

SPECIAL TESTS FOR THE  
CERVICAL SPINE



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Hautant's Test

**STRUCTURE:** Vertebral artery, upper cervical spine.

**POSITION:** The patient is seated upright with the eyes closed. Both arms are held in 90 degrees of shoulder flexion, with the forearms supinated and elbows straight (figure A). The therapist is standing behind patient. The therapist slowly places the patient's neck in a rotated and extended position to one side (figure B).

**APPLICATION:** The patient is asked to perform forearm pronation bilaterally.

**POSITIVE SIGN:** If the arm drops on the side to which the head is turned (figure C).

**REFERENCE:** F. p 169-70.



Figure A



Figure B



Figure C

## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Underberger's Test

**STRUCTURE:** Vertebral artery, vestibular system, cerebellum.

**POSITION:** The patient is standing with eyes closed and arms stretched forward. The therapist is standing close to the patient.

**APPLICATION:** The patient walks in place with high knee lifts. The head is turned from side to side.

**POSITIVE SIGN:** If the patient demonstrates loss of balance.

**REFERENCE:** F. p. 169-70



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Vertebral Artery Test

**STRUCTURE:** Vertebral Artery bilaterally. There is controversy in the literature as to which vertebral artery is being tested, ipsilateral or contralateral. If symptoms occur, no matter which vertebral artery is being compressed, treatment is contraindicated.

**POSITION:** The patient is supine with head and neck off the head end of the treatment table. The therapist is standing at the head end of the treatment table (figure A).

**APPLICATION:** The Therapist, with care, passively sidebends and rotates the patients neck ipsilaterally and extends the neck through the patients available passive range of motion (figure B). The patient is asked to count out loud to 20.

**POSITIVE SIGN:** The patient can exhibit the following symptoms: vertigo, ataxia, visual disturbances, dysarthria, suboccipital headaches, nystagmus, paresis, drop attacks, loss of consciousness, and possible death.

\*A positive test is an absolute contraindication to treatment.

**REFERENCE:** C. p. 53



Figure A



Figure B

## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Valsalva Maneuver

**STRUCTURE:** Possible space occupying lesion. For example: herniated disc, tumor, osteophytes.

**POSITION:** The patient is seated upright. The therapist is standing near or beside the patient.

**APPLICATION:** The patient is asked to take a deep breath and hold the breath while bearing down; as if the patient were attempting to move his bowels.

**POSITIVE SIGN:** Pain in the neck, back, or radiating pain down the upper or lower extremity.

**REFERENCE:** A. p. 54-55  
B. p. 260  
C. p. 53



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Extension - Compression Test

**STRUCTURE:** Primarily the posterior apophyseal joints.

**POSITION:** The patient is sitting with the neck extended about 30 degrees. The therapist is standing behind the patient with both hands on top of the patient's upper forehead, or with one hand supporting the posterior part of the neck.

**APPLICATION:** Gently press head downwards.

**POSITIVE SIGN:** Reproduction of local cervical symptoms with possible radicular symptoms.

\* If reduction in symptoms then possible loss of disc integrity.

**REFERENCE:** A. p. 30-31



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Flexion - Compression Test

**STRUCTURE:** Tests the discal integrity, possible posterolateral disc lesion.

**POSITION:** The patient is seated with head flexed as far as comfortable without reproduction of symptoms or pain. The therapist is standing behind the patient with both hands placed on top of the posterior head, or one hand supporting the posterior part of the neck.

**APPLICATION:** Gently press head downwards.

**POSITIVE SIGN:** Reproduction of symptoms (local or radicular).

**REFERENCE:** A. p. 32-33





## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Forminal Compression Test

**STRUCTURE:** Disc integrity, nerve root compression / irritation, or posterior apophyseal joint.

**POSITION:** The patient is seated with the head in neutral position. The therapist is standing behind the patient with both hands placed on top of the head, or one hand supporting the posterior part of the neck.

**APPLICATION:** Gently apply downward force through the hands to the top of the head.

**POSITIVE SIGN:** Reproduction of symptoms in the cervical spine locally or with radicular symptoms in the upper extremity.

**REFERENCE:** A. p. 34-35



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Jackson's Compression Test

**STRUCTURE:** Intervertebral foramina and nerve root.

**POSITION:** The patient is seated with lateral flexion/rotation of the head to one side, as far as comfort permits, without reproduction of symptoms. The therapist stands behind the patient with both hands placed on top of the head.

**APPLICATION:** Gently apply a downward force through the head.

**POSITIVE SIGN:** Upper extremity radicular symptoms to the side of lateral flexion.

**REFERENCE:** A. p. 36-37  
C. p. 52



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Spurling Test: (Foraminal Compression)

**STRUCTURE:** Facet and cartilage of facet

**POSITION:** The patient is seated upright. The therapist is standing behind the seated patient.

**APPLICATION:** Slowly extend, sidebend, and rotate patient's head to the ipsilateral side. The therapist applies an axial force to the top of the head.

**POSITIVE SIGN:** Pain on ipsilateral side of neck as test is being performed, and/or pain radiating into the upper extremity.

**REFERENCE:** A. p. 52-53  
C. p. 50



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Distraction Test

**STRUCTURE:** Disc or nerve root irritation.

**POSITION:** The patient is seated with the head in neutral position. The therapist is standing behind the patient with both hands placed on the patient's bilateral mastoid processes (cupping the ears).

**APPLICATION:** Gently lift the head with a longitudinal force upwards.

**POSITIVE SIGN:** A reduction in radicular symptoms.

\*The patient may have increase in local neck pain if ligamentous or muscular involvement.

