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CLINICALEXPOSITION

Insomnia and Chiropractic Practice:

An Applied Kinesiology approach

Scott Cuthbert

Abstract: Are there measurable physical tools that can be dependably used by chiropractic doctors for patients with insomnia? This paper presents these tools and discusses their chiropractic and biological plausibility.

Deep restful sleep is a critical biological experience that influences a wide variety of physiological processes. Insomnia may be affecting an enormous number of chiropractic patients and effecting their mood and their ability to learn and make memories; it also affects their metabolism, appetite, blood pressure, and the levels of inflammation in the body and perhaps even their immune response. Insomnia is also closely associated with unhappiness and depression.

In the United States, The National Sleep Foundation says that adults need 7 to 9 hours of sleep every night while kids may need 10 or more.

Indexing Terms: Chiropractic; AK; Applied Kinesiology; insomnia; ashwagandha.

Introduction

Within the course of a year, up to one-third of the population will suffer from insomnia. Worldwide the prevalence of insomnia disorder reaches up to 10% of the adult population. Poverty, pain, malnutrition, chronic sickness and anxiety cause patients to fail to sleep deeply and peacefully every night.

> *… Patients should do the easy things first in order to sleep better. Establish consistent times to sleep and wake; use the bedroom only for sleep and sex; remove the TV …'*

Women are more often afflicted than men, and insomnia disorder is a risk factor for somatic and mental illnesses, especially depression and anxiety disorders. The Journal of Sleep Research demonstrates that persistent hyper-arousal at the cognitive, emotional, cortical and/or physiological levels are central to most theories regarding the pathophysiology of insomnia, and these obviously effect Chiropractic patients around the world. (1)

Many Chiropractic patients will be found to use over-the-counter medications to combat the problem, while others seek even stronger sedatives. Each year roughly ten million people in the US alone receive prescriptions for sedative hypnotics. More than 4 million patients filled a new insomnia prescription between 2005 and 2024 (diphenhydramine, called Benadryl, among others). (2)

The two primary classes of drugs used in the treatment of insomnia are anti-histamines and benzodiazepines. Antihistamines, like Benadryl and Nytol, are available over the counter, while benzodiazepines, like Valium, Lunesta, Ambien and Halcion, are available only by what is for

many an expensive prescription. While both antihistamines and benzodiazepines are effective in the short term, they cause significant problems in the long term. (3)

Benzodiazepines, in particular, are not designed to be used for the long term, as they are addictive, have numerous side-effects, and cause abnormal sleep patterns. Antihistamines also interfere with normal sleep. As a result, people who take sleeping pills enter a vicious cycle. They take the drug to induce sleep, but the drug causes disruption of normal sleep. In the morning, in an attempt to 'get going', they will typically drink large quantities of coffee, which further worsens insomnia. Additionally, sleeping pills do not treat the physiological or biopsychosocial causes of anyone's failure to sleep.

Measurable physical tools for insomnia patients

Procedure

Applied kinesiology Chiropractic manual muscle testing has added another dimension to the diagnosis and treatment of insomnia. Many years ago it was observed that when the lights in the treatment room were turned off, several key muscles associated with the endocrine system would immediately test weak (using the standardised, reliable and validated manual muscle test used in Applied Kinesiology) in patients with insomnia and its related pineal gland problems. A specific type of cranial and mandibular (TMJ) disturbance has been associated with this finding, and correction of this problem alone frequently results in patients sleeping remarkably better once more.

For doctors who are unable to turn out the lights completely in their treatment rooms (for instance some of us who live in the tropics), covering the patient's eyes with a thick towel (leaving the nose exposed) and asking the patient to close their eyes for 10 seconds will satisfy the needs of this testing procedure.

Figure 1: Lights out testing when the patient is in a brightly lit (equatorial) room. Muscles are tested while patient's eyes are closed and covered.

