Case Report

Improvement in Signs and Symptoms of ADHD, Migraines and Functional Outcomes While Receiving Subluxation Based Torque Release Chiropractic and Cranial Nerve Auriculotherapy

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Abstract

Objective: To discuss the subjective and objective signs and symptoms of improvement in ADHD, migraine headaches and functional outcome measures through the application of Torque Release Technique® (TRT) adjustments for spinal subluxation and concurrent cranial nerve auriculotherapy (CNA).

Clinical Features: A report of the case of a twenty one year old male with signs and symptoms of ADHD and migraine headaches.

Intervention and Outcomes: 'Pre care' and 'post care' assessment utilizing ADHD and Headache Symptom Regularity and Severity Questionnaires completed by patient, and functional outcome measures including Digital Postural Assessment, Spinal Range of Motion Analysis, Heart Rate Variability, and a rating system for the Torque Release Technique® (TRT) indicators of subluxation. A course of chiropractic care was maintained over a period of 3 months, totaling 13 visits. TRT chiropractic adjustments were implemented where spinal subluxations were located and CNA was administered. Outcomes revealed a significant decrease in the regularity and severity of signs and symptoms of ADHD and migraine headaches proportionate to improvement in the functional outcome measures.

Conclusions: This case study illustrates the positive response of a twenty one year old male to Torque Release Technique® chiropractic adjustments and concurrent cranial nerve auriculotherapy.

Key Words: *ADHD, adjustment, auriculotherapy, chiropractic, Integrator®, migraines, subluxation, ROM, Stim Plus Pro, Torque Release Technique®.*

Introduction

Torque Release Chiropractic

Torque Release Technique® (TRT) is a tonal model of chiropractic analysis that focuses on the functional outcomes that can be achieved by locating the cause of abnormal tension within the Cranio-Spinal-Meningeal Functional Unit,[1] called the primary subluxation,[2] and by means of the use of the Integrator™, to introduce an adjustive force into the body that will allow for the restoration of normal tone within the functional unit of the spine and nervous system.[3,4] A TRT chiropractic adjustment is based on the premise that deviations in Hz frequency of nerve transmission throughout the nervous system, which are manifested by cord tension or torsion transmitted through spinal dural attachments caused by primary subluxations, would necessitate a 3 dimensional toggle recoil adjustment, applied through appropriate correctional vectors with intent to restore normal Hz frequency. The adjustment is delivered with low mass, high velocity, and concomitant recoil with or without torque, all

within 3 dimensional *x*, *y* and *z* axes.[2,4] TRT was birthed out of a subluxation based randomized placebo-controlled research project by principal investigator Jay Holder, DC, founder of the Holder Research Institute, and Robert Duncan, Ph.D, a biostatistician at the University of Miami School of Medicine.[4,5,6] Out of necessity to surpass statistical confounding, meet Institutional Review Board standards, and allow for inter and intra-examiner reproducibility and reliability, Dr. Holder created the Integrator™.

It was the first device to be cleared and 510k registered by the FDA for the adjustment of vertebral subluxation and holds CE clearances (legally marketed instrument in US and internationally). Built within the device is the proprietary ability to deliver a true Toggle Recoil adjustment at 1/10,000th of a second at 64Hz, in addition to any needed torque and adjustable true force. Another unique feature of the Integrator™ is its' pre-cocking mechanism, which releases its corrective, multiple vector thrust when patient contact reaches a predetermined load. For these reasons, the Integrator™ was preferred in this case over the use of other manual chiropractic adjustments which are triggered by the hands or with other instruments.

An examination of the patient for 15 indicators of spinal subluxation includes evaluation of the functional leg length reflex (FLLR),[7] performed in conjunction with light digital pressure tests with specific lines of drive, at specific vertebral levels that have either direct or indirect dural attachment to the spine.[2,4] When viewing subluxation from a neurological perspective, the central nervous system can manifest primary and secondary subluxations as sequalae to mental, chemical and physical trauma, through its dural attachments, causing tension which can be expressed through neuropeptides within the piezoelectric network of the body. The indication of the primary subluxation is determined in the TRT protocol when the pressure test causes observation of exact bilateral evening of the leg lengths during the prone deep tendon reflex analysis.[2] A significant representation of research highlights the benefits of Torque Release Technique® with a variety of patient presentations such as infertility,[8,9,10,11] autism,[12] ADHD,[13,14] (vaden, EEG studies) depression[6,15,16], traumatic brain injury[17], addiction recovery[6,15,18,19,20], anxiety[6,15] battered wife syndrome,[21] infantile respiratory illness,[22] state of well being[6,18] and quality of life.[16,17,18,23]

Cranial Nerve Auriculotherapy (CNA)

Auriculotherapy is both a diagnosis and treatment system first discovered by Paul Nogier, MD, of Lyon, France in 1952, and first published in 1956. Cranial nerve auricuotherapy, a neurological tonal model, is comprised of a system of internationally standardized neurological reflex points in the auricle supplied by the seven nerves that innervate the ear. Terry Oleson, PhD and author of Auriculotherapy Manual: Chinese and Western Systems of Ear Acupuncture states that "the anatomical structures and electrical application of the auricle are described as they relate to the localization of master points, musculoskeletal points, internal organ points, and neuroendocrine points." [24] Using the FDA approved Stimplus Pro models SW-103 and SW-103F devices, designed by Dr. Jay Holder, the abnormal Hz frequency of certain neurological points are first detected and then corrected with one of three specific frequencies (5 Hz, 10 Hz or 20Hz) of micro-current for 30 or 60 seconds, in order to restore normal frequency and promote neuro-rehabilitation.[19,24] Ear acupuncture significantly differs from auriculotherapy in that the former uses needles to manipulate acupuncture points, and meridians of the ear, whereas the latter, being a tonal model, relies on tangible mainstream clinical neurology of the 4 cranial nerves and 3 cervical ganglia that innervate the ear. Unlike needles which have no frequency, interventions in the tonal mode are required to be frequency based, and therefore electrical in nature. Auriculotherapy is considered safe and effective, and can diagnose and treat hundreds of diseases.[25]