**REFERENCE:** A. p . 28-29



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** ULTT1: Upper Limb Tension Test 1 (Elvey's Test, Brachial Plexus Tension Test)

**STRUCTURE:** Median nerve bias.

**POSITION:** The patient is supine, spine in neutral and close to the edge of the table. The therapist is standing at the side, facing the patient (figure A).

**APPLICATION:** The therapist places a depressive force to the shoulder girdle with the shoulder abducted to 90° (figure B). With maintaining the shoulder girdle position, the forearm is supinated with the wrist and digits extended (figure C). The shoulder is then laterally rotated (figure D). The elbow is now slowly extended in attempts to provoke symptoms and the angle of onset can be measured (figure E). If there are no symptoms with position E, or a conformation of nerve tension is required, the cervical spine can be sidebent contralaterally to further stretch the plexus (figure F). Conversely, sidebending ipsilaterally may relieve upper quarter symptoms. Symptoms must be assessed with each stage of the test.

Alternate methods of Testing: Sequencing of the test can be done in any order to attempt to localize the region of lesion, e.g. the cervical spine can be contralaterally sidebent first to a painfree position. If symptoms can now be reproduced in the brachial plexus region with only arm motions taking up tension in the plexus, than the plexus may be implicated.

**POSITIVE SIGN:** Symptom reproduction in the median nerve distribution.

**REFERENCE:** E. page 147-149.



Figure A



Figure B



Figure C



Figure D



Figure E



Figure F

## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** ULTT2: Upper Limb Tension Test 2 (Median nerve bias).

**STRUCTURE:** Median nerve bias. Pain indicates stretch of the dura mater of the cervical spine and tension of the plexus and median nerve.

**POSITION:** The patient lies supine with the shoulder slightly off the table so the scapula is free. The therapist's thigh rests against the patient's shoulder girdle. The therapist holds the elbow and hand of the patient (figure A).

**APPLICATION:** First, with the thigh, the therapist depresses the shoulder girdle (figure B). While maintaining the depression, the elbow is extended (figure C). The entire arm is then placed in external rotation (figure D). The wrist and digits are then extended (figure E). The last motion added is abduction of the shoulder (figure F).

**POSITIVE SIGN:** Pain in the form of a stretch or ache. Reproduction of symptoms.

**REFERENCE:** C. p. 51, 119-120



Figure A



Figure B



Figure C



Figure D



Figure E



Figure F



## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** ULTT2: Upper Limb Tension Test 2 (Radial nerve bias).

**STRUCTURE:** Brachial plexus stretch, with radial nerve bias.

**POSITION:** The patient lies supine with the shoulder slightly off the table so the scapula is free. The therapist is above the patient with the thigh resting against the patient's shoulder girdle. The therapist holds the elbow and hand of the patient (figure A).

**APPLICATION:** First, with the thigh, the therapist depresses the shoulder girdle. While maintaining the depression, the elbow is extended. The entire arm is then placed in internal rotation (figure B). The forearm is pronated (figure C) with the wrist and digits flexed (figure D).

**POSITIVE SIGN:** Reproduction of symptoms. Pain indicates stretch of the dura mater of the cervical spine and tension of the plexus and median nerve.

**REFERENCE:** E. p. 155-157



Figure A



Figure B



Figure C

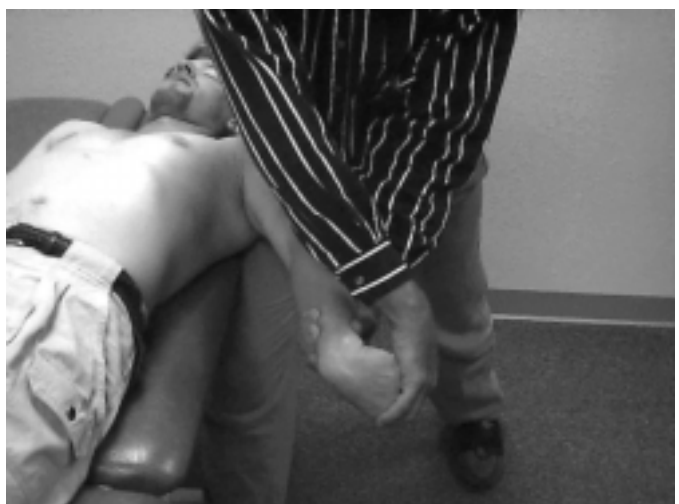


Figure D

## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** ULTT3: Upper Limb Tension Test 3 (Ulnar nerve bias).

**STRUCTURE:** Brachial plexus stretch, with ulnar nerve dominant.

**POSITION:** The patient is supine, spine in neutral and close to the edge of the table. The therapist is standing at the side, facing the patient (figure A).

**APPLICATION:** The wrist is extended and the forearm supinated (figure B). Shoulder depression is maintained by the examiner pushing down into the stable for stability. The elbow is flexed slowly (figure C). In this position the shoulder is then abducted placing the patient's hand near to the ear (figure D). The cervical spine can then be alternately sidebent contralaterally and ipsilaterally.

**POSITIVE SIGN:** Reproduction of symptoms.

**REFERENCE:** E. p. 158-159



Figure A



Figure B



Figure C



Figure D

## SPECIAL TESTS FOR THE CERVICAL SPINE

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**SPECIAL TEST:** Babinski Test

**STRUCTURE:** Reveals an Upper Motor Neuron Lesion.

**POSITION:** The patient is sitting or supine. The therapist is sitting or standing at the patient's foot.

**APPLICATION:** The therapist strokes a blunt instrument from the lateral heel, along the lateral side, and across the ball of the foot.

**POSITIVE SIGN:** Demonstrated by extension of the big toe and abduction of the other toes. This reflex is normal in an infant up to a few weeks old.

**REFERENCE:** B. p. 256  
C. p. 273