Discussion

This is where Chiropractic clinical practice and research really shines in the world of modern therapeutics. One of the most common effects of a cranial stress pattern, whether the cause is trauma, infection, poor nutrition, is a functional compression of the vagus nerve at its exit from the skull just behind the jaw joints at the occipitomastoid sutures. Reduction of this cranial stress pattern provides instant up-regulation of the functional deficits created by the vagus nerve dysfunction.

It is part of the reset button Chiropractic provides from allostatic load to allostasis. The better the vagal cranial nerve's outflow the greater the heart rate variability is as well as the patient's overall health. Because of its vast functional repertoire the vagal nerve is often used, incorrectly, as a synonymous term for the entire parasympathetic nervous system. This is essential for deep, restful sleep.

In some individuals who have body language suggesting endocrine disturbance, a positive MMT global muscle weakness will develop when the lights are turned out, suggesting pineal involvement. The pineal gland (4, 5) is challenged and cranial treatment administered, if necessary. The patient should then no longer weaken with the lights out.

Nutritional supplementation for the pineal gland (the melatonin producing gland) can also be employed when indicated. For instance, when or if the lights out test persists after the Chiropractic cranial correction has been made, we will ask the patient to chew or suck on the pineal gland/insomniac's specific nutrition and re-examine the muscles which went weak in the darkened clinic room or closed and covered eyes. If these muscles do not then do so, the beneficial effect on muscle strength in our lingual nutritional test will be assumed.

The search to better understand the receptors for taste that effect muscle function is growing across the Chiropractic profession and around the world. Goodheart first made the clinical observation in 1968 that taste stimulation affected muscle function. (9) The descending motor system that controls our muscles and glands begins at the highest level in the motor strip of the cerebral cortex. Just as there is a sensory homunculus representing the body surface, with large areas devoted to the lips and tongue, there is a corresponding motor homunculus with a similar enlargement of the lips and tongue.

This is where nutritional testing occurs in the functional neurology approach of AK. As a result of Goodheart's original finding, many health care professionals in various disciplines worldwide now use this clinical tool (taste stimulation followed by the MMT) as an adjunct for both nutritional assessment and treatment.

History of this procedure in Chiropractic

Goodheart first observed the apparent effect of the pineal gland on body function when a patient who had been treated for headaches and deficient thyroid and adrenal function was allowed to rest on the treatment table before leaving the office. As Goodheart left the room and turned out the light, he observed that the patient's foot rotated laterally. He turned the light back on, returned the foot to its original position, and once more turned the light out; the patient's foot again involuntarily rotated laterally.

Pursuing this further, Goodheart manual muscle tested the *sartorius* muscle with the light on, and again with it off. When the light was off, the *sartorius* muscle weakened; it was strong with the light on. Because of the relationship of the pineal gland to light, Goodheart asked the patient taste pineal substance. While the substance was in the patient's mouth, the muscle did not weaken when the light was turned off.

Over the past 50 years, AK chiropractic physicians have found that many adrenal related, pineal related, and biopsychosocial emotional stress related nutrients can also improve this lights-out testing scenario and the symptomatic picture for patients with sleep disorders and insomnia. Goodheart specifically found a cranial dysfunction that was almost always associated with this pattern of testing. Treatment of this dysfunction eliminated this problem.

A postulated 'How':

Can a chiropractic cranial diagnosis and correction improve insomnia?

There are twelve pair of nerves that come directly out of the cranium that have various functions. One of these is called the vagus nerve. This nerve is thought to be responsible for the majority (75%) of the parasympathetic nervous system. This is not just a nerve, but is actually a complex of nerve centres. Derived from the Latin name for 'wanderer', the vagus nerve controls the function of the digestive tract from the mouth to the first half of the large intestine. Not only does it create our ability to eat, digest, assimilate and detoxify, but to also excrete and slow down the heart's rate known as the vagal brake. The vagal brake slows the heartbeat which typically speeds up with inspiration. The stronger the vagal outflow, the greater the heart rate variability is and the better the person's overall health. Because of its vast functional repertoire it is often used, albeit incorrectly, as a synonymous term for the entire parasympathetic system. This makes the body more anabolic, which is the rest and repair state of the organism.