ADHD

Attention Deficit/Hyperactivity Disorder has become increasingly prevalent since it was first described by Sir George Still in 1902. In 2000, ADHD was diagnosed in 3-7% of school aged children in the US, according to the American Psychiatric Association.[26] However, reports from parent surveys in 2007 indicate that the percentages may be more accurately reflected as 9.5%, and may be as high as 15.6% in some states such as North Carolina.[27] The Center for Disease Control and Prevention reports ADHD to be one of the most common neurobehavioral disorders of childhood, often lasting into adulthood.[28] Additionally, according to the CDC's Morbidity and Mortality Weekly Report from November 12, 2012, among children currently diagnosed with ADHD, 2.7 million between the ages of 4-17 were taking medication for their disorder.[28] Unfortunately, the current system of care is not meeting the needs of individuals with ADHD across their lifespan, and only a small percentage of children diagnosed with childhood ADHD escape severe adverse outcomes into adulthood.[29] The findings in this case study suggest an approach to this dilemma that may warrant merit in the improvement of functional outcomes for these individuals.

Migraines

Migraine headaches have been an interest in research and study due to its commonality and persistence in spite of the myriad of prescriptions and over the counter analgesics available. A 1998 population-based diary study by Von Korff et al, concluded that migraine sufferers had a significant amount of reduced work performance (41%), and missed work days (avg. 1.1 in 3 mos.).[30] In 2005, Lawrence Goldberg, MD, MBA estimated that the annual costs for outpatient services including lab work, diagnostics, and management of treating side effects to total as much as $17 billion in the United States alone. This amount is exclusive of the indirect costs from lost productivity and missed work days.[31] Results from a survey done in 2009 by the National Center for Health Statistics, with participants ranging in age from 18-75, reported that 21.8% of females and 10% of males have experienced a migraine or severe headache that lasted a whole day or more within the past 3 months.[32]

Scientific studies on the etiology of migraine headaches suggest a complex pathophysiologic origin involving both the peripheral and central nervous systems.[33,34] Chiropractic care has been shown to be a reasonable alternative for helping some migraine suffers achieve relief from this often

debilitating condition, especially those who have been non-responsive to the traditional array of pharmaceuticals or desire other treatment options.[35,36] Torque Release Technique® chiropractic adjustments, delivered with specific correctional vectors, may offer improvement of migraines by introducing changes in the neuropeptide receptors in the dorsal horn of the spinal cord and mesolimbic system.[37]

Case Report

Baseline General Health Regularity and Severity Questionnaire

Prior to the patient's health history and initial exam, the patient was asked to complete a self rated General Health Questionnaire, with the purpose of establishing a subjective baseline of his current state of health and well being. The ratings were divided into two categories: Regularity and Severity. The patient was asked to assess regularity of a list of symptoms of general health as occurring never = 0, rarely = 1, sometimes = 2, often = 3 and always = 4; and severity as none = 0, mild = 1, moderate = 2, severe = 3 and unbearable = 4 (table 1).

The patient rated the regularity of feeling isolated, lonely, sad, depressed, unhappy or upset as 4. A regularity rating of 3 was self assessed for aches and pains, headaches, health affecting family or relationships, and taking over the counter medications. A regularity rating of 2 was noted for being angry or frustrated, having concentration or thinking problems, low energy or fatigue, making bad dietary choices, and being restricted in basic daily, work and/or recreational activities. He indicated rarely experiencing feeling sick or unwell, making bad lifestyle choices, poor fitness level, and taking prescription medication.

The patient rated the severity of feeling isolated, lonely, sad, depressed, unhappy or upset, and concentration or thinking problems, headaches, low energy or fatigue as unbearable. He described symptoms of aches and pains, feeling sick or unwell, and being restricted in basic daily, work and/or recreational activities as severe. A rating of 2, or moderate, was given to feelings of anger or frustration, health affecting family or relationships, making bad dietary choices, and taking over the counter medications. He also indicated that he rarely made bad lifestyle choices or had poor fitness level.
At the time of the baseline General Health Questionnaire, the patient denied any occurrence (negating severity rating) of asthma, coughing or breathing problems, bad posture, being dissatisfied with appearance or shape, heart, circulation or chest problems, hormonal problems, sexual difficulties, infections or allergies, nausea, reflux or digestive problems, not exercising enough, pains in arms/hands legs/feet, being really tired on days off, abdominal pains or problems, being unhappy at home or work, vomiting, constipation or diarrhea.

Health History

A health history was then taken for a twenty one year old male with signs and symptoms of ADHD and migraine headaches, who presented for care with anxiety, depression, insomnia, neck pain and back stiffness. To manage his conditions he was taking paracetamol, codeine, ibuprofen, and valium specifically for migraines. Three weeks prior to presentation, he suffered a skateboarding falling injury sustaining a blow to his head and broken left 5th digit, which was in a plaster cast at the time of presentation. A health history revealed migraine headaches since age 4 that were accompanied by nausea, vomiting and mild scotoma, blurred vision and photophobia. Additionally, at birth he was noted as having decreased tone to anterior body muscles, and increased tone to posterior body muscles, as well as nystagmus. He revealed his greatest current emotional stress was unemployment and living with family members. He rated his health as 7/10, fitness 5/10 and quality of life as 9/10. He expressed the desire to achieve of a better level of health.

