Case Study

Resolution of Dysmenorrhea in a 37-Year-Old Female Following Chiropractic Care to Reduce Vertebral Subluxations: A Case Study

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Abstract

Objective: To describe the effects of subluxation-based chiropractic care on a 37-year-old female suffering from primary dysmenorrhea.

Clinical Features: A 37-year-old female presented to a private chiropractic office suffering from dysmenorrhea, shoulder pain and low back pain.

Interventions and Outcomes: A case history and chiropractic physical examination were completed on the patient. Torque Release Technique® (TRT) was used to examine the patient for vertebral subluxation. The patient underwent four months of care and two reassessments. Thermography and surface electromyography (SEMG) were used to objectively assess the patient over the period of care. Following chiropractic, she no longer experienced debilitating menstrual cramps, no longer had to take days off work due to the pain and cramps. She previously had a five-day menstrual cycle, but since care it decreased to three days. Her sleep also improved.

Conclusion: The findings from this case study suggest that subluxation-based chiropractic care may benefit females that suffer from dysmenorrhea. The decrease in inhibition to the nervous system via the removal of interference allows the central nervous system to function at optimal potential. More research is needed to assess chiropractic care and its effects on female reproductive health.

Key Words: *chiropractic, dysmenorrhea, Torque Release Technique®, vertebral subluxation, menstruation, thermography*

Introduction

Dysmenorrhea can be defined as painful menstrual cramps of uterine origin that last 48-72 hours.[1,2] As of 2013, the range of women who experienced dysmenorrhea was from 16%-92% making this a very prominent condition in woman of reproductive age.[1,3] Many factors such as social standards, cultural practices, stress levels, family history, smoking, insecticides, and food play a role in persons with dysmenorrhea.[3,4] Fruits and vegetable intake was shown to decrease risk of dysmenorrhea.[3]

Dysmenorrhea is divided into two types, primary and secondary. Primary dysmenorrhea is diagnosed when no obvious organic cause can be found. Secondary dysmenorrhea is caused by underlying pelvic disorders.[3,5]

The female reproductive cycle typically occurs within 24-35 days, with an average around 28 days. The female reproductive cycle has two main phases, the proliferative phase, before ovulation, and secretory phase, when ovulation begins. The cycle begins with the release of Gonadotropin-releasing hormone (GnRH) from the hypothalamus. This will stimulate luteinizing hormone (LH) and follicle-stimulating hormone (FSH) in the anterior pituitary gland.[4,6] This is the direct relationship between the reproductive cycle and the central nervous system.[4] LH and FSH regulate the ovaries, which produce estrogen and progesterone. LH surges causing the release of an ovum, thus beginning the secretory phase.

Estrogen and progesterone are the primary hormones that build up and maintain the uterine lining. At the end of the secretory phase, progesterone and estrogen sharply decline. When the ovum is not fertilized this begins the first day of menstruation, which is the first day of the next menstrual cycle.[4,6]

In the United States nearly 50% of women use alternative methods for common medical conditions such as infertility, premenstrual syndromes, and menopause.[7] Chiropractic treatment is one of the many methods of helping manage the condition. Looking at the autonomic nervous system we can see where it plays a role in menstruation. The nervous system plays a direct role in the contractions of the uterine muscles, while the sympathetic fibers innervate the ovary indirectly via the blood vessels and its smooth muscles.[4,5] All other factors of the menstrual cycle are regulated by the endocrine system.[4,5,8]

Based on the premise, by treating subluxations, chiropractic can diminish interference and improve the nervous system function allowing the body and endocrine system to function properly.[8] This paper will focus on a 37-year-old patient who reports to a chiropractor suffering from dysmenorrhea, shoulder and low back pain.

Case Report

History

A 37-year-old female presented to a chiropractic office suffering from dysmenorrhea, shoulder pain and low back pain. The patient had no past history of surgeries, auto accidents or previous medical care for the above listed problems. The patient denied taking any medication. She had a previous history of fracture with left ankle and right ankle sprains. She rated the pain as mild (1/10) for mid-shoulder and low back pain.

Examination

The chiropractic examination was performed promptly after taking the history. Static and motion palpation were performed, in which fixations and edema were found at C1, T8, L1, and Sacrum. Using the Chiropractic Leadership Alliance Insight™ Subluxation Station, thermal scans and surface electromyography (SEMG) scans were performed. These scans were used as objective material to help assess the dynamics of the autonomic nervous system (ANS). Scans were performed once at the beginning of care, at the reassessments, and lastly at the re-evaluation to evaluate progress.

