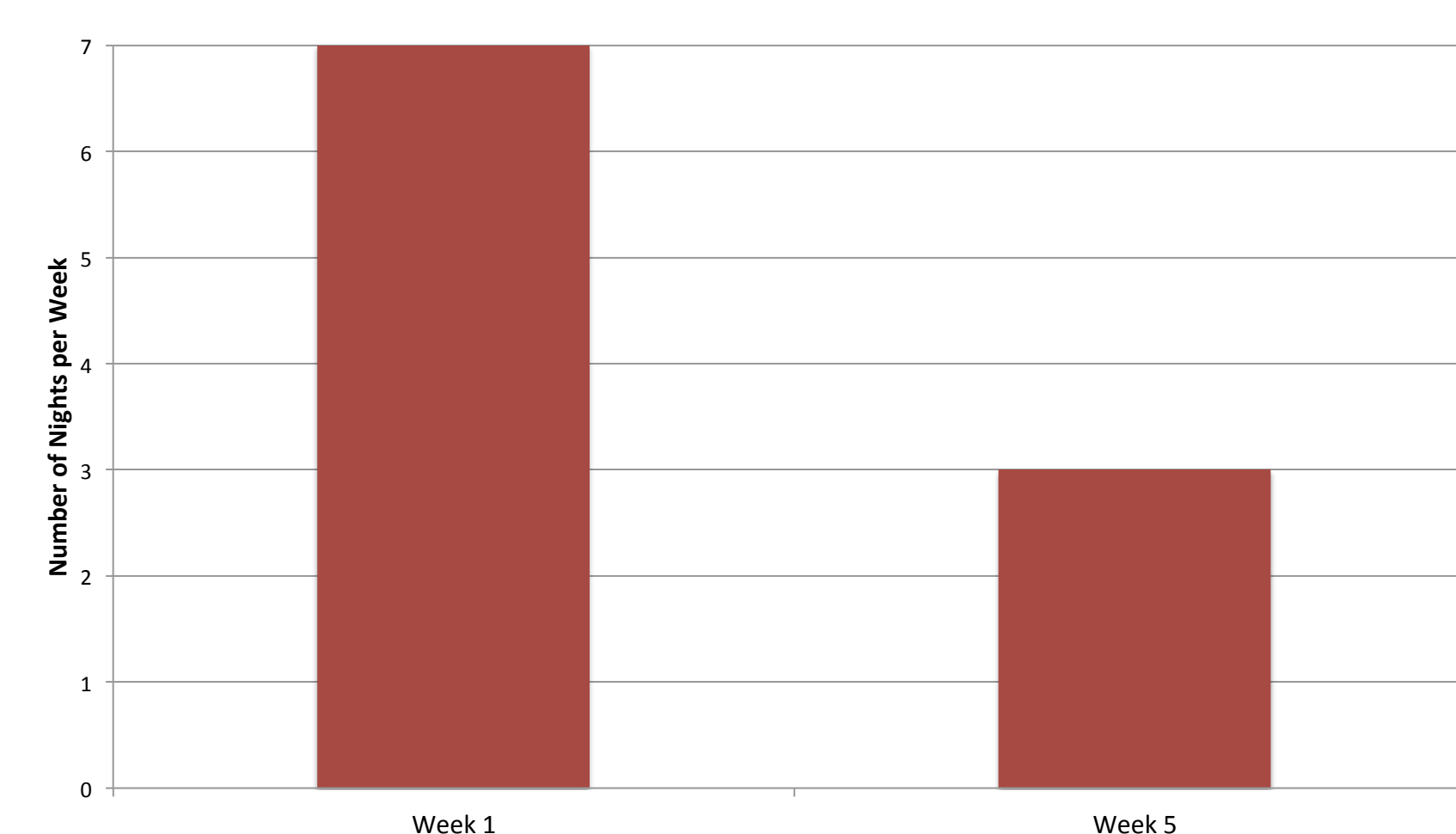
Positive Outcomes

Pre- and Post-Numeric Rating Scale for Pain