Outcome Measures

ADHD Symptom Regularity and Severity Questionnaire
For the purpose of pre and post evaluation of the regularity and severity of symptoms of ADHD, a rating system, which delineated specific symptoms drawn from the categories of inattention and hyperactivity/impulsivity as listed in the Diagnostic and Statistical Manual of Mental Disorders, 4th Ed. (DSM-IV TR), was created in the form of a self rated questionnaire. The questionnaire was given to the patient to complete after the second visit under care and again after the duration of a total of 13 visits over the course of 3 months. The data collected was divided and analyzed by comparing individual symptoms pre and post care, as well as evaluating by category and overall combined symptoms pre and post care. The rating values for Regularity and Severity are identical to those described above for the General Health Questionnaire.

The patient described his ADHD symptoms of fidgeting or squirming, having to get up from his seat, running or climbing when he shouldn't, 'on the go' as if driven by a motor, and talking excessively as always occurring. He indicated that he often has trouble sustaining attention in work or play, does not follow through on instructions and fails to finish tasks, has difficulty organizing tasks and activities, avoids activities that require a sustained mental effort, is distracted by extraneous noise, is forgetful in daily activities, and has difficulty with quiet leisure activities. A rating of 2 (sometimes) was given for symptoms of ignoring details, making careless mistakes, losing thing he needs, blurting out answers before questions have been completed, and interrupting or intruding on others. He noted only rarely was he not able to listen when directly being addressed or wait his turn. The results of the initial questionnaire in the category of Regularity indicated a self rating of 70% inattention (the dominant trait for his ADHD), and 37% impulsivity/hyperactivity, and the results post care were 50% and 24% respectively (table 2).

The patient indicated that the severity of his symptoms of running or climbing when he shouldn't and feeling 'on the go' as if driven by a motor was unbearable. His rated his symptoms of not following through on instructions and failing to finish tasks, having difficulty organizing tasks and activities, avoiding activities that require a sustained mental effort, getting distracted by extraneous noise, having to get up from his seat, having difficulty with quiet leisure activities, and talking excessively as severe. A rating of 2 (moderate) was given to having trouble sustaining attention in work or

play, losing things he needs, being forgetful in daily activities, fidgeting or squirming, and blurting out answers before questions have been completed. He rated the severity of ignoring details, making careless mistakes, not listening when directly being addressed and interrupting or intruding on others as mild. He denied any severity in being able to wait his turn. The results of the initial questionnaire in the category of Severity indicated a self rating of 57% inattention – the dominant trait for his ADHD, and 29% impulsivity/hyperactivity, and the results post care were 25% and 12% respectively.

His combined self assessment in regularity and severity of ADHD symptoms at the time of his initial assessment was 63%. When compared to the post assessment, which had a combined score of 37.5%, a 25.5% decrease in symptoms indicated a marked improvement from the patient's original assessment. The most dramatic individual change was with running or climbing when he shouldn't, from 4, 4 initially (regularity, severity) to 1, 0. It should be noted that no symptoms were increased in the post assessment and some did not change rating at all (table 2).

Headache Regularity and Severity Questionnaire

A second questionnaire was designed by Dr. Nick Hodgson, covering an array of factors of headaches which included a rating scale for regularity and severity of symptoms. For the purpose of pre and post evaluation, the questionnaire was given to the patient to complete after the second visit under care and again after the duration of a total of 13 visits over the course of 3 months. The data collected was divided and analyzed by comparing individual symptoms pre and post care, as well as evaluating by category and overall combined symptoms pre and post care. The rating equivalents for regularity and severity are identical to those described previously for the General Health Questionnaire.

The patient's self assessment after the second visit under care regarding the regularity of his headaches is as follows: he rated pain behind his eyes and throbbing pain as always, or 4. He indicated with a rating of 3 that he often missed work or school, and that his performance at work/school, at home and at sport/recreation was reduced due to his headaches. Also rated with a 3 were symptoms of reduced energy or concentration, and feeling depressed, angry or upset. Additionally, he often experienced visual disturbances such as spots, flashes and/or halos, which may have preceded a migraine. Squeezing pain either on one side of the head, or both sides, and pain in the neck with significant stiffness of neck movements were all rated 3 as well, at the time of the primary questionnaire.

The patient indicated that sometimes, regularity rating of 2, he would experience nausea or sickness in his stomach, blurry vision, pain in the back and/or top and/or front of the head and/or in his shoulder. His initial headache questionnaire revealed only rare occurrences of unusual sensation in arms/hands or legs/feet, or pain on the face or behind the nose and/or cheek bones. The results of the initial questionnaire in the category of Regularity indicated that overall, the patient experienced symptoms of headaches an average of 61% of the time, while the post care assessment results were totaled at an average of 31% of the time (table 3).

Regarding the severity of his migraines, the patient denied that any of the headache symptoms were unbearable. He did indicate many severe symptoms such as not attending work/school, his performance at work/school/home/sport/recreation being reduced, reduction in energy or concentration, feeling depressed, angry or upset, vomiting, having throbbing and squeezing pain, having pain on back/top/front/one side or both sides of his head, as well as pain behind the eyes. He rated nausea, seeing spots, flashes and/or halos, blurry vision, pain and stiffness in neck movements as moderate. He indicated that his symptoms of unusual sensation in the arms/hands and/or legs/feet, pain on his face and pain behind nose and/or cheekbones as being mild. The results of the initial questionnaire in the category of Severity indicated that overall, the symptoms of the patient's migraines were causing an average of 60% of interference with daily activities and/or pain when compared to no interference/pain, and the results of the post assessment were at 42%.

