How do you evaluate the quality of a neck? Physical therapy treatment plan

Shaunna Lattuca, PT, DPT, OCS Senior Physical Therapist Department of Rehab Therapies- Outpatient Boston Medical Center

<u>naunna.Lattuca@bmc.org</u>

617-638-7869

Board Certified Orthopedic Clinical Specialist

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Neck Pain

- Up to 70% of the population will experience neck pain at some point along lifespan (Bovim et al, Brattberg et al, Cote et al, Linton et al, Palmer et al)
- Occurrence increases with age and is most common in women near the 5th decade of life (Bovim et el, Croft et al, Makela et al)
- Bovim et al (1994) indicated that 30% of patients with neck pain will develop chronic symptoms or neck pain lasting >6 months affecting 14% of all people who experience neck pain

Neck Pain

- 42% of workers with injuries to the neck and upper extremity missed more than 1 week of work and 26% of workers experienced recurrence within 1 year (Pransky et al, 2000)
- Patients with neck pain make up about 25% of patients who are receiving outpatient physical therapy (Jette et al, 1994)



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Examination

- History
- Systems Review
 - Abbreviated review of musculoskeletal, neuromuscular, cardio-pulmonary and integumentary systems
 - Assess communication ability, language and learning style
- Tests and Measures
 - Determine causes of impairment or activity limitations
 - Rule in or out hypotheses

Cervical spine: Tests and Measures

- AROM and PROM
- Posture
- Joint mobility
 - Cervical spine
 - Thoracic spine
- Muscle strength
- Ligamentous integrity
- Joint mobility

- Palpation
- Special tests
- Neuro Screen
 - Reflexes
 - Dermatomes
 - Myotomes
 - Sensation
 - Babinski/Hoffmann's

Neck Pain

RED FLAGS

- Myelopathy
- Neoplasms
- Ligamentous instability
- Vertebral artery insufficiency
- Inflammatory or systemic disease

YELLOW FLAGS

- Psychosocial factors
- Depression
- Pain catastrophizing
- Fear Avoidance Belief Questionnaire (FABQ)



Evaluation

- Interpret findings and synthesizes information from examination
- Determine *physical therapy* diagnosis
- Determine prognosis
- Establish goals
 - Impairment level goals
 - Functional goals
 - Work task related goals
- Develop plan of care

Intervention

- Manual Therapy
- Therapeutic exercise
- Functional training or ergonomics
- Neuromuscular re-education and training
- Modalities
- Activity modification
- Patient education

Clinical Practice Guidelines: Neck Pain

"Describe evidence-based physical therapy practice including diagnosis, prognosis, intervention, and assessment of outcome for musculoskeletal disorders commonly managed by orthopedic physical therapists." Childs et al, 2008.

- Orthopedic Section of the APTA
- Guideline not standard of care
- 4 classifications:
 - Neck pain with mobility deficits
 - Neck pain with headaches
 - Neck pain with movement coordination impairments
 - Neck pain with radiating pain

Treatment Based Classification of Neck Pain

Centralization

- + Spurling's test
- + distraction test
- Cervical rotation to side of sx <60°
- + ULTT A (median n.)
- Symptoms into UE that centralize or peripheralize with neck ROM

• Mobility (Thoracic manipulation)

- Sx duration <30 days
- No sx distal to the shoulder
- Looking up does not increase sx
- Cervical extension <30°
- Diminished kyphosis T₃-T₅
- FABQPA <12

• Exercise

- Duration of sx <90 days
- Relatively lower pain and disability scores
- Age >60 years old
- No primary headaches, nerve root signs, recent trauma
- Cervical flexion test <40 seconds

Reduce headache

- Headache pain in neck that travels to fronto-ocular region
- Pain provoked by pressure to subcranial region
- Pain triggered or altered by neck movements/position
- + cervical flexion rotation test
- Reduce pain
 - Very recent onset of sx (trauma)
 - High pain and disability scores
 - NPRS >7
 - NDI >52%
 - Poor tolerance to examination or interventions

Childs et al, 2004.

Work Related Injuries Workshop May 1st & 2nd, 2017 **Cervical Spine Classification Decision Making Algorithm.**



MVA=motor vehicle accident, NDI=Neck Disability Index.

J Fritz & G Brennan. Phys Ther. 2007;87(5):513-524.

Outcomes

• Functional Outcome Measures

- Neck Disability Index
 - To measure the perceived disability in patients with neck pain
 - 10 items: 7 ADLs, 2 pain related, 1 concentration
 - Higher score correlates to higher disability
- Patient Specific Functional Scale
 - Standardized measure to assess a patient's perceived level of disability
 - Patient selects 3 activities and rates each on o-10 scale, scores then averaged
- Goal achievement
 - RETURN TO WORK!
- Discharge planning
 - Ending service for episode of care based upon outcomes and achievement of goals

References

1. Bovim G, Schrader H, Sand T. Neck pain in the general population. Spine. 1994;19:1307-1309.

2. Brattberg G, Thorslund M, Wikman A. The prevalence of pain in a general population. The results of a postal survey in a county of Sweden. *Pain.* 1998;37:215-222.