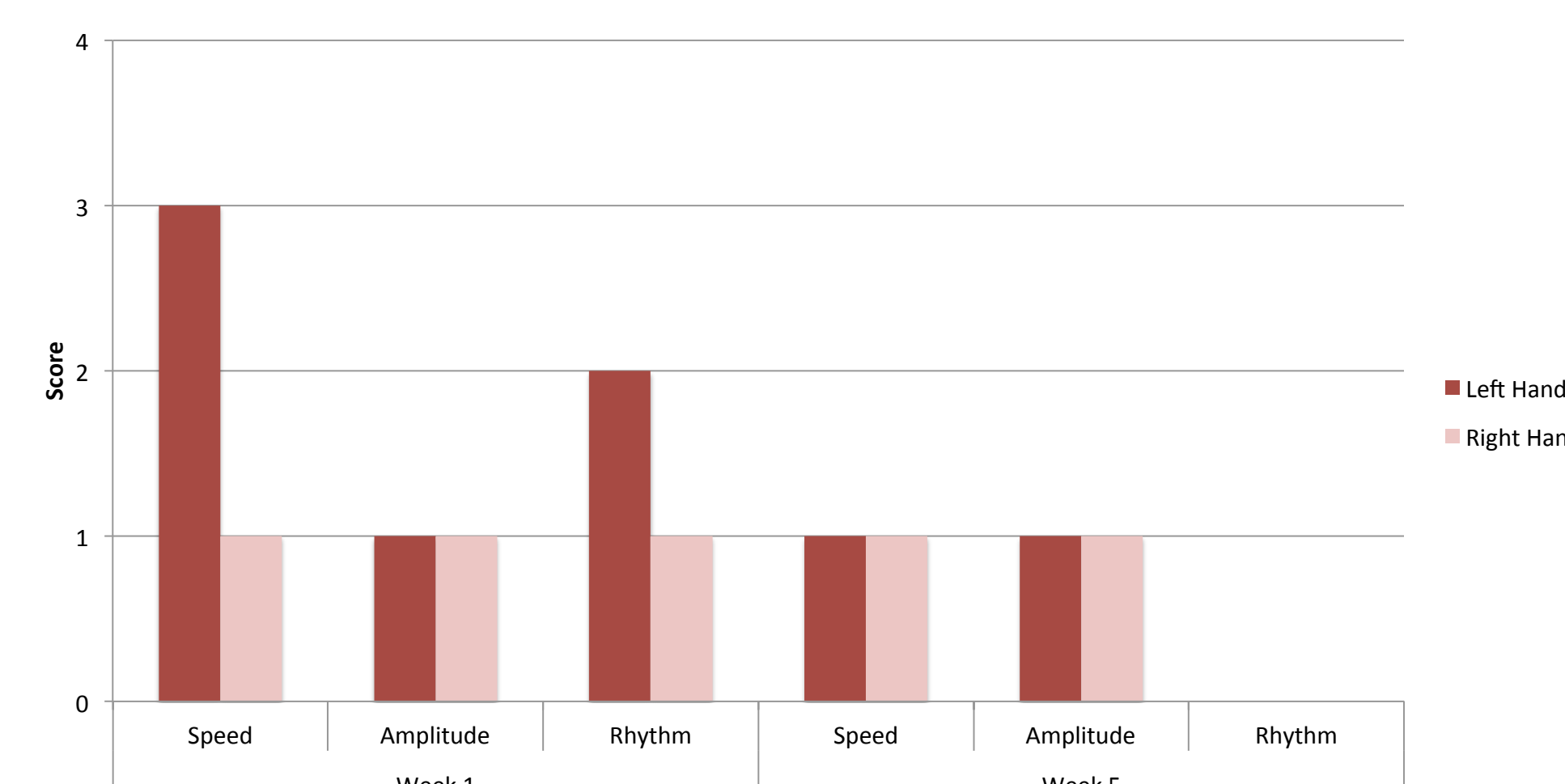
Post-treatment pain intensity generally remained the same or decreased.

