



Principles: NECK, JAW & HEAD

B. CERVICAL CORE

Advanced Myofascial Techniques Series

Til Luchau
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**ADVANCED
TRAININGS**

Quiz Preview:

'B' Sequence

- How do we want to affect kinesthesia in this sequence?
- In the 'Nod Test,' how do we assess the neck's posterior compartment ability to lengthen?
- What active movement would we use when working with a symptomatic "military neck" in the 'Posterior Cervicals: Wedges' technique?
- If left translation is more difficult in the 'Vertebral Translation' technique, which direction would we side-bend, and which side would we press?
- What is the practitioner's intention in the 'Unwinding' technique?

Vista previa del cuestionario:

Secuencia 'B'

- ¿Cómo queremos afectar la kinestésia en ésta secuencia?
- En la “Prueba de asentir con la cabeza”, ¿cómo evaluamos la capacidad del compartimento posterior del cuello para alargarse?
- ¿Qué movimiento activo usaríamos al trabajar con un "cuello militar" sintomático en la técnica "Cuña entre cervicales posteriores"?
- Si la translación hacia la izquierda es más difícil en la técnica de “Translación vertebral”, ¿hacia qué lado flexionaríamos lateralmente y en cuál lado presionaríamos?
- ¿Cuál es la intención del terapeuta en la técnica de "Desenredo"?

b. CERVICAL CORE SEQUENCE

Intentions / Goals:

- 1. flexion and extension 2., at each level of the neck;
- Elicit 3. of pre-spinal muscles;
- 4. any facet joint sensitivity;
- 5. any facet restrictions, in all planes.

Indications:

After thorough 6., indicated for:

- Joint 7.; arthritis; cervical pain;
- Cervical lordosis, torticollis, and 8.;
- (With careful 9. and 10.), the chronic effects of whiplash.

B. SECUENCIA CERVICAL PROFUNDA

Intenciones / Metas:

- 1. _____ la 2. _____ de flexión y extensión en cada nivel del cuello;
- Promover la 3. _____ de músculos pre-espinales;
- 4. _____ cualquier sensibilidad en las facetas articulares;
- 5. _____ cualquier restricción en las facetas articulares en todos los planos.

Indicaciones:

Luego de una 6. _____ minuciosa, este trabajo es indicado para:

- 7. _____ articulares, artritis, dolor cervical,
- Lordosis cervical, tortícolis y problemas 8. _____;
- Efectos crónicos de un latigazo cervical.

(Importante: esto último con una 9. _____ cuidadosa y 10. _____.)

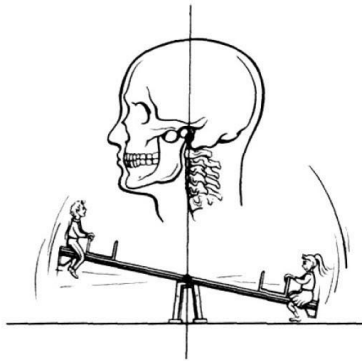
Nod Test

Nick-Test

B-02

Prueba de asentir con la cabeza

P



Instructions / Intentions / Feel or Watch For

Looking at client's profile, asking for small and large nodding.

1. Small nodding: Look for:
 - a. initiation of flexion and extension at A/O; and,
 - b. relative un-involvement of other neck joints (upper image)
2. Large nodding: Look for:
 - a. ability of posterior neck to lengthen; and (lower image, right)
 - b. evenness of flexion and extension throughout cervical column.

Movements / Cues:



Notes:

Nodding at A/O involves pre-vertebral flexor muscles, which are important antagonists to posterior compartment extensors.

Seesaw image courtesy Eric Franklin, originator of the Franklin Method (www.franklin-method.com), from his book *Dynamic Alignment Through Imagery* (Human Kinetics, 2006).

Posterior Cervicals: Wedges

B-03

Posteriore Halswirbel: Keile

Cuña entre cervicales posteriores

D



Instructions / Intentions / Feel or Watch For:

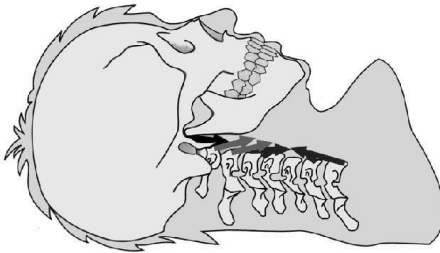
Gently lift into restricted spaces between spinous processes. In each restricted place, wait for release and client's ability to gently flex and extend at that specific joint.