His combined self assessment in regularity and severity of headache symptoms at the time of his initial assessment was 60.5%. When compared to the post assessment, which had a combined score of 36.5%, a 24% decrease in symptoms indicated a marked improvement from the patient's original assessment. The most dramatic individual changes were seen with missing work/school, and performance at work/school/sport/recreation being reduced, which both rated from 3, 3 initially to 0, 0, post care. Also of note, were symptoms of unusual sensation in the arms/hands and/or legs/feet, that decreased from rarely and mild to never and none respectively (table 3).

Chiropractic Examination and Functional Outcome Measures

TRT Tonal Indicators of Subluxation

A rating system created to objectively categorize 9 out of the 15 prone indicators of subluxation, according to Torque Release Technique® is as follows:

- Breathing Movement (0-5)
- Heel Tension (0-5 left and right)
- Abductor Tendency (0-5 left and right)
- Foot Flare (0-5 left and right)
- Foot Pronation/Supination (0-5 left and right)
- Functional Leg Length Inequality (rated in mm)
- Cervical Syndrome Test (0 for negative, 2 for positive)
- Bilateral Cervical Syndrome Test (0 for negative, 2 for positive)
- Derefield Test (0 for negative, 2 for positive)

In each case, a score of 0 was a negative finding, increasing in linear severity to the highest score for each indicator. The individual scores for the patient were totalled to indicate a Tension Severity Score (TSC). The initial TSC was calculated at 20, with post chiropractic care results decreasing by 5. The most significant pre and post changes were seen with right heel tension from 3 to 1, and Derefield test from positive to

negative. (table 4).

Heart Rate Variability

To further assess the status of the patient's general health and well being, hardware and software designed by HeartMath® called emWave®, was utilized to perform a pre and post Heart Rate Variability (HRV) Coherence Ratio Analysis. This system is specially designed to electronically monitor heart rhythm patterns and calculate a coherence ratio which gives insight into the patient's level of mental and emotional synchronicity. The ratio is a division of percentages of time spent in low, medium and high coherence states. During this study the patient was in a relaxed seated position while being monitored for 5 minutes. Comparison of the HRV coherence ratios were made pre and post chiropractic care, and an overall improvement was seen, going from 29/21/50 to 8/38/54, with the greatest change in the low coherence state (table 4).

Digital Postural Assessment

Postural analysis, which is consistently performed by chiropractors as one of many assessment tools, was done as part of the patient's preliminary examination. Aberrant posture, particularly in the sagittal plane, which places torsional stress and/or increased tension on the spinal cord, creates a host of neurological and physiological changes that create poor clinical outcomes.[38] Additionally, a study in Japan (which has a population with the world's longest life expectancy) involving 804 men and women between the ages of 65-94 over a 4.5 year period, showed that spinal inclination, a postural measurement in the sagittal plane, is associated with future dependence in activities of daily living among older adults.[39]

For the purpose of collecting quantitative data through this assessment, Posture Pro's digital postural analysis software, created by Ventura Designs was used pre and post chiropractic care. The goal in postural correction would be to achieve a Total Deviation score of 10° or less. From a tonal perspective, posture is seen as the body/mind's ability to perceive and position itself in three dimensional space, with greater body distortion indicating increasing separation from wholeness, and hence, subluxation severity. The means for calculating an accurate analysis required that easily identifiable markers be placed at standard anatomical locations. For an AP postural analysis, red stickers were placed bilaterally in the center of the humeral head, ASIS, center of patella, and center of ankle joints.

Additionally, in the sagittal plane line, markers were placed at the episternal notch and the umbilicus. The patient was then digitally photographed in what he believed to be his neutral position. The image was imported into the software, and in order to complete the analysis for the AP postural assessment, the software user selected landmarks with the mouse that were unattainable by marking with stickers, such at the center of each eye, and in the sagittal plane line, the bridge of the nose and a point equidistant between the medial malleoli. A lateral postural analysis required placement of markers at the standard anatomical landmarks of EAM, center of glenoid, greater trochanter, center of knee joint and just anterior to the lateral malleolus. Within the software both digital views were anaylzed after the user selected corresponding locations in sequence. A Total Deviation score was calculated using a summary of the regional postural misalignments, and the patients' initial rating of postural deviation was 14° (fig. 1). After a total of 13 chiropractic visits, analysis showed an improvement of 0.7° (fig. 2).

Spinal Range of Motion (ROM) Assessment

Through the use of digital photography, combined with Ventura Designs software called VROM, the patient was evaluated pre care and post care for spinal ranges of motion in the neck and trunk. Visual data was collected by photographing the patient at his end ranges of motion. End ranges that were observed in the cervical region were: flexion and extension, right and left lateral flexion and right and left rotation. End ranges that were observed in the trunk region were: right and left rotation, flexion and extension and right and left lateral flexion. With the softwares' built in goniometer, precise ROM angles were measured at each end position to be compared to considered norms according to the American Medical Association Guidelines for evaluating impairment.[40] An increase in deficit was seen in right and left cervical rotation, as well as in trunk flexion and left trunk lateral flexion. The patient improved from a cervical flexion deficit of 18 to 17, and from a 4.3 right trunk lateral flexion deficit to 0. All other ROM evaluations had no change (table 4 & figs. 3 & 4).