Frequency of night pain



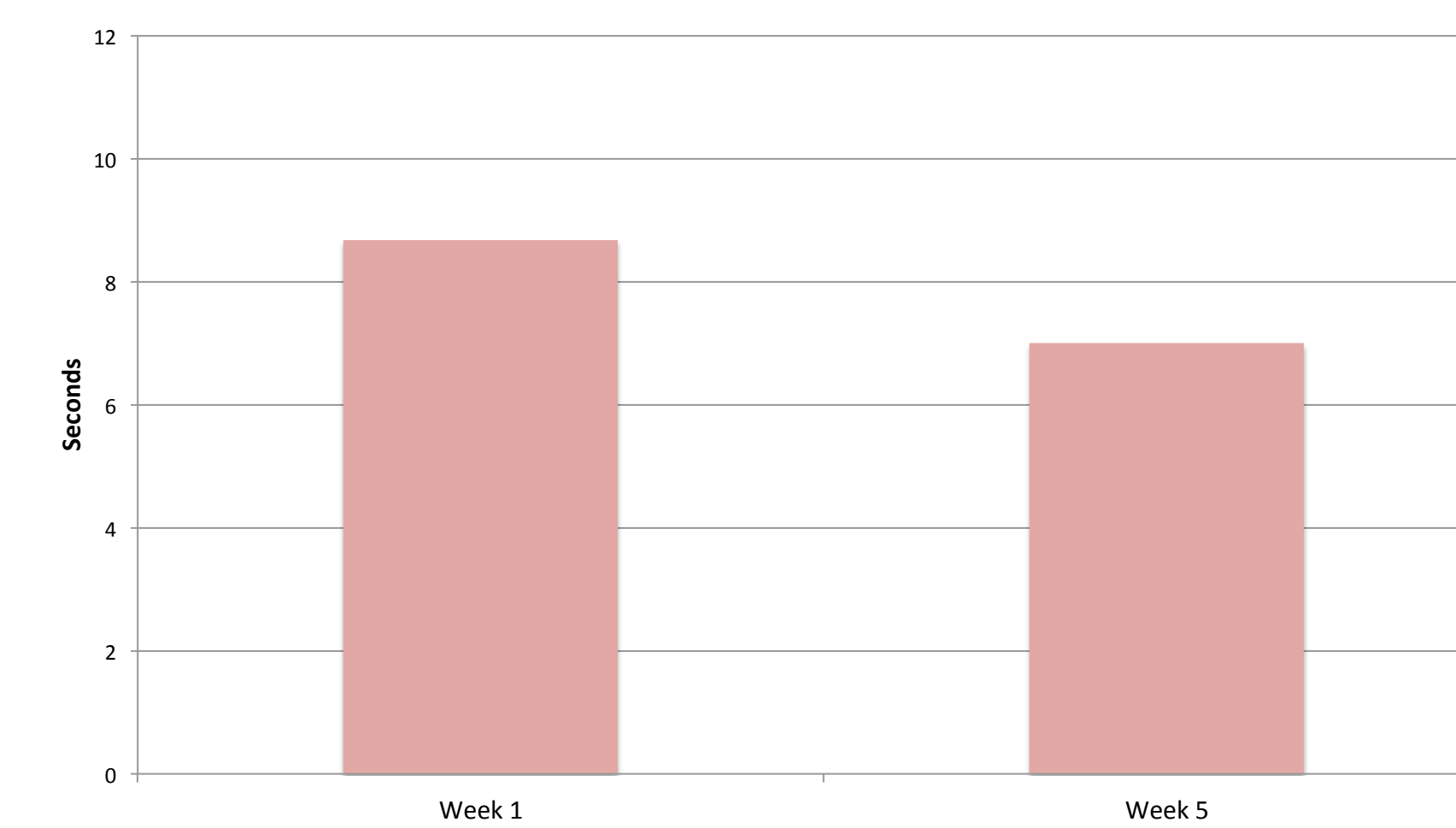
A decrease in frequency of pain experienced at night was shown.