Para-spinal thermal scans, also known as thermography, were performed as an analysis of the ANS. One of the few tasks of the ANS is to regulate body heat by vasoconstriction and vasodilation. When the body is functioning properly, skin temperature should be uniform throughout the body.[9] Thermography has been studied and has been shown to have excellent inter- and intra-examiner reproducibility and reliability.[9,10]

According to Owens et al, changes in para-spinal temperatures have a physiological phenomenon as opposed to mechanical error.[10] Differences in the temperature readings, para-spinally, can have association with abnormal function of the ANS.[11] This has been known since the early days of chiropractic when instrumentation was used to assess for neurological component of a subluxation.[12]

The initial thermal scan provided temperature differences of one to two standard deviations above normal, which was at C5-T3, T6-T10, T12-L1. There were also temperature differences up to three standard deviations at segments: C1 and T8. (Figure 1) The rest were within normal limits.

SEMG was performed prior to the thermal scan to evaluate the function of the para-spinal muscles. This scan is often used to help determine asymmetrical muscle contractions, abnormal muscle recruitment and assess muscle tone.[13] SEMG is a reliable tool for assessment of para-spinal muscle activity and has very good test-retest reliability.[14,15] According to Kent, SEMG "provides objective quantitative data regarding abnormal paraspinal muscle recruitment patterns that are associated with vertebral subluxation".[14]

The initial SEMG scan revealed abnormal patterns from left to right. There were four segments that were below the standard deviation. Bilaterally T6, left side T8 and T10, and again bilaterally T12. All other segments were within normal limits. (Figure 3).

Technique Utilized

Torque Release Technique, also known as TRT, was discovered while trying to create a protocol for research that incorporated certain aspects from nine different chiropractic techniques. The major concepts were from Palmer Upper Cervical, Directional Non-Force Technique (DNFT), Sacro-Occipital Technique (SOT), Toftness, Thompson, Logan, Gonstead, Pierce, and Network Spinal Analysis. They were all condensed together into a tonal approach.[16]

Holder chose a tonal technique because he believed in Stephenson's thirty-three chiropractic principles that the spinal-neural system is a global unit that is expressed by tone.[17,18] This created a more specific neurological, non-mechanistic, non-linear and non-sequential approach to adjusting a patient.[16,17]

To help qualify the presence of a subluxation Holder put together a list of 15 indicators of disease and spinal subluxation.[19] These indicators were found to have specific segments that correlated with disease and subluxation. These segments were primarily: sphenoid, occiput, C1 (indirect attachment), C2, C5, sacrum and coccyx, all of which are attachment points for the dura matter, which is what encases the spinal cord.[20,21]

The term that describes the spinal-dural-neural relationship was coined by Holder, who called it the Cranio-Spinal Meningeal Functional Unit (C-SMFU).[22] The tone of the nervous system can be influenced dramatically by a misalignment of any of the above listed segments.[19] These were classified as, but not limited to, the primary subluxation. Holder attempted to efficiently locate and eliminate the

primary subluxation which would subsequently eliminate nine other secondary subluxations (compensations), therefore establishing normal tone back to the nervous system.[17,19]

Analysis of the patient used a priority system for efficiency when lying prone on the specific TRT table. The eight non-linear testing priorities can be examined in Figure 5.

When going through the priority system, because it is non-linear, priority two is assessed first to help eliminate the most potential primary subluxation the quickest. The next step would be to assess priority one followed by priority three, and then all other priorities in chronological order thereafter. This was found to be the most efficient way of analyzing a patient and correcting of the primary subluxation.[16,17,19]

Torque Release Technique® protocol was used to assess the location of primary subluxations. Starting with the patient laying prone on the table, the doctor aligns the occiput and coccyx to the middle of the table. Then the doctor pumps the patient's legs, which involves flexing the patient at the knees two to three times up to 45-90 degree bend. The doctor then proceeds to sharply dorsiflex the patient's feet to elicit the functional leg length reflex (FLLR).[19]

Going through the non-linear testing priorities, a gentle pressure test is applied to the segment in the direction of correction. Torque can also be provided during the pressure test. Then the FLLR is performed again so assess for perfectly balanced feet which would tell the chiropractor if it is necessary to adjust. No patient is to receive more than three adjustments at one time. [16,17,19] According to Dr. Holder, the FLLR and the pressure test and other standard procedures utilized by TRT are used in order to detect the primary subluxation and its lines of drive (LOD).[20]