Chiropractic Care with Concurrent Auriculotherapy

The specific Torque Release Technique® chiropractic adjustments and auriculotherapy (CNAS) as outlined in Figure 5 were delivered to the patient according to technique protocols each visit. .

Discussion

It is understood that this case study provides only a limited perspective on an intervention that had a positive outcome for symptomatic conditions of ADHD and migraines in a 21 yr. old male; two maladies that affect a great width and depth of the human population. For nearly 100 years traditional science has grappled with fully understanding and categorizing ADHD, and attempted to devise solutions for parents of affected children and adults whose condition has persisted beyond childhood. Allopathic medicine's approach to ADHD is mainly one of pharmaceutical control, with an acceptance of unpredictable and potentially harmful side effects.

Similarly, migraine headaches are a widespread problem causing the loss of billions of dollars annually in the US for treatment and management of side effects. It is clear that there is an ever increasing mandate for doctors of chiropractic to pursue avenues of research for these conditions, using objective and quantifiable outcome assessment tools in order to raise the profession to a higher level of scientific excellence, and lead on the forefront of being a natural approach to the resolution of medically unresolved disorders and conditions. This study has offered a means to identify and validate chiropractic adjustments using the non-linear tonal model approach of Torque Release Technique® (TRT), and

auriculotherapy (CNAS), as successful interventions in the care of a patient with ADHD and migraines. A larger population study would be needed to confirm similar results, and if large enough, to effect a change of perspective on addressing these nationwide problems.

Conclusion

This case study illustrates the positive outcomes of a twenty one year old male with signs and symptoms of ADHD and migraine headaches while receiving subluxation based Torque Release Technique® chiropractic care and concurrent auriculotherapy. Subjective decreases in the regularity and severity of symptoms of ADHD and migraine headaches were reached. Objective results in functional improvement were seen with tonal indicators of subluxation, heart rate variability, posture and ranges of motion.

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Tables

Table 1

GENERAL HEALTH QUESTIONNAIRE

	Date 1: 19/06/12	
	REGULARITY Never = 0 Rarely = 1 Sometimes = 2 Often = 3 Always = 4	**SEVERITY** None = 0 Mild = 1 Moderate = 2 Severe = 3 Unbearable = 4
Aches and pains	3	3
Angry or frustrated	2	2
Asthma, cough or breathing problems	0	0
Bad posture	0	0
Concentration or thinking problems	2	4
Dissatisfied with appearance or shape	0	0
Feel isolated or lonely	4	4
Feel sick or unwell	1	3
Headaches	3	4
Health affects family or relationships	3	2
Heart, circulation or chest problems	0	0
Hormonal, menstrual or sexual difficulties	0	0
Infections or allergies	0	0
Low energy or fatigue	2	4
Make bad dietary choices	2	2
Make bad lifestyle choices	1	1
Nausea, reflux or digestive problems	0	0
Not enough exercise	0	0
Pains in hands, feet, arms &/or legs	0	0
Poor fitness level	1	1
Really tired on days off	0	0
Restricted in basic daily activities	2	3
Restricted in work or recreational activities	2	3
Sad, depressed, unhappy or upset	4	4
Take over the counter medication	3	2
Take prescription medication	1	0
Tummy or abdominal pains or problems	0	0
Unhappy at home &/or work	0	0
Vomiting, constipation or diarrhea	0	0
SUBTOTAL	36	42
TOTAL	78	

Table 2

ADHD QUESTIONNAIRE

	7/3/2012		10/2/2012	
	REGULARITY Never = 0 Rarely = 1 Sometimes = 2 Often = 3 Always = 4	**SEVERITY** None = 0 Mild = 1 Moderate = 2 Severe = 3 Unbearable = 4	**REGULARITY** Never = 0 Rarely = 1 Sometimes = 2 Often = 3 Always = 4	**SEVERITY** None = 0 Mild = 1 Moderate = 2 Severe = 3 Unbearable = 4
Ignores details	2	1	2	1
Makes careless mistakes.	2	1	2	1
Has trouble sustaining attention in work or play	3	2	2	1
Does not seem to listen when directly addressed	1	1	2	1
Does not follow through on instructions; fails to finish	3	3	2	1
Has difficulty organizing tasks and activities	3	3	2	1
Avoids activities that require a sustained mental effort	3	3	2	1
Loses things he/she needs	2	2	2	1
Gets distracted by extraneous noise	3	3	2	1
Is forgetful in daily activities	3	2	2	1
Fidgets or squirms	4	2	3	1
Has to get up from seat.	4	3	2	1
Runs or climbs when he/she shouldn't	4	4	1	0
Has difficulty with quiet leisure activities	3	3	3	2
"On the go", as if driven by a motor	4	4	3	2
Talks excessively	4	3	4	2
Blurts out answers before questions have been completed	2	2	1	1
Has difficulty waiting his/her turn	1	0	0	0
Interrupts or intrudes on others	2	1	1	0
INATTENTION TOTAL	53	43	38	19
IMPULSIVITY/HYPERACTIVITY TOTAL	28	22	18	9
SUBTOTAL	53	43	38	19
TOTAL	96		57	