Movements / Cues:

"Use very small movements to let this space open." (Or "close")

"Let the back of your head move upward on the table in order to gently open this space."

"Leave your head heavy on the table."



Notes:

Nodding activates prevertebral muscles.

Variations: client can:

- "look down" to open (flex) each space.
- "look up" to close (extend) each space.

Lower image from Kapandji, Physiology of the Joints, Volume III, © El.sevier Inc. Used by permission.

Anterior Scalenes

B-04

Scalenus anterior

Escalenos anteriores

D



Instructions / Intentions / Feel or Watch For:

Use broad touch with pads of fingers on bellies of anterior scalenes.

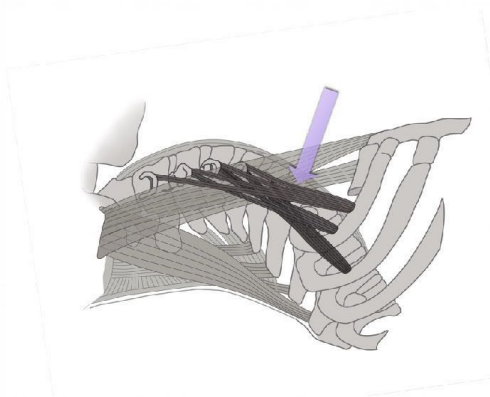
Feel for posterior "dropping back" of cervicals in passive neck flexion and extension.

Movements / Cues:

Passive neck flexion and extension.

"Let your head be heavy,"

"Let the base of your neck fall back, here."



Notes:

Use caution when working around nerve plexi in neck.

Indicated for thoracic outlet syndrome, anterior neck angle ("head forward" position), etc.

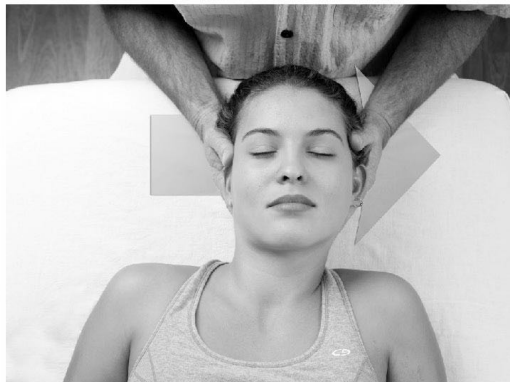
Vertebral Translation

B-05

Translation der Wirbel

Traslación vertebral

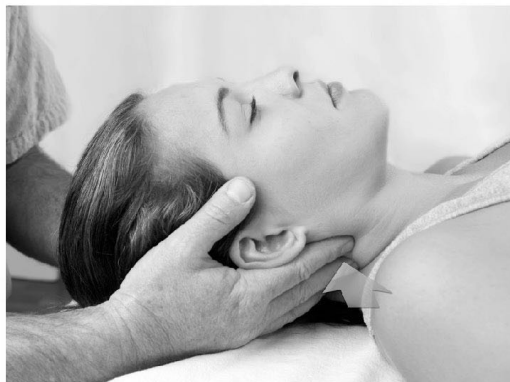
D



Instructions / Intentions / Feel or Watch For:

1. Cradling head, and with fingers on lamina of each side of cervical column, feel for cervical translation (side-to-side movement), vertebrae by vertebrae. Imagine the "Stack of Coins" metaphor to feel for freedom of translation.
2. Gently sidebend neck around stuck spots; wait for release.
3. Re-check translation.

Movements / Cues:



Notes:

When a vertebra translates to the left, it and its neighbors are sidebending to the right.

Thus, if a restriction is felt when translating to the left (i.e., while pushing on the right side of the cervical column), patiently and gently mobilize by sidebending right around the fulcrum of your fingers (as in lower photo), to encourage easier right sidebending and left translation.