Holder needed to create a way to apply a measurable adjustment with both inter- and intra-examiner reproducibility and reliability. The instrument that was birthed from this conundrum was The Integrator™. The Integrator™ is an FDA-approved chiropractic adjusting instrument that would provide the adjustment. The Integrator™, with its preloaded, pressure sensitive head delivers an adjustment at 1/10,000 of a second with a recoil of exactly 1/4cm. This is to emulate the toggle recoil and express a 64 Hz adjustment matching the frequency of the primary subluxation.[16-19]

Chiropractic Care Plan

After a full assessment of the patient's history and physical examination the doctor recommended a care plan. This included three different phases of care and three progressive reassessments to evaluate and modify the plan if necessary.

The first phase of care consisted of three visits per week for two weeks. The second phase of care consisted of two visits per week for fourteen weeks and the last phase of care included once per week for 38 weeks. Thermography and SEMG were performed at each progressive reassessment. The patient was adjusted by utilization of the Integrator™ which is the primary instrument of Torque Release Technique (TRT).

Outcomes

The patient was adjusted using the Torque Release Technique® and the Integrator™. The patient was seen three times a week for three weeks, two times a week for 14.5 weeks. She was reassessed accordingly as per the treatment plan. The care plan was still active at the time of writing this paper.

At the first reassessment, she reported better sleep, a reduction in low back pain, and her shoulder pain improved. At the second reassessment, she expressed improvement in both of her primary complaints. She also shared that she was no longer experiencing debilitating menstrual cramps. She stated she no longer had to take days off work due to the cramps. She stated she previously had a five-day cycle, but since care it decreased to three days.

Looking at the initial thermography compared to the first reassessment scan, patient improvement is seen. The initial patient scan provided temperature differences of one to two standard deviations above normal. These were at segments: C5-T3, T6-T10, T12-L1. There were also temperature differences of up to three standard deviations at segments C1 and T8. At the first reassessment there were four segments with only one standard deviation above normal: T1, T11, L1, and L4.

Four segments were two standard deviations above normal at: C1, T4 T10, and L3. This showed improvement with the elimination of all segments being three standard deviations above normal and minimizing ones that were one to two standard deviations above normal. The second reassessment showed significant changes to the thermal scan. C4-T2 and T6 all increased to three standard deviations above normal. **(**Figure 2**)**

Changes were seen in the surface electromyography scans at the first reassessment. There were four segments that were below the standard deviation, bilaterally T6, left side T8 and T10, and again bilaterally T12. At the first reassessment there were two segments that were two standard deviations above normal on the right at C1 and left at C7. C7 on the right increased to three standard deviations above normal, showing more excitement in that region of the body.

T10 on the right and L1 bilaterally became more inhibited and were below normal standard deviation. The second reassessment for SEMG showed even more dramatic changes to her nervous system. Twelve segments increased largely to be three standard deviations above normal or higher. Yet, segment T12 rose from being below normal standard deviation to within normal limits. (Figure 4)

Discussion

The purpose of this case study was to examine the clinical outcomes of Torque Release Technique® subluxation-based chiropractic care on dysmenorrhea in a 37-year-old female patient. This case study objectively demonstrated the improvements of dysmenorrhea using TRT chiropractic care. The outcomes of this study may provide support to further research in chiropractic care and dysmenorrhea.

Torque Release Technique® assesses the tone of the nervous system. The dura mater which surrounds the spinal cord, can become twisted, which changes the tone of the nervous system and inhibits communication throughout the body.

TRT aims to improve communication throughout the body by correcting the primary subluxation which then eliminates nine other compensatory subluxations.[19]

As mentioned previously, subluxations seem to have a primary role when it comes to interfering with the nervous system. Kent discussed how the neuro-dystrophic model of subluxation can result in lowered tissue resistance, altering the immune responses and the trophic function of the involved nerves. This leads to growth in research in how the nervous system plays a role on the immune and endocrine system.[22]

Stone-McCoy is also in agreement in that subluxation has been shown to result in reflex responses of the autonomic nervous system, which could lead to pathological visceral function.[23] Gauthier described it as a neuro-vertebral influence on the nervous system that plays a key role in organs and systems involved in the menstrual cycle.[8]

