

More assessment clarifiers

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Narrative: Overlooked connections among various neurological functions can potentially yield valuable clinical assessment tools. In this paper, several such connections are explored, including relationships between vibration sense and balance, visual midline and temporomandibular joint function, and *temporosphenoidal* line indicators and *temporalis* muscle contraction.

Here I present several additional 'clinical tricks' that better isolate the segments and tissues I am assessing.

Indexing terms: Chiropractic; self reflection; clinical assessment; diagnosis; subluxation; leaky vibe test; TMJ.

Introduction

In my last *Wide-Angle Lens* column, I discussed a number of techniques that could be useful additions to a practitioner's assessment tool-belt. (1) In this column I expand on the theme of assessment clarification.

Where vibration sense meets balance

Superficial vibration is detected by *Meissner's corpuscles*, which mostly reside in the border area between dermis and epidermis. The sense of deep vibration is served primarily by sensors in the deep dermis, hypodermis, and other tissues. These are the multilayered onion-like *Pacinian corpuscles*. It is important to note that the *Pacinian corpuscles* are also detectors of deep pressure. Therefore, altered vibration sense suggests alteration in pressure sense as well. This can have implications for balance, especially if the L4 and/or L5 and/or S1 dermatomes are involved.

Example: An 80-year-old Navy veteran presented for low back pain of three weeks' duration. The pain was exacerbated three days prior to presentation after he played golf. He rated his pain as '6' on a 10-point scale where '10' is unbearable pain.

Testing this patient with a vibrating 128Hz tuning fork revealed reduced sensitivity at the L4 and S1 dermatomes on the right foot. The patient was asked to stand on one leg with hands on hips. His single leg balance was less than 3 seconds on each leg. Palpation augmented by therapy localisation and challenge according to *Applied Kinesiology* protocols revealed multiple vertebral and extra-vertebral problems.

Diversified adjustments were delivered to the right sacroiliac joint, T11, and L3. Neurolymphatic stimulation was administered to the right piriformis, right *gluteus maximus*, and left *psaos* muscles. Following digital release of the external *pterygoid* muscle, the



... some simple tests can point to sources of interference to the body's neurofunctioning status. Some of our tests are very simple, but deeply revealing on what we should do next ...



temporomandibular joint was put through active range of motion while gentle traction on the external ears was applied in the four cardinal directions.

Following the adjustments, the patient was instructed to practice single leg balance for at least 30 seconds on each leg while holding onto a wall or stable article of furniture with both hands. When this became easy, he was to hold on with only one hand. When this also became easy, he was to touch the wall or furniture with only one finger. The eventual goal was to be able to stand on either the left or right leg for 30 seconds with hands on hips. It was explained to the patient that a finger on the wall would of course not hold up his body weight; it was intended simply to provide the nervous system with additional information about the location of his body in space.

Four days after this visit, the patient presented for a progress check. He now rated his pain at '3'. On vibration testing, the patient reported his sensation to be almost equal at the left and right L4 and S1 dermatomes, with only a slight residual deficit on the right. He claimed to be complying with the ' *fingertip feedback*' described above, practicing every day. His single leg balance time was now 30 seconds bilaterally.

It is of course possible that exercise to rehabilitate balance explains some of this recovery. However, such a robust improvement from only four days of practice is unlikely. It seems more probable that improved lower extremity sensation post-adjustment was a more important contributory factor in this patient's improved balance.

Additional reports in which improved lower extremity dermatome function coincide with improved balance and/or gait would be interesting and helpful. Also, please consider a possible relationship between upper extremity dermatome function and manual dexterity.

Pacinian corpuscle



Leaky Vibe Test and the Temporomandibular Joint

I have previously described placing a vibrating tuning fork at the external occipital protuberance, the posterior fontanelle, the anterior fontanelle, and the glabella, while asking the patient whether the vibration seems centred at the tuning fork. (1, 2) This is the expected result. On the other hand, if the patient notes that the vibration seems to 'leak' to one side or the other, that disturbance in vibration sense is a useful outcome measure. I recently found this '*leaky vibe test*' to be useful in identifying a temporomandibular joint dysfunction.

Example: A 65-year-old writer was under care for back pain. She also complained of episodic dizziness when standing up from a kneeling or squatting position (as in gardening). Fifteen months prior to presentation, she suffered a severe bicycle accident, resulting in fractures in the proximal humerus, the left third rib, and compression fractures of T4 and T9.

On tuning fork testing at the external occipital protuberance, the patient reported 'leaking' of the vibration sense to the right. When she clenched her jaw, the vibration sense still lateralised to the right. With her jaw opened, the vibration sense centred. From this, I surmised the presence of a TMJ dysfunction, which had the potential to aggravate her back pain and dizziness.

In addition to vertebral adjustments and reflex muscle work, the right TMJ was adjusted. With the patient in the supine position, I asked her to turn her head to a comfortable degree. I positioned my thumb in the TMJ and asked the patient to press her face against my thumb to a comfortable degree. With the patient holding this pressure, I asked her to slowly open and close her mouth several times.

Post-adjustment, the leaky vibrate test was negative, with vibration sense centred at the tuning fork. The patient continues under care, with gradual symptomatic relief noted.

Additional reports on the response of the leaky vibrate test to TMJ correction would be most welcome.