Chiropractic clinical observation for nearly 45 years has shown that the normal function of the motion of the cranial vault up-regulates the function of the neuroendocrine axis, or where the brain folds in upon itself and becomes the endocrine system. This takes place in the middle of the brain and includes the pineal, pituitary, and hypothalamus glands. These glands are known to be the body's master endocrine control centre. For example they control our sleep-wake cycles (the circadian rhythms), reproductive cycles, stress-handling capabilities, and our patients' structural integrity. In fact, it has been stated that the neuroendocrine axis has a direct influence on one hundred physiological set points, including our perception of pain, body temperature, and clotting characteristics to name a few. We have found that up-regulation of this functional area is key to making many of the other body corrections hold firmly.

In the middle of the brain, the brain folds in upon itself and forms the endocrine system whose function is up-regulated by this micro-movement/rhythm of the cranial-sacral system. It is our opinion that with the unlocking of the cranial system, and the subsequent up-regulation of the hypothalamus (which functions as the dipstick that monitors our internal temperature regulation) patients' functional endocrine problems can be dramatically improved.

Cranial correction for pineal gland dysfunction and insomnia

The two corrections just discussed (cranial and nutritional) have been very effective on literally hundreds of patients over the years in the author's practice and as reported by Applied Kinesiologists around the world for 50 years. (6 - 13)

Shaun Craig reported on an 18-year-old male with major cranial and nutritional deficiencies complaining of life-long insomnia who recovered completely after 4 applied kinesiology cranial and nutritional treatments. (10) This patient found he no longer stayed awake all night, and he began to get the healing benefits of sleep. He awoke with energy and no longer had many of the health problems associated with insomnia.

Kharrazian reported that insulin resistance and blood sugar handling disorders affect 25-35% of western populations, and contribute to insomnia, sleep apnea, diabetes, cardiovascular disease, hormone metabolism disorders, obesity, and certain types of cancer. This problem is multi-factorial, affects many insomnia patients, and so it is naïve to think of adrenal and insulin related

problems as having a single origin and a single cure. (11) But they too must be addressed by the chiropractic physician who seeks to help these patients.

Cuthbert et al, in an applied kinesiology analysis of over 100 patients with adrenal stress disorder, found that the majority of them had abnormal circadian rhythm of cortisol where it's low in the morning and high at night. (12) This physiological abnormality is characterised by low energy in the morning which gradually rises, being highest late at night; then patient then retires, but cannot sleep; after getting to sleep, the patient sleeps fairly well but awakens exhausted.

For many years in Colorado, the author at the Chiropractic Health Center in Pueblo used the pencil-and-paper and validated Epworth Sleepiness Scale, to measure sleep quality outcomes and daytime sleepiness in patients treated in this way. Experience showed that our AK approach to insomnia improved the patients' insomnia substantially as measured by this instrument. (13(