Table 3

HEADACHE QUESTIONNAIRE

	7/3/2012		10/2/2012	
	REGULARITY Never = 0 Rarely = 1 Sometimes = 2 Often = 3 Always = 4	**SEVERITY** None = 0 Mild = 1 Moderate = 2 Severe = 3 Unbearable = 4	**REGULARITY** Never = 0 Rarely = 1 Sometimes = 2 Often = 3 Always = 4	**SEVERITY** None = 0 Mild = 1 Moderate = 2 Severe = 3 Unbearable = 4
Didn't attend work/school	3	3	0	0
Performance at work/school reduced	3	3	0	0
Performance at home reduced	3	3	2	4
Performance at sport/recreation reduced	3	3	0	0
Reduced energy or concentration	3	3	2	2
Feel depressed, angry and/or upset	3	3	1	3
Nausea/sick feelings in tummy	2	2	1	1
Vomit/throw up	1	3	1	0
See spots, flashes and/or halos	3	2	1	1
Blurry vision	2	2	1	1
Throbbing pain	4	3	2	3
Squeezing pain	3	3	1	0
Unusual sensations in hand/s and/or arm/s	1	1	0	0
Unusual sensations in feet and/or leg/s	1	1	0	0
Pain on back of head	2	3	2	3
Pain on top of head	2	3	2	3
Pain on one side of head	3	3	2	3
Pain on both sides of head	3	3	2	3
Pain on front of head	2	3	2	3
Pain on face	1	1	1	2
Pain behind eyes	4	3	2	3
Pain behind nose and/or cheek bones	1	1	1	1
Pain in neck	3	2	2	3
Pain in shoulder	2	1	1	1
Stiffness of neck movements	3	2	2	2
SUBTOTAL	61	60	31	42
TOTAL	121		73	

Table 4

TONAL EXAMINATION FINDINGS

	DATE 1	DATE 2
	6/19/2012	10/2/2012
Cervical Flexion Impairment	18	17
Cervical Extension Impairment	-16	-27
Right Cervical Lateral Flexion Impairment	-1	-3
Left Cervical Lateral Flexion Impairment	-4	-2
Right Cervical Rotation Impairment	6	12
Left Cervical Rotation Impairment	3	3
AVERAGE C ROM IMPAIRMENT	1	0
Right Torso Rotation Impairment	-19	-26
Left Torso Rotation Impairment	-23	-27
Right Torso Lateral Flexion Impairment	4	-1
Left Torso Lateral Flexion Impairment	0	2
Torso Flexion Impairment	-6	2
Torso Extension Impairment	0	-5
AVERAGE T & L ROM IMPAIRMENT	-7.333333333	-9.166666667
TOTAL POSTURAL DEVIATION	14	13
Breath	3	3
Left Heel Tension	2	2
Right Heel Tension	3	1
Left Abductor Tendency	0	0
Right Abductor Tendency	0	0
Left Foot Flare	1	0
Right Foot Flare	2	1
Left Foot Pronation/Supination	1	1
Right Foot Pronation/Supination	2	2
Functional Leg Length Inequality	4	5
Cervical Syndrome	0	0
Bilateral Cervical Syndrome	0	0
Derefield	2	0
TONAL TENSION SCORE	20	15
BIOLOGICAL / FUNCTIONAL AGE	**27.66666667**	**18.83333333**
HRV Coherence: Low/Medium/High	29 / 21 / 50	8 / 38 / 54

Figures

Figure 1

Figure 2


Import AP
Import Lat
H
S
H
H
P
K
A
R O-A
L O-A
Grid
Use AP Connected Line
Get Posture Number
Cancel
Save
View
Print
Exam
Screening
POSTURE NUMBER
14
Additional cerv force. %
-
Total Deviation
13.3 °
Camera Tilt Compensation
AP
0
LAT
0
Ok
Loss of Height
LOH
N/A
%
N/A
cm
Height
0
cm
3 °
-2 °
1 °
0 °
1 °
1 °
-2 °
-1 °
7 °
7 °

