Cervical Joint Position Error (JPE) Test

Patient’s name:
Age:
Date of test:
Examiner:
Purpose
The Cervical Joint Position Error (JPE) Test measures the ability of a blindfolded patient to accurately relocate their head position back to a predetermined neutral point after cervical joint movement. It is used to clinically assess an individual’s cervicocephalic proprioception ability, which describes the sense of the position of their head and neck in space. This test helps identify proprioceptive deficits in patients with neck pain, particularly those with trauma-induced or chronic neck pain.
Equipment needed
• Examination chair
• Target (40cm in diameter with concentric circles in 1cm increments)
• Laser pointer or similar targeting device
• Lightweight headband
• Blindfold
Preparation
• Ensure the cervical JPE test is performed with the patient seated to minimize balance impairments or postural compensations affecting the test results.
• Place the target on a wall 90cm away from the patient at the patient’s head height in a seated position.
Procedures
1. Mount a laser pointer or similar targeting device onto a lightweight headband and place it on the patient’s head.
2. Instruct the patient to focus on finding their natural resting head position so that the laser pointer aligns with the center or “bullseye” of the target.
3. Ask the patient to close their eyes.
4. Direct the patient to move their head slowly in one plane of motion (left, right, cervical flexion, or extension) and attempt to return to the starting position as accurately as possible.
5. Have the patient verbally indicate when they feel they have returned to the starting position before opening their eyes.
6. Measure the difference (in cm) between the initial neutral position and the patient's repositioned location.

7. Convert the measurement from centimeters to degrees using the formula below:

Angle = tan-1[error distance / 90 cm]

8. Allow the patient to re-center their starting position prior to each test.

9. Conduct at least three trials for the direction of movement assessed.

10. Calculate the average error for the direction of movement in centimeters and degree to get an overall measure of the patient's JPE.

Assessment

Direction:

Trial	Displacement measurement (cm)	Converted angle (degree)
1		
2		
3		
4		
5		
6		
Average:		

Overall result

- ◯ **Positive:** If the average directional error exceeds 4.5 degrees (more than 7 cm from the bullseye), the patient is considered to have a proprioceptive deficit.
- ◯ **Negative:** If the average directional error is less than 4.5 degrees (less than 7 cm from the bullseye), there is no proprioceptive deficit.

Additional notes

Healthcare provider's information

Name:

License number:

Contact number:

Signature:

Reference

Physiopedia. (n.d.). *Cervical joint position error test*. https://www.physio-pedia.com/Cervical_Joint_Position_Error_Test