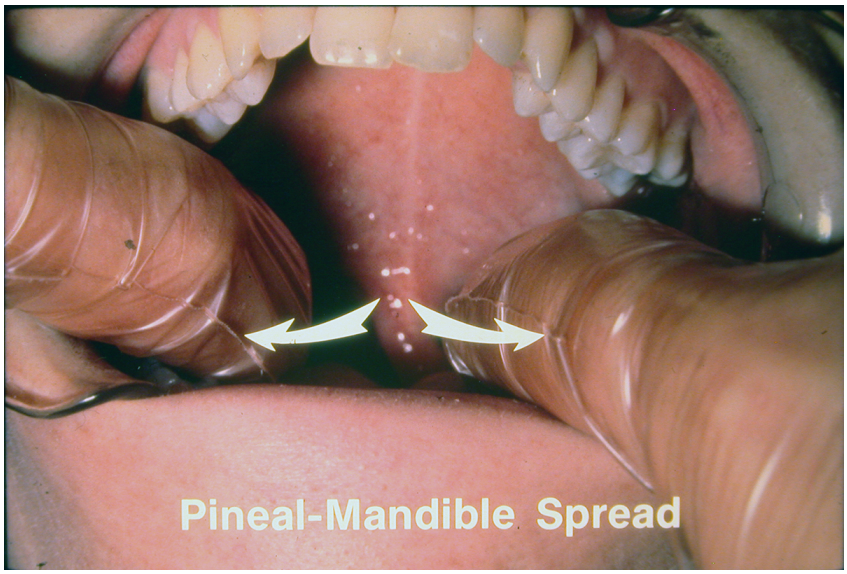
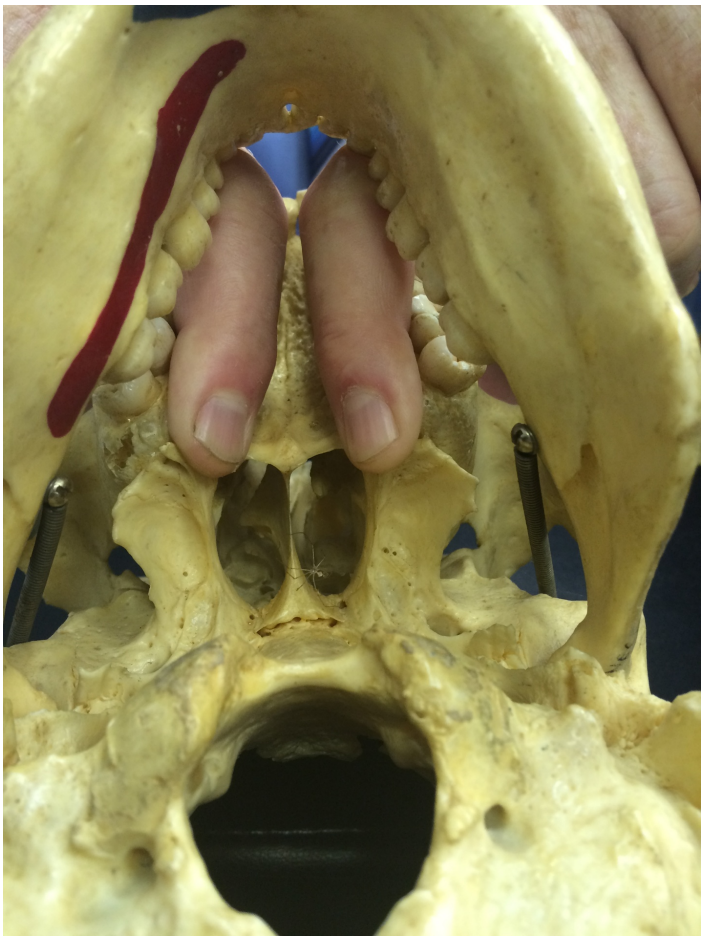


Figure 2: Gloves are worn for the pineal-mandible spread.

Figure 3: The contacts for the pineal-mandible spread.



Epworth Sleepiness Scale

Name: _____

Date: _____

Your age: (Yr) _____ **Your sex:** ❑ Male ❑ Female

How likely are you to doze off or fall asleep in the situations described below, in contrast to feeling just tired?

This refers to your usual way of life in recent times.

Even if you haven't done some of these things recently try to work out how they would have affected you.

Use the following scale to choose the most appropriate number for each situation:-

0 = would never doze
1 = Slight chance of dozing
2 = Moderate chance of dozing
3 = High chance of dozing

Situation	Chance of dozing
Sitting and reading	
Watching TV	
Sitting, inactive in a public place (e.g. a theatre or a meeting)	
As a passenger in a car for an hour without a break	
Lying down to rest in the afternoon when circumstances permit	
Sitting and talking to someone	
Sitting quietly after a lunch without alcohol	
In a car, while stopped for a few minutes in the traffic	
Total	

Score:	
0-10	Normal range
10-12	Borderline
12-24	Abnormal

Tips on sleep hygiene

Coffee, as well as less obvious caffeine sources such as soft drinks, chocolate, coffee-flavoured ice cream, hot cocoa, and tea, should all be restricted. Alcohol also produces sleep-impairing effects. In addition to causing the release of adrenaline, alcohol impairs the transport of tryptophan into the brain and, because the brain is dependent upon tryptophan as a source for melatonin and her sister serotonin as Goodheart used to say (and an important neurotransmitter that initiates sleep), alcohol disrupts melatonin and serotonin levels.