Modified Bradykinesia Rating Scale



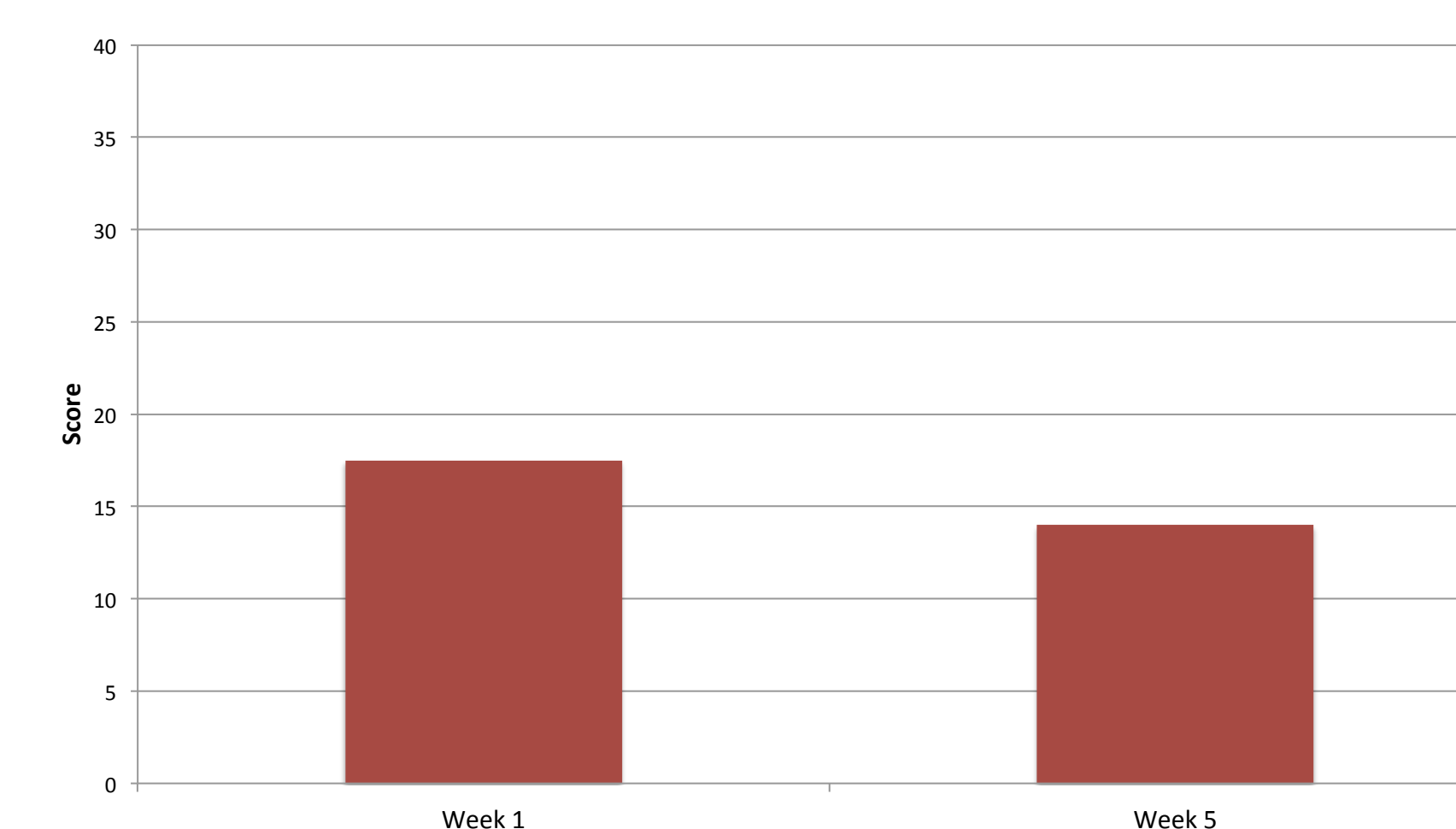
Decreased scores show an improvement in kinematic variables of speed and rhythm.