Just as TRT was used with this patient, so were the thermal and SEMG scans to assess her nervous system. It is unclear as to why the thermal and SEMG scans progressively became more asymmetrical as the care continued. The patient's primary complaints diminished in severity and secondary complaints also improved. Many factors should be considered when dealing with the neuromuscular system (NMS). One must also take note that a scan is only the interpretation of the patient at one point in time and does not represent their life as a whole. According to Meyer, SEMG is not a "stand alone" diagnostic test for any specific disease entity.[24]

Small population size and lack of communication provides a reason as to why little research is done with chiropractic and dysmenorrhea. According to Livdans-Forret, statistics show women with reproduction conditions will frequently "sometimes" share with their chiropractor. This also correlates with chiropractors not asking their female patients about these conditions.[25] Greater amount of research in the chiropractic profession is necessary to help provide a better understanding into this condition.

However, two articles reported a strong correlation between sacroiliac joint dysfunction and dysmenorrhea. They hypothesized that decreased tension on the round ligament inhibits uterine contractions and increases blood flow to the pelvis.[26,27] Other researchers have found that prostaglandins were a large component to generating pain during the menstrual cycle. One researcher found that high levels of E-series prostaglandins correlate to menorrhagia that some women experience during the first three days of menses.[28]

In the particular case of the patient in this report, perhaps the chiropractor's specific adjustments with TRT provided her body with the necessary natural neuroendocrine balance.

Conclusion

Subluxation-based chiropractic care does not simply treat symptoms but focuses on the function of the body as a whole. The reduction of interference within the nervous system allows for a better quality of life. The utilization of Torque Release Technique® protocol provided relief of the patient's primary complaints with significant improvement in her primary dysmenorrhea. Due to the lack of communication between patients and chiropractors, women suffering from dysmenorrhea continue to be overlooked and the potential benefits of chiropractic care unknown. More research is needed to bring awareness of the possible benefits of chiropractic care and primary dysmenorrhea.