Our experience in clinical practice is that nocturnal hypoglycaemia (low night-time blood glucose level) is an important cause of insomnia too. A common breakfast around the world is oatmeal, cereal, or pancakes, all high carbohydrate starts to the day that will send blood sugar and insulin levels skyrocketing. Typical lunches include plenty of bread, pasta, or rice, triggering another major spike in blood sugar. Dinner is not only equally as starchy, but also usually followed by dessert.

Daytime snacks include sweetened coffee drinks and sweets. Many people suffer from faulty glucose metabolism, either hypoglycaemia or pre-diabetes, because they over-eat refined carbohydrates. Good bedtime snacks to keep blood sugar levels steady throughout the night should be proteins, particularly strips of turkey as this contains abundant tryptophan. The addition of chromium, vanadium and alpha-lipoic acid (often combined in one pill) to a daily supplement-regimen can relieve hypoglycaemic stress in pre-diabetic patients. (14)

Patients should do the easy things first in order to sleep better. Establish consistent times to sleep and wake; use the bedroom only for sleep and sex; remove the TV; finish eating, drinking, coffee or alcohol at least 3 hours before sleep; do yoga or meditation before bed; a walk at sunset can unwind the mind and body and improve blood sugars; turn the clock away from view; and make sure your sleep position is comfortable and ergonomic.

Goodheart also suggested that for patients who cannot fall asleep, that a test for calcium deficiency may help. For patients who cannot stay asleep, a vitamin B deficiency might be checked for. Goodheart also observed that a negative ion generator can aid some people to sleep. This is especially applicable to those who are weather sensitive. Checking for dehydration is a good idea, and if found the patient should increase water consumption during the day but not after 6pm at night.

Effective treatment that corrects insomnia involves identifying and addressing the causes. Needless to say, an overloaded nervous system due to cranial, biomechanical and biochemical disturbances should be found and fixed.

Applied kinesiology's testing methods improve the selection and administration of cranial therapeutics and nutritional adjuncts for insomnia. Supplementation with pineal substance or tryptophan (the amino acid precursor to melatonin) or ashwagandha (widely available in Asia), (16) usually one tablet three times per day, and correcting the characteristic cranial or mandibular faults have been effective for many patients with insomnia over the years. (9) These corrections immediately correct the '*pathognomic sign of insomnia*' (weakening with lights-out testing in the office), and also the related insomnia in the subsequent week usually.

These procedures and their neurophysiology and outcomes from case reports are described with supportive research in the AK Chiropractic literature cited. (6 - 12)

Conclusion

A common and often debilitating symptom experienced by Chiropractic patients around the world is erratic sleep patterns and insomnia. Recovery and repair from chronic and acute pain and illness both require restful sleep and relaxed rest. Being deprived of these pleasures causes a

great deal of stress, anxiety, and exhaustion to already overloaded body systems for chiropractic patients. Sleep regulating centres in the brainstem process information from different parts of the body, muscle, joint, and organ receptors, as well as from higher cortical levels to either help the patient induce sleep, or encourage alertness and wakefulness as the sleep regulating centres fail to turn off at bedtime.

Further investigation of these methods of treatment and larger patient cohorts in controlled clinical trials would be of value with concurrent biochemical, EMG, and observational sleep monitoring of the patients treated. Severe insomnia has extreme costs to both the individual and to society at large.

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He has served on the Board of Directors of the *International College of Applied Kinesiology USA*. Dr Cuthbert is the author of three textbooks on applied kinesiology (in addition to 15 *Index Medicus* and over 50 peer-reviewed research papers) on Chiropractic approaches to functional health problems. *Images courtesy of David S. Walther, DC, with permission.*

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