Timed Up and Go Test



Decreased test time shows an improvement in test score.

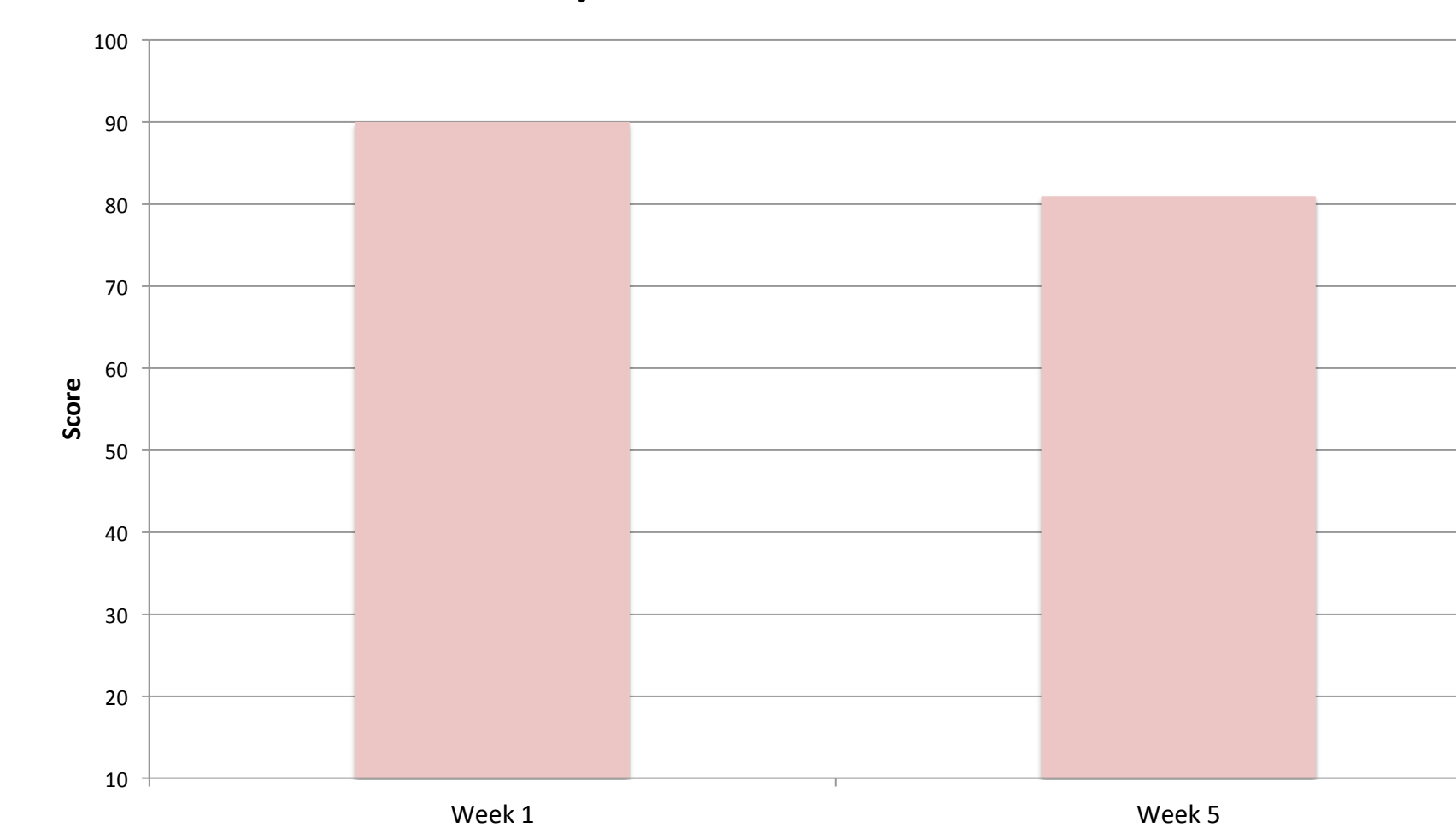
Functional Rating Index



Decreased score shows an improvement in subjective functional ability.

Negative Outcomes

Modified Gait Efficacy Scale



Decreased score shows a worsening of subjective gait ability.

Conclusion

The results demonstrate a positive effect on symptoms of dystonia through massage therapy:

- Intensity and frequency of pain decreased
- Functional mobility improved, particularly in standing
- Dyskinesia decreased, with the patient executing smoother walking and squatting movements

The negative outcome may be explained by the patient's altered gait during variable weather conditions during the study period.

The application of slow, rhythmical techniques, with moderate pressure, likely decreased SNS firing and increased relaxation, affecting movement patterns and perceived symptoms.

Shortcomings of this case study:

- A lack of specific dystonia classification in diagnosis decreased the precision of research, evaluation of progress, and treatment design
- Consistent feedback could not be obtained due to treatment plan modifications in the final two sessions
- Multiple massage techniques were employed; conclusions could not be drawn regarding specific effects of each type
- A longer observation period may have increased reliability

Massage therapy may be a viable alternative or adjunct therapy for dystonia, as more general practitioners are suggesting CAM, and more patients are using these therapies.

For the future:

- Recent research implicates a need to investigate tactile inputs such as massage and its effects dystonia
- Randomized controlled trials, larger sample sizes, longer evaluation periods, more forms of dystonia, and isolation of various massage techniques for neuromuscular conditions need to be studied in clinical trials