Cervical Rotation A: FI/Ext

B-06

Rotation der Halswirbel A: Flexion / Extension

Rotación cervical A: FI/Ext

D



Instructions / Intentions / Feel or Watch For:

With head rotated, **gently** bring:

1. nose to shoulder (flexion),
 2. occiput to shoulder (extension),
- ...while counter-stretching opposite shoulder away from head with other hand.

When extending neck, maintain gentle neck traction to maintain length. Avoid cervical over-extension.

Movements / Cues:

Variation: active range of motion--nodding in coronal plane



Notes:

Contraindicated/use with caution when you suspect:

1. artery hardening;
2. ligament compromise;
3. nerve impingement;
4. fragile medical or musculoskeletal health.

Signs of ligament compromise or neurovascular restriction: paresthesia, pain, nystagmus (rhythmical oscillation of the eyeballs), sweating, nausea, "lump in the throat" sensation (see appendix for tests and details).

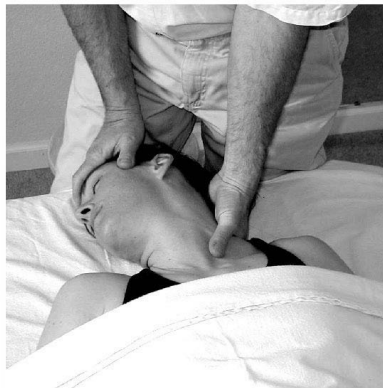
Cervical Rotation B: Sidebending

B-07

Rotation der Halswirbel B: Seitenbeugung

Rotación cervical B: Flexión lateral

D



Instructions / Intentions / Feel or Watch For:

Sidebending neck in sagittal plane.

Rotate head, then:

- a. Lift neck (extend & sidebend cervicals); counter-stretch w/ head.
- b. Lift head (flex & sidebend cervicals); counter-stretch w/ neck

Movements / Cues:



Notes:

Contraindicated/use with caution when you suspect:

1. artery hardening; 2. ligament compromise, 3. nerve impingement; 4. fragile medical or musculoskeletal health.

Signs of ligament compromise or neurovascular restriction: paresthesia, pain, nystagmus (rhythmical oscillation of the eyeballs), sweating, nausea, "lump in the throat" sensation (see appendix for tests and details).

Nuchal "Window"

B-08

Nuchales "Fenster"

Ventana nuchal

I



Instructions / Intentions / Feel or Watch For:

With fingers along midline of neck, spread erectors laterally away from nuchal ligament.

Movements / Cues:



Notes:

Unwinding

Unwinding

Desenredo

B-09

I



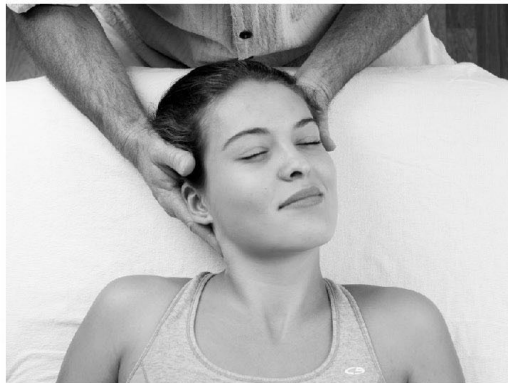
Instructions / Intentions / Feel or Watch For:

Follow subtle movements of head and neck; take at least 3-5 minutes to deepen.

When to stop: still points, signs of ANS shift, etc.

Movements / Cues:

Encourage client to allow and follow any movements.



Notes:

Upper Cervical Ligament and Vertebral Artery Testing

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Knowing how and when to perform testing of the upper cervical ligaments and the vertebral artery is essential for the safety of the client. Damaged, disrupted, overstretched ligaments can lead to pathological pressure on the spinal cord. Certain treatment positions used by the manual therapist can result in injury to the spinal cord in the patient with upper cervical instability.

Positive tests of the ligaments will produce cord signs, which are observable changes related to nervous system physiology.

Cord Signs

- Bilateral, quadrilateral, or facial paresthesia
- Nystagmus; rhythmic oscillation of the eyeballs
- Sweating
- Nausea
- Vomiting
- Lump in the throat

Tectorial Membrane

- Continuous with the posterior longitudinal ligament
- Spans from the atlas to the occiput
- Limits flexion of the occiput on the atlas.