3. Childs JD, Cleland JA, Elliott JM, Teyhen DS, Wainner RS, Whitman JM, Sopky BJ, Godges JJ, Flynn TW. Neck Pain: Clinical practice guidelines linked to the international classification of functioning, disability, and health from the Orthopedics section of the American Physical Therapy Association. *J Orthop Sports Phys Ther*. 2008;38:A1-A34.

4. Childs JD, Fritz JM, Piva SR, Whitman JM. Proposal of a classification system for patients with neck pain. *J Orthop Sports Phys Ther*. 2004;34:686-696.

5. Cleland JA, Childs JD, Fritz JM, Whitman JM, Eberhart SL. Development of a clinical prediction rule for guiding treatment of a subgroup of patients with neck pain: use of thoracic spine manipulation, exercise, and patient education. *Phys Ther.* 2007;87:9-23.

6. Cleland JA, Fritz JM, Whitman JM, Palmer JA. The reliability and construct validity of the Neck Disability Index and patient specific functional scale in patients with cervical radiculopathy. *Spine*. 2006;31:598-602.

7. Cleland JA, Whitman JM, Fritz JM, Palmer JA. Manual physical therapy, cervical traction, and strengthening exercises in patients with cervical radiculopathy: a case series. *J Orthop Sports Phys Ther.* 2005;35:802-811.

8. Cote P, Cassidy JD, Carroll L. The factors associated with neck pain and its related disability in the Saskatchewan population. *Spine*. 200;25:1109-1117.

9. Cote P, Cassidy JD, Carroll L. The Saskatchewan Health and Back Pain Survey. The prevalence of neck pain and related disability in Saskatchewan adults. *Spine*. 1998;23:1689-1698.

10. Croft PR, Lewis M, Papageorgiou AC, et al. Risk factors for neck pain: a longitudinal study in the general population. *Pain*. 2001;93:317-325.

11. DiFabi RP, Boissonnault W. Physical therapy and health-related outcomes for patients with common orthopaedic diagnoses. *J* Orthop Sports Phys Ther. 1998;27:219-230.

12. Elnaggar IM, Nordin M, Sheikhzadeh A, Parnianpour M, Kahanovitz N. Effects of spinal flexion and extension exercises on low back pain and spinal mobility in chronic mechanical low back pain patients. *Spine*. 1991;16:967-972.

References

13. Fritz J and G Brennan. Preliminary Examination of a Proposed Treatment Based Classification System for patients receiving Physical therapy interventions for neck pain. *Phys Ther.* 2007;87:513-524.

14. Jette DU, Jette Am. Physical therapy and health outcomes in patients with spinal impairments. Phys Ther. 1996;76:930-941.

15. Jull G, Trott P, Potter H, Zito G, Niere K, Shirley D et al. A randomized control trial of exercise and manipulative therapy for cervicogenic headache. *Spine*. 2002;27:1835-1843.

16. Linton SJ, Ryberg M. Do epidemiological results replicate? The prevalence and health-economic consequences of neck and back pain in the general population. *Eur J Pain*. 2000;4:347-354.

17. Makela M, Heliovaara M, Sievers K, Impivaara O, Knekt P, Aromaa A. Prevalence, determinants, and consequences of chronic neck pain in Finland. *Am J Epidemiol.* 1991;134:1356-1367.

18. Palmer KT, Walker-Bone K, Griffin MJ, et al. Prevalence and occupational associations of neck pain in the British population. *Scand J Work Environ Health.* 2001;27:49-56.

19. Pransky G, Benjamin K, Hill-Fatouhi C, et al. Outcomes in work-related upper extremity and low back injuries of a retroscpective study. *Am J Ind Med.* 2000;37:400-409.

20. Stratford PW, Gill C, Westaway MD, Binkley JM. Assessing disability and change on individual patients: a patient-specific measure. *Physiother Can.* 1995;47:258.

21. Vernon H, Mior S. The Neck Disability Index: a study of reliability and validity. J Manipulative Physiol Ther. 1991;14:409-415.

22. Walker MJ, Boyles RE, Young BA, Strunce JB, Garber MB, Whitman JM, Wainner RS. The effectiveness of manual physical therapy and exercise for mechanical neck pain: a randomized clinical trial. *Spine*. 2008;33:2371-2378.

23. Westaway MD, Stratford PW, Binkley JM. The patient-specific functional scale: validation of its use in persons with neck dysfunction. *J Orthop Sports Phys Ther*. 1998;27:331-338.

24. *Guide to Physical Therapist Practice* 3.0. Alexandria, VA: American Physical Therapy Association; 2014. Available at: <u>http://guidetoptpractice.apta.org/</u>. Accessed 3/21/17.