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References

- Comella C. Dystonia. In: Verhagen Metman T, Kompoliti K, eds. *Encyclopedia of Movement Disorders*. Amsterdam, NE: Elsevier Academic Press; 2010: 367-375.
- Avanzino L, Tinazzi M, Ionta S, Fiorio M. Sensory-motor integration in focal dystonia. *Neuropsychologia*. 2015;79:288-300. doi:10.1016/j.neuropsychologia.2015.07.008.
- Albanese A, Asmus F, Bhatia KP, et al. EFNS guidelines on diagnosis and treatment of primary dystonias. *Eur J Neurol*. 2011;18:5-18. doi:10.1111/j.1468-1331.2010.03042.
- Fleming BM, Schwab EL, Nouer SS, Wan JY, LeDoux MS. Prevalence, predictors, and perceived effectiveness of complementary, alternative and integrative medicine in adult-onset primary dystonia. *Parkinsonism Relat. Disord*. 2012;18(8):936-940. doi:10.1016/j.parkreidis.2012.04.027.
- Albanese A. Dystonia. *Movementdisorders.org*. <http://www.movementdisorders.org/MDS/About/Movement-Disorder-Overviews/Dystonia.htm>. Accessed February 24, 2017.
- Fung V, Jinnah HA, Bhatia K, Vidailhet M. Assessment of the patient with isolated or combined dystonia: An update on dystonia syndromes. *Mov Disord*. 2013;28(7):889-898. doi:10.1002/mds.25549.
- van Rooijen DE, Geraedts EJ, Marinus J, Jankovic J, van Hilten JJ. Peripheral trauma and movement disorders: A systematic review of reported cases. *J Neurol Neurosurg Psychiatr*. 2011;82(8):892-898. doi:10.1136/jnnp.2010.232504.
- Candia V, Rosset-Lobet J, Elbert T, Pascual-Leone A. Changing the brain through therapy for musicians hand dystonia. *Ann N Y Acad Sci*. 2005; 1060:335-342. doi:10.1196/annals.1360.028.
- Bernstein CJ, Ellard DR, Davies G, et al. Behavioural interventions for people living with adult-onset primary dystonia: A systematic review. *BMC Neurol*. 2016;16(40):1-14. doi:10.1186/s12883-016-0562-y.
- Junker J, Oberwittler C, Jackson D, Berger K. Utilization and perceived effectiveness of complementary and alternative medicine in patients with dystonia. *Mov Disord*. 2004;19:158-161. doi:10.1002/mds.10684.
- Viehmann M, Weise D, Brähler E, Reichel G, Classen J, Baum P. Complementary/alternative medicine and physiotherapy usage in German cervical dystonia patients. *Basal Ganglia*. 2014;4(2):55-59. doi:10.1016/j.baga.2014.03.002.