Test

1. Patient sits while therapist stands behind patient.
2. Therapist grips patient's head on either side with palms on the temporal/parietal area. Therapist's forearms are on patient's shoulders to hold them in place.
3. Therapist applies traction to patient's head and neck then nods head forward at the OA joint.

Transverse Ligament of the Atlas

Attached to the tubercles of the atlas on the posterior aspect of the anterior arch. This ligament holds the dens of the axis against the anterior arch of the atlas and prevents it from making contact with the spinal cord.

Test

1. Patient is supine.
2. Therapist sits at patient's head and contacts both tips of the transverse processes of C1 on the posterior aspect.
3. Therapist moves the transverse processes anteriorly (toward the ceiling).

Alar ligament

Attaches to the posterior lateral aspect of the dens and to the occiput. This ligament moves dens in the same direction of cervical spine sidebending.

Test

1. Patient is supine.
2. Therapist sits at patient's head. One hand palpates the spinous process of C2 and the other hand holds the top of the patient's head.
3. The therapist adds slight compression and then side bending at the OA joint.
4. The C2 spinous process should move away from the side of side bending within the first 15 degrees of side bending. Toward the therapist's hand palpating the C2 spinous process.

Atlanto-axial ligament

Attached to the dens lateral to the alar ligament. Restricts rotation at the AA joint.

Test

1. Patient is supine.
2. Therapist hand position is the same as for the alar ligament test.
3. Instead of side bending the therapist rotates the head and again the C2 spinous process should move away from the direction of rotation.

Vertebral artery

The vertebral artery passes through the transverse foramina of the cervical vertebrae. Rotation of the cervical spine can occlude this artery. Testing of the vertebral artery is controversial and there are various test procedures. Some authorities recommend testing before and after every cervical technique. Most recommend testing before the intervention is sufficient.

Test

1. Patient is sitting.
- The therapist guides the patient's head and neck into the following motion:
 2. Extension for 10 seconds and then released for 10 seconds.
 3. Rotation to the right for 10 seconds and then released for 10 seconds.
 4. Rotation to the left for 10 seconds and then released for 10 seconds.
 5. Combined right rotation and extension for 10 seconds and the released for 10 seconds.
 6. Combined left rotation and extension for 10 seconds and the released for 10 seconds.

Positive vertebral artery test will produce the the "5 D signs":

1. Diplopia, double vision
2. Dizziness
3. Drop attacks, falling as in fainting without the loss of consciousness
4. Dysarthria, difficulty with speaking
5. Dysphagia, difficulty swallowing
6. Nystagmus, rhythmical oscillation of the eyeballs
7. Nausea, vomiting.

B. SEQUENCE PAGE ANSWERS

B. CERVICAL CORE SEQUENCE

Goals

- 1. Refine flexion and extension 2. kinesthesia, at each level of the neck;
- Elicit 3. participation of pre-spinal muscles;
- 4. Normalize any facet joint sensitivity;
- 5. Mobilize any facet joint restrictions, in all planes.

Indications

After thorough 6. preparation, indicated for:

- Joint 7. restrictions; arthritis; cervical pain;
- Cervical lordosis, torticollis, and 8. postural issues;
- (With careful 9. dosing and 10. titration), the chronic effects of whiplash.

B. CONTESTACIONES

B. SECUENCIA CERVICAL PROFUNDA

Intenciones / Metas:

- 1. Refinar la 2. kinestésia de flexión y extensión en cada nivel del cuello;
- Promover la 3. participación de músculos pre-espinales;
- 4. Normalizar cualquier sensibilidad en las facetas articulares;
- 5. Movilizar cualquier restricción en las facetas articulares en todos los planos.

Indicaciones:

Luego de una 6. preparación minuciosa, este trabajo es indicado para:

- 7. Restricciones articulares, artritis, dolor cervical;
- Lordosis cervical, tortícolis y problemas 8. posturales;
- Efectos crónicos de un latigazo cervical.

(Importante: esta última con una 9. dosificación cuidadosa y 10. poco a poco.)