Dynamic Chiropractic

LET'S GET CERVICAL

Unlocking the Secrets of the Cervical Spine (Pt. 4)

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From an evolutionary standpoint over several hundred thousand years of "erectus existence," human beings increased the size of our craniums along with an increase of transverse plane movement of the cervical spine.[1] However, in many ways, modern existence has caused a "de-evolution" of movement and function, as witnessed by screen time on computers coupled with sitting for long periods of time, dysfunctional breathing patterns, and a myriad of modern-day causes creating poor alignment, posture and overall health.

Three common ways chiropractors determine alignment of a spine is through palpation, orthopedic range-of-motion testing and X-ray. These are all vital assessment skills and needed for proper identification of function and diagnosis. One important question to ask is if a joint is fixated with stiffness and reduced range of motion of a cervical spine, what is driving it? It is logical to assume that if a joint is fixated, then simply adjust it to "free up" that segment.

But what if the fixation of a joint segment can be looked at as an articulation that is being driven by patterns that put it into a predictable and identifiable position? Would it also be logical to identify the pattern and then inhibit the muscles in the pattern that drive the axial spine into an end-range locked position – which might even look normal on X-ray or standard orthopedic testing? This is a paradigm shift and outside our normal way of looking at a spine simply from a chiropractic/orthopedic perspective.

As mentioned back in part 1 of this series, we have two necks (right and left side). The right temporal mandibular cervical chain of muscle, or right TMCC, is most often the dominate chain driving the neck and head into a position called right O/A flexion.[2] The cervical spine is also positioned by the orientation of T-1, as C-7 sits on top of it, directing the rest of the cervical spine to the occiput.

The T-1 vertebra can be in a position of overextension if a person has a flat mid-back, or reduced kyphosis, or overflexion as seen with a person who has an increased rounding kyphosis in the upper thorax.[5]

Either scenario will cause straightening or reversal of a cervical curve with predictable forward head posture (FHP).[5] The position of T-1 is driven by ribcage arthrokinematics and breathing patterns. A mid-range position of T-1 is needed to have a cervical spine with both sides of the neck musculature balanced equally.

The Cervical Axial Rotation Test

Testing becomes critical to determine if an entire cervical spine has a criteria defined as being "neutral."[3] In this case, neutral in the cervical spine is defined by having 30 degrees of normal lordosis position (as would be seen by a lateral X-ray); 30 degrees of lateral flexion movement mid-cervical spine bilaterally; and 30 degrees of rotation in each direction when the neck is splinted by two hands moving the entire cervical spine from C-7 up to the occipital bone.[4] This is different than a standard orthopedic ROM exam of the neck and part of a PRI protocol.

The test that is being described is called the cervical axial rotation[5] test and will determine if T-1 is in a position that is not limited by overflexion causing facet blockage at C-7; or overextension causing anterior neck muscular hypertonicity, resulting in an inability of the cervical spine to extend into a neutral lordosis and rotate freely.

As just mentioned, the ability to rotate a neck correlates with a normal cervical lordosis. In performing the cervical extension test, place the middle fingers of both hands on either side of the mid-cervical spine and then gently lift the neck. Does the neck move forward with a springy feel? Does the chin move forward and tip back? In other words, can you passively move a mid-neck forward without the head posteriorly rotating?[5]

If the neck is rigid, you can guess that a straight neck or reversed curve is present. If this test is positive, meaning limitation of movement, then the ability to laterally flex the neck will also be diminished.

The Cervical Lateral Flexion Test

Enter the cervical lateral flexion test,[5] which is also essential in determining a pattern-driven position. In the right TMCC pattern, cervical lateral flexion will be limited in right lateral flexion due to the orientation of the facets in the cervical spine. As mentioned in previous articles, patients most often present standing on their right leg with a lower right shoulder. The normal compensation is for a neck to laterally flex to the left when standing on the right leg.

To perform the cervical lateral flexion test, simply hold the occiput/head with one hand while the other hand gently knife edges at C-4 to see which side has more movement (or perhaps no movement at all).

Clinical Takeaway

Objective testing providing a non-manual treatment or repositioning that creates a positive change determined by retesting can be considered an evidence-based approach. The goal is to have a cervical spine that is "neutral" or 30-30-30 in normal lordotic position with a springy feel, left and right axial rotation and lateral flexion.

Learning how to test for patterns that are driving position of the cervical spine, and teaching our patients how to find and feel a new position in their own body, are essential for a cooperative effort with our decision to adjust and a more powerful avenue to patient care.

References

1. Cervical Revolution Course Manual: *An Integrated Approach to the Treatment of Patterned Cervical Pathomechanics*. Postural Restoration Institute, pg. 2.
2. *Op Cit.,* p.p. 26-27.
3. *Op Cit.*, pg. xiii.
4. *Op Cit*, p.p. 15-19.
5. *Op Cit*, pg. 2.

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