- Lowe W. Helping Dustin Play. *Massage & Bodywork*. January/February 2015: 94-97.
- Albanese A, Del Sorbo F, Comella C, et al. Dystonia rating scales: critique and recommendations. *Mov Disord*. 2013;28(7):874-883. doi:10.1002/mds.25579.
- Caronni A, Cattalini C, Previtera AM. Balance and mobility assessment for ruling-out the peripheral neuropathy of the lower limbs in older adults. *Gait Posture*. 2016;50:109-115. doi:10.1016/j.gaitpost.2016.08.029.
- Jernigan SD, Pohl PS, Mahnken JD, Kluding PM. Diagnostic accuracy of fall risk assessment tools in people with diabetic peripheral neuropathy. *Phys Ther*. 2013;92(11):1461-1470. doi:10.2522/ptj.20120070.
- Rebour R, Delporte L, Revol P, et al. Dopa-responsive dystonia and gait analysis: A case study of levodopa therapeutic effects. *Brain Dev*. 2015;37(6):643-650. doi:10.1016/j.braindev.2014.09.005.
- Mirlicourtis S, Bensoussan L, Viton JM, Collado H, Witjas T, Delarque A. Orthotic fitting improves gait in a patient with generalized secondary dystonia. *J Rehabil Med*. 2009;41(6):492-494. doi:10.2340/16501977-0363.
- Heldman DA, Giuffrida JP, Chen R, et al. The modified bradykinesia rating scale for Parkinson's disease: Reliability and comparison with kinematic measures. *Mov Disord*. 2011;26(10):1859-1863. doi:10.1002/mds.23740.
- Rattray F, Ludwig L. *Clinical Massage Therapy: Understanding, Assessing and Treating over 70 Conditions*. Elora, ON: Talus Incorporated; 2000.
- Andrade C, Clifford P. *Outcome-based Massage: Putting Evidence into Practice*. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2014.
- Sinclair M. *Modern Hydrotherapy for the Massage Therapist*. Philadelphia, PA: Wolters Kluwer Health, Lippincott Williams & Wilkins; 2008.
- Kisner C, Colby LA. *Therapeutic Exercise: Foundation and Techniques*. 6th ed. Philadelphia, PA: FA Davis Company; 2007.
- Happe S, Peikert A, Siebert R, Evers S. The efficacy of lymphatic drainage and traditional massage in the prophylaxis of migraine: a randomized, controlled parallel group study. *Neural Sci*. 2016;37:1627-1632. doi:10.1007/s10072-016-2645-3.
- Martino D, Macerollo A, Abbruzzese G, et al. Lower limb involvement in adult-onset primary dystonia: Frequency and clinical features. *Eur J Neurol*. 2010;17:242-246. doi:10.1111/j.1468-1331.2009.02781.x.