

CASE SCENARIO: CERVICAL SPINE

The patient is a 48-year-old female referred to physical therapy with a chief complaint of right-sided headaches and neck pain. The patient reports that her headaches “have been a part of my life for the past 10 years.” The symptoms are located on the right temporal side of her head with frequent bouts of pain located retro-orbitally. Occasionally she will get pain at the base of her skull. She states that there was no apparent mechanism of injury when the symptoms first started. Her occupation is computer data entry, and she notices that her symptoms do worsen with longer days at work. A 6 out of 10 pain rating for the headache and suboccipital pain is reported on the Numeric Pain Rating Scale. Postural observation reveals the patient’s head in a slightly extended position with lower cervical spine flexion, the acromion processes are approximately 1 inch in front of the midline of the ears. During cervical flexion, the patient is unable to get her chin to her chest, lacking approximately three-quarters of an inch. Her cervical extension is 60°, and rotation is limited bilaterally to 30°. Accessory joint motion assessment reveals stiffness located on the right C0–1 joint segment. Accessory motion assessment of this joint also recreates the retro-orbital pain on the right side of the patient’s head. Palpation of the left suboccipital musculature is negative, palpation of the right suboccipital musculature, especially the obliquus capitis superior and rectus capitis posterior minor, reproduce the right-sided temporal and neck pain. The patient’s goal is to have decreased intensity of her headaches and to not have her neck feel so tired at the end of her workday.

1. The physical therapist has a strong suspicion as to the likely location/cause of the patient’s limited cervical rotation. Which level is most likely the cause of the patient’s limited cervical rotation?
 - a. C0-1.
 - b. C1-2.
 - c. C3-4.
 - d. C5-6.

The physical therapist would like to assess the likely cause of most impaired range of motion limitation in this patient.

2. What is the best assessment technique to determine the limitation?
 - a. the craniocervical flexion test.
 - b. the flexion rotation test.
 - c. levator scapulae length assessment.
 - d. the Sharp-Purser test.
3. The patient has stated her goals to the physical therapist. Based on the patient’s goal of not feeling so tired at the end of her workday, which test is most appropriate to help achieve a measure to assess progress towards the patient’s goal?
 - a. alar test.
 - b. levator scapulae length test.

- c. neck flexor muscle endurance test.
 - d. sternocleidomastoid strength test.
4. This patient has long standing headaches and neck pain. What is the best treatment intervention for this patient?
- a. cervical collar stabilization and isometrics.
 - b. intermittent cervical traction and stretching.
 - c. manipulative therapy with strengthening.
 - d. medical management with rest.

ANSWERS

1. The correct answer is **b. C1-2**. The patient has less than 50% range of motion available for rotation. Since 50% of normal rotation range of motion occurs at C1-2 and it is the first 50%, the physical therapist should conclude that there is a restriction at C1-2. The limitation of 30° is less than 50% of normal, so there is very likely a problem at C1-2. The other distractors may have some contributory factor, but since rotation is 30°, the limitation is not reaching past C1-2. There is essentially no rotation available at C0-1.
2. The correct answer is **b. the flexion rotation test**. This test localizes the ROM to C1-2. Craniocervical flexion evaluates deep neck flexor muscle performance, not mobility. The levator scapula length assessment will not primarily affect upper cervical mobility. The Sharp-Purser test assesses stability of the transverse ligament and is not indicated in this situation.
3. The correct answer is **c. neck flexor muscle endurance test**. Complaints of neck fatigue at the end of the day are often related to movement coordination impairments. The patient's goal of not feeling fatigued leads the physical therapist to consider cervical musculature as a way to address this concern. The best test to use to determine baseline is the neck flexor muscle endurance test. The alar test is for ligamentous instability. The levator scapulae length test may be appropriate to help address the neck pain and maybe the headaches. The sternocleidomastoid strength test is not an appropriate muscle assessment for this patient classification.
4. The correct answer is **c. manipulative therapy with strengthening**. The overall best approach for neck pain with or without headaches is a multimodal approach of manual therapy and strengthening. The cervical collar has demonstrated much less improvement compared to manual therapy and exercise, traction is not indicated for this patient classification, and medical management with rest has a less favorable response compared to manual therapy and strengthening.