Visual Midline in Chiropractic Assessment

Optometric researchers Padula and Argyris have described the visual midline shift syndrome, which they have found to attend concussion and other forms of brain trauma. (3) This is a disturbance of the patient's concept of the body's midline and is an aspect of a more general disturbance in the relationship between vision and the circuitry of kinaesthesia, proprioception, and vestibular function.

Testing for visual midline shift is done in two phases. First, a small straight object (wand, pencil, etc.) is held vertically a few inches/cm before the patient's face and a few inches/cm to the left or right. The object is then passed before the patient, asking the patient to state when the object is aligned with the centre of their face. (Note: I usually give the object to the patient and instruct them to pass it in front of their face until they believe it is centred. This way, I do not inadvertently give them any visual cues. Once they have stopped moving the object at a point they believe to be aligned with the centre of their face, I step in front of the patient to assess the accuracy of their positioning.) The possible outcomes are normal, visual midline shifted to the left, or visual midline shifted to the right.

In the second phase, the object is held slightly above the patient's head a few inches in front of their face. The object is gradually moved downward until the patient believes the object is aligned with their eyes. The possible outcomes are normal, visual midline shifted superiorly, or visual midline shifted inferiorly.

I have found this test useful in chiropractic assessment.

Example: An 80-year-old retired computer programmer was previously discussed as an example of 'inspiration palpation'. (1) In a more recent encounter, she complained of right ear and throat discomfort plus fatigue. Her visual midline was distorted in an inferior direction. When re-tested with her neck in right rotation, the distortion was exacerbated. When I re-tested with her neck in left rotation, her visual middle was undistorted. From this I surmised the presence of an upper cervical subluxation. Palpation augmented by challenge revealed a C2-3 subluxation.

In addition to thoracic adjustments and reflex muscle work, a minimal force (respiratory assist) adjustment was performed at C3. Post-adjustment, her visual midline was normal.

At progress examination 23 days later, visual midline remained normal, and the patient reported that her throat and ear were 'a lot better'. Her fatigue was present, but at a reduced level.

Example: A 57-year-old design consultant presented with a complaint of pain in the neck, right arm, and both heels. She also had a long-standing history of migraines, and had experienced migraine 'on and off' during the previous week. Her migraines were generally accompanied by visual disturbance.

Her visual midline was distorted in an inferior direction. When asked to open her mouth wide, visual midline was retested, and no distortion was found. This suggested a TMJ problem. Based on challenge according to *Applied Kinesiology* protocols, manual release of the left external *pterygoid* was performed, followed by *Cottam TMJ* release (patient opens and closes their mouth while the clinician exerts mild traction on the ear in the 4 cardinal directions). Cervical, thoracic and lumbar subluxations were adjusted, and left patella and right calcaneus were adjusted as well.

Right *psaos* and left *quadratus femoris* muscles were addressed with neurolymphatic stimulation. Suboccipital release (patient supine; practitioners fingertips gently curl under the shelf of the occiput to relax the suboccipital muscles) and stimulation of the *yin tang* acupuncture point (located just above the bridge of the nose) were performed.

Following the adjustment, the patient's visual midline was retested. No distortion was found.

Further cases utilising visual midline shift as a chiropractic outcome measure would be most welcome.

The Temporosphenoïdal Line Clench

Palpation of the temporosphenoïdal (TS) line was developed as an assessment tool within *Sacro Occipital Technique* (SOT) and *Applied Kinesiology* (AK) during the 1960s. It is still very much in use today by AK and SOT practitioners alike. (4, 5)

Contraction or relaxation of the *temporalis* muscle may assist the examiner in locating active TS line points.

Example: A 58-year-old administrator for a non-profit organisation was previously discussed as an example of 'dynamic LOREX'. (1) He is under care for a variety of episodic musculoskeletal pain problems. At his monthly visit in January 2024, manual muscle testing of the *psaos major* muscles was negative. I palpated the TS line and found nothing. I asked the patient to clench his teeth (consistent with patient comfort) and re-palpated. This time, I found a palpable nodule on the right at the location associated with the *psaos major* muscle according to *Applied Kinesiology* protocols. I re-tested the *psaos*, again finding it intact. I then tested the muscle against multiple pressures. At the third repetition, the muscle became inhibited. The left *psaos* remained intact in the face of multiple test pressures. I treated the *neurolymphatic* point for the right *psaos*. The muscle was now intact in the face of multiple muscle tests.

It could be that *temporalis* muscle contraction reveals active TS line points in some instances and obscures them in others. It may be prudent to take a moment to palpate the line with and without the teeth clenched.

Opportunities for innovation

Chiropractic clinicians correct sources of interference with nervous system function. There is undoubtedly a myriad of overlooked connections among such functions. Many of these connections potentially offer useful clinical assessment tools. This suggests vast opportunities for innovation in clinical assessment in our profession's future.

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Request to readers

Throughout this paper Dr Masarsky requests input from readers regarding similar cases you may have treated. Please drop him an email and contribute to this very important dialogue. Use viennachiropractic@verizon.net

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About the author

Dr Charles Masarsky has been in the private practice of chiropractic with Dr. Marion Todres-Masarsky since 1983. Their office is located in Vienna, Virginia, USA in the suburbs of Washington, DC. He also offers continuing education programs for chiropractic colleges and associations. For information about his practice or his CE programs, please e-mail viennachiropractic@verizon.net.

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Dr Masarsky writes a frequent feature in the *Journal* called 'The Wide Angle Lens' in which he takes a broader than usual perspective on one issue or another, and has contributed much on clinical aspects of COVID.

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