Figure 3

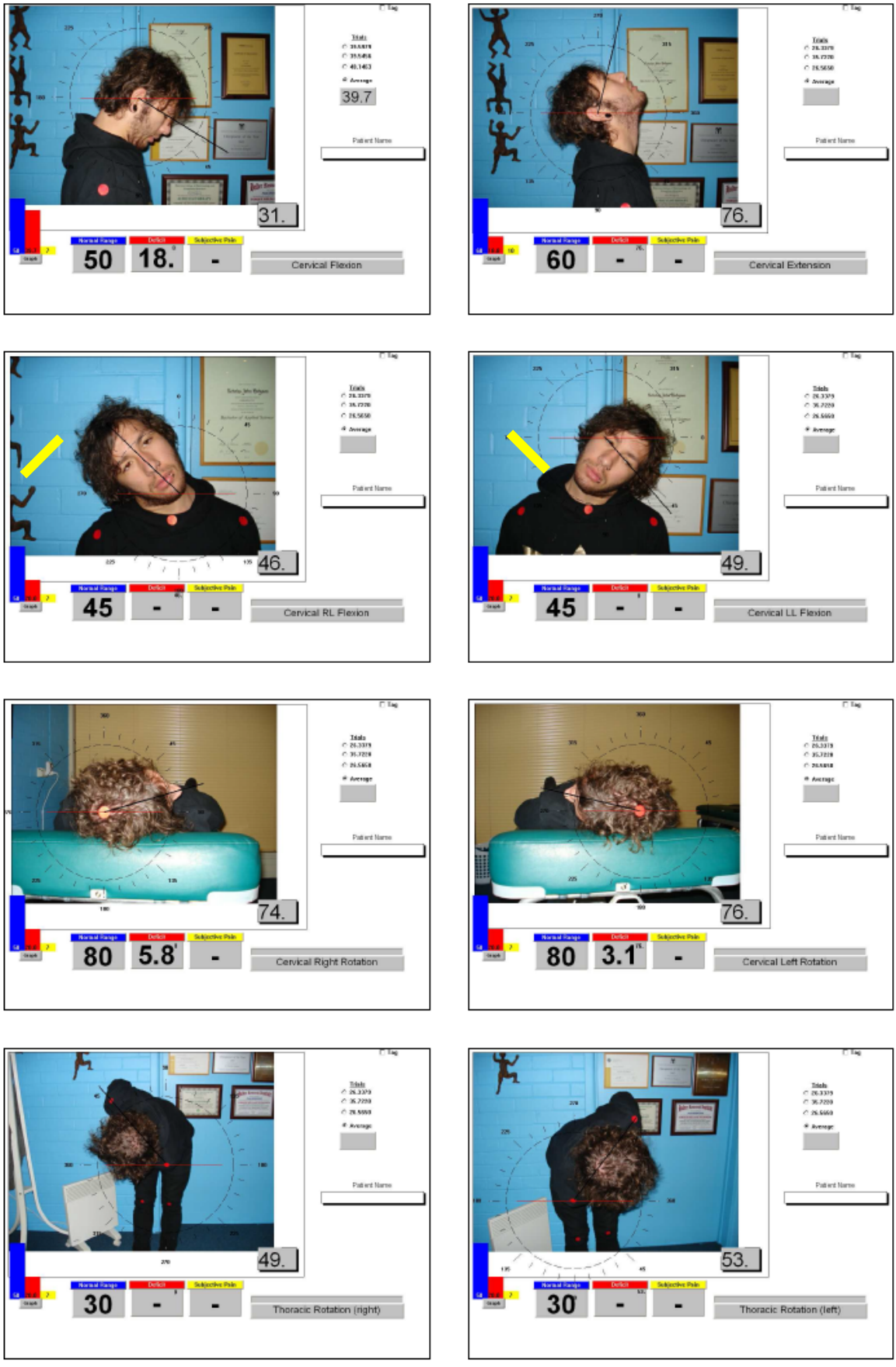
39.7
31.
50
18.
-
Cervical Flexion
76.
60
-
-
Cervical Extension
46.
45
-
-
Cervical RL Flexion
49.
45
-
-
Cervical LL Flexion
74.
80
5.8
-
Cervical Right Rotation
76.
80
3.1
-
Cervical Left Rotation
49.
30
-
-
Thoracic Rotation (right)
53.
30
-
-
Thoracic Rotation (left)

Figure 4

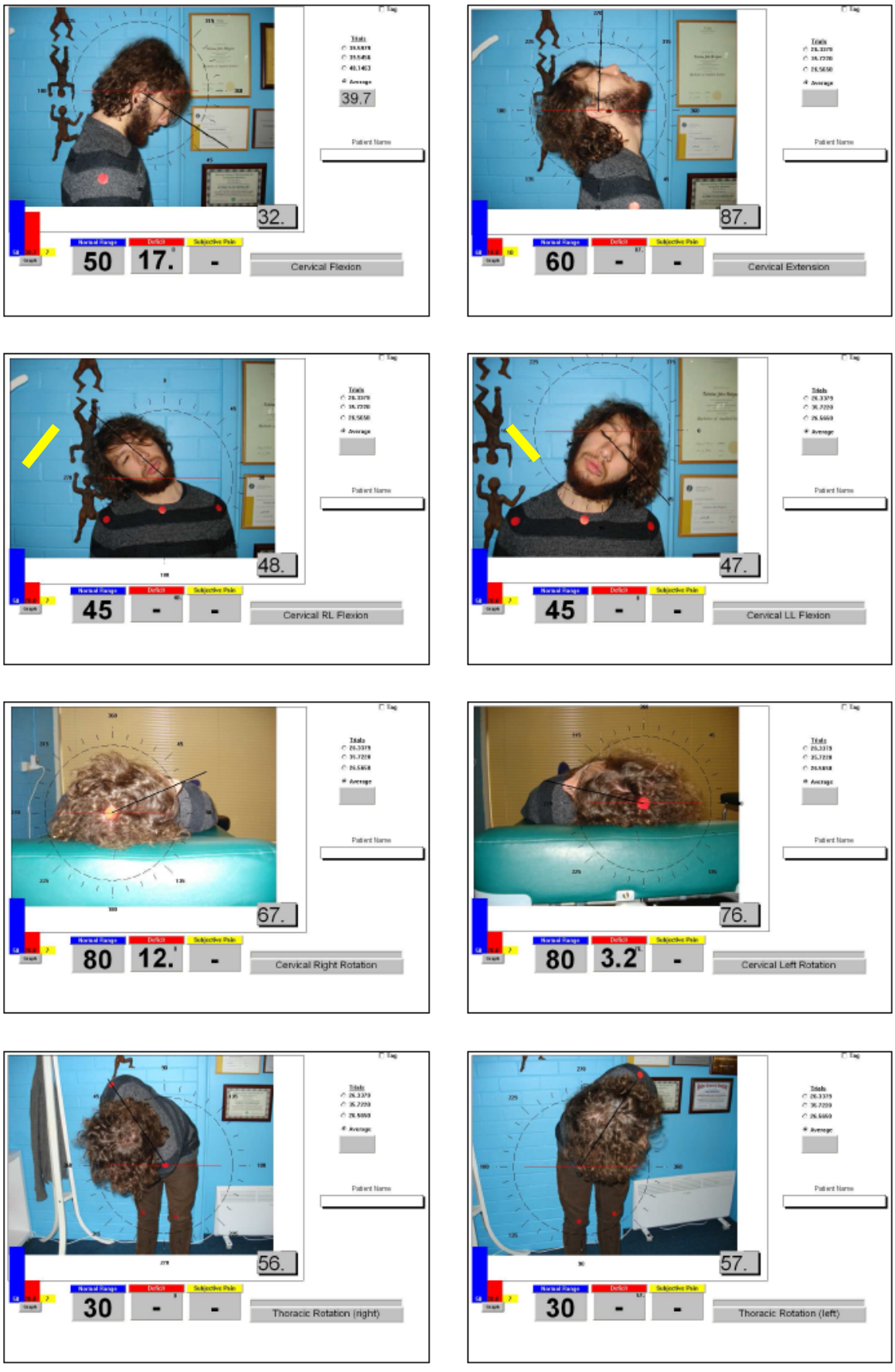
39.7
32.
50
17.
-
Cervical Flexion
87.
60
-
-
Cervical Extension
48.
45
-
-
Cervical RL Flexion
47.
45
-
-
Cervical LL Flexion
67.
80
12.
-
Cervical Right Rotation
76.
80
3.2
-
Cervical Left Rotation
56.
30
-
-
Thoracic Rotation (right)
57.
30
-
-
Thoracic Rotation (left)