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Appendix

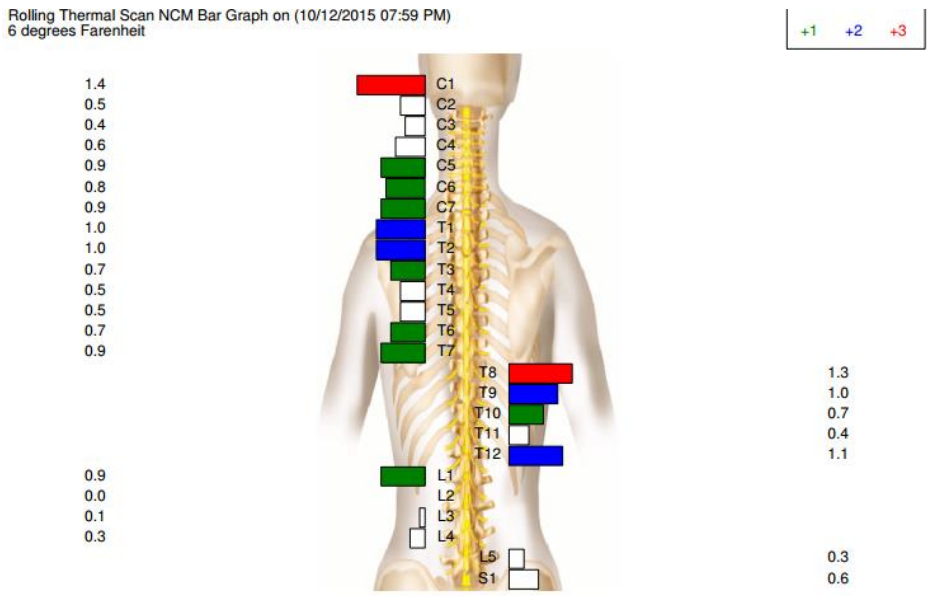

Figure 1. Initial Paraspinal Thermography

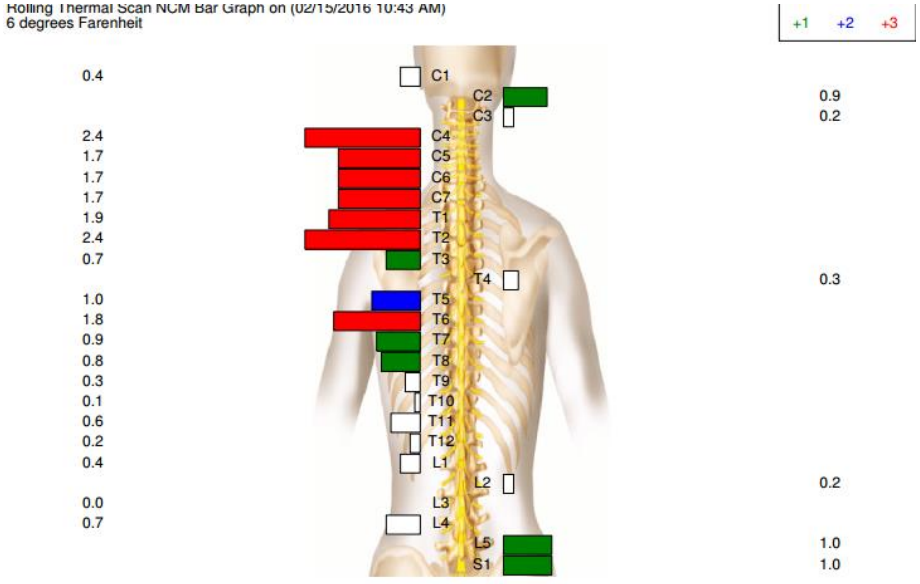

Figure 2. Second Reassessment Paraspinal Thermography