Figure 5

1st Visit
TRT: 1 - C2 RPS, 2 - S/I RP, 3 - C7 RPS
CNAS: L - zero, C spine, L spine, S spine, symp, allergy, shoulder, master shoulder, tranq
R - zero, C spine, L spine, S spine, symp, allergy, shoulder, master shoulder, tranq

2nd Visit
TRT: 1 - S/I LP, 2 - Sacrum LAI, 3 - C2 LPI
CNAS: L - stomach, L spine, S spine, liver, symp, shen men, allergy, shoulder, tranq
R - C spine, L spine, S spine, liver, symp, shen men, allergy, shoulder, tranq

3rd Visit
TRT: 1 - C0 RLI, 2 - S/I RP, 3 - C1 RPS
CNAS: L - zero, C spine, S spine, symp, shen men, allergy, wrist, shoulder, tranq
R - zero, C spine, S spine, symp, shen men, allergy, shoulder, master shoulder, tranq

4th Visit
TRT: 1 - C0 RLI, 2 - C7 RPS, 3 - L3 RPS
CNAS: L - zero, C spine, L spine, S spine, symp, knee, allergy, wrist, shoulder, tranq
R - zero, C spine, L spine, S spine, symp, knee, allergy, shoulder, master shoulder, tranq

5th Visit
TRT: 1 - Sacrum RAI, 2 - C2 RPS, 3 - C7 RPS
CNAS: L - zero, C spine, S spine, bowel, symp, shen men, allergy, shoulder, master shoulder, tranq
R - zero, C spine, liver, L spine, S spine, symp, shen men, allergy, shoulder, tranq

6th Visit
TRT: 1 - S/I RP, 2 - C2 RPS, 3 - C7 RPS
CNAS: L - zero, C spine, S spine, bowel, symp, shen men, allergy, shoulder, master shoulder, tranq
R - zero, C spine, liver, L spine, S spine, symp, shen men, allergy, shoulder, tranq

7th Visit
TRT: 1 - C0 RLI, 2 - Sacrum RAI, 3 - C1 RPS
CNAS: L - shen men, symp, pZero, Anti D neck, L/S Sp Cord, fr Cortex
R - shen men, symp, pZero, Anti D neck, L/S Sp Cord, fr Cortex

8th Visit
TRT: 1 - C0 RLI, 2 - C2 RPS, 3 - C7 RPS
CNAS: L - zero, heart, lung, C spine, S spine, symp, allergy, shoulder, cerebral
R - zero, lung, C spine, S spine, symp, allergy, master shoulder, cerebral

9th Visit
TRT: 1 - C0 RLI, 2 - C2 RPS, 3 - Sacrum RAI
CNAS: L - zero, C spine, L spine, S spine, bowel, symp, allergy, master shoulder, tranq
R - zero, C spine, L spine, S spine, symp, allergy, master shoulder, tranq

10th Visit
TRT: 1 - S/I RP, 2 - C2 RPS, 3 - C7 RPS
CNAS: L - zero, C spine, heart, L spine, S spine, symp, allergy, master shoulder, tranq
R - zero, C spine, S spine, bowel, symp, knee, allergy, master shoulder, tranq

11th Visit
TRT: 1 - S/I RP, 2 - C7 RPS, 3 - C2 RPS
CNAS: L - zero, C spine, L spine, S spine, lung, symp, knee, allergy, occiput, tranq
R - zero, C spine, L spine, S spine, lung, symp, knee, allergy, occiput, tranq

12th Visit
TRT: 1 - S/I LP, 2 - C7 LPI, 3 - C7 LPI
CNAS: L - S spine, bowel, C spine, zero, symp, allergy, shoulder, master shoulder, tranq
R - S spine, L spine, C spine, zero, symp, allergy, shoulder, tranq

13th Visit
TRT: 1 - L5 LPI, 2 - C2 LPI, 3 - C7 LPI
CNAS: L - zero, S spine, L spine, C spine, heart, symp, allergy, shoulder, master shoulder, tranq
R - zero, S spine, L spine, symp, hip, allergy, shoulder, master shoulder, tranq

Note: on the 3rd and 10th visits, the patient's chiropractic evaluation determined that an adjustment of the jaw was necessary. Left Jaw Superior Mandible and Left Jaw Posterior Mandible, respectively, were adjusted with the Integrator™.