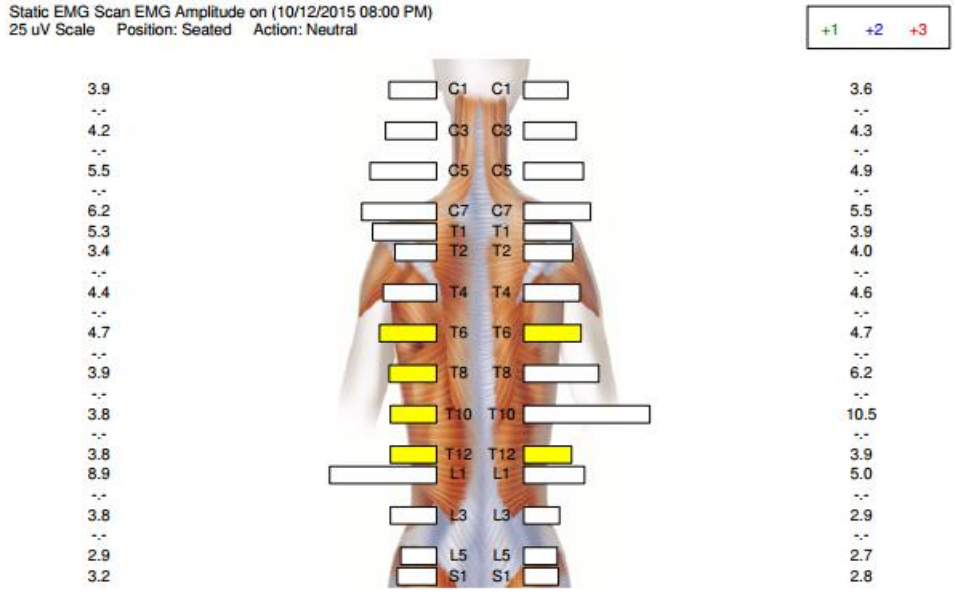

Figure 3. Initial Surface Electromyography

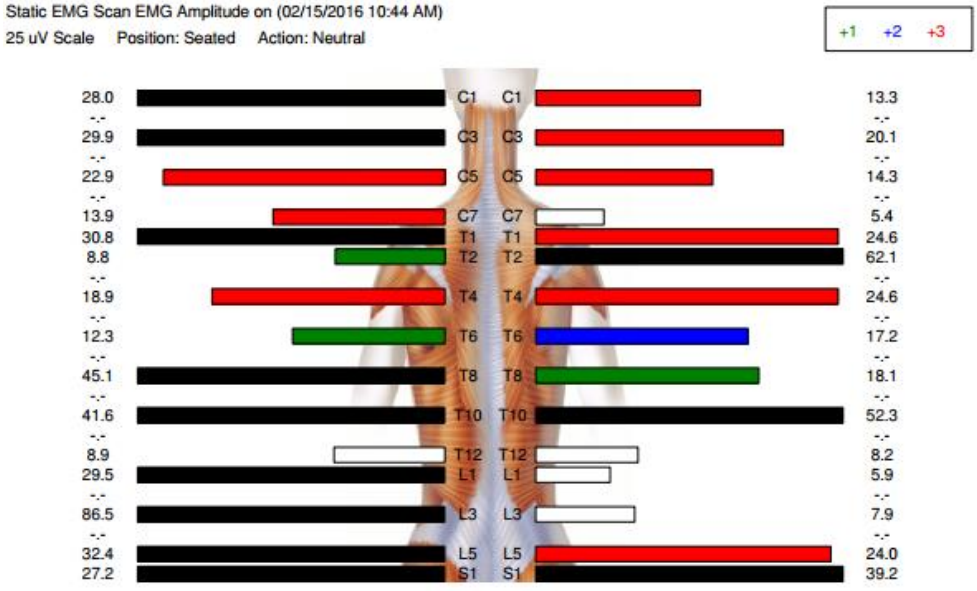

Figure 4. Reassessment Surface Electromyography

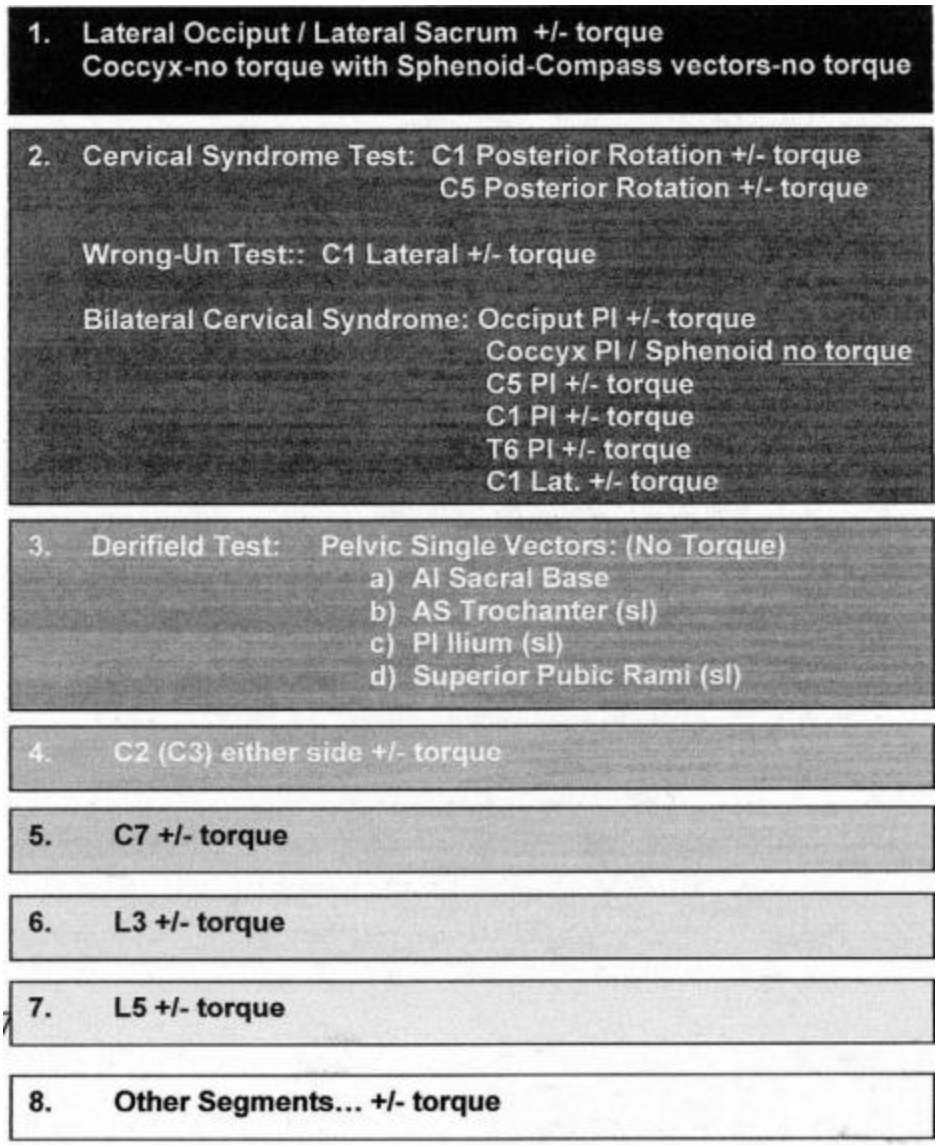

Figure 5. TRT Eight Non-linear Testing Priorities