ALL IN ONE DAY SEMINAR, CLINICAL EVIDENCE BASED PRACTICE OF CHIROPRACTIC: ETHICS & LAW-CURRENT LAWS, REHABILITATION, AND CHIROPRACTIC ADJUSTIVE TECHNIQUE.

Presented by
Mark Cymerint D.C.

<u>California Approval Numbers:</u>
CA-D-24-06-05007 Rehabilitation
CA-D-24-06-05009 Ethics & Law Current Laws
CA-D-24-06-05008 Adjustive Technique

<u>Arizona Approval Number:</u>
AZCE23493
“All In One Day, Clinical Evidence Based Practice of Chiropractic: Principles of Practice, Ethics, and Chiropractic Adjustive Technique.”

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V. CHIROPRACTIC ADJUSTIVE TECHNIQUE

A. DIVERSIFIED POSTURE EVALUATION AND MANUAL DEMONSTRATION OF POSTURAL PATTERNS
B. CHIROPRACTIC BIO-PHYSICS AND DIVERSIFIED POSTURE CORRECTION
    a) Neurological proprioceptive stimulation introduced
    b) Sleep posture
C. DIVERSIFIED PEDIATRIC EVALUATION AND ADJUSTIVE PROCEDURES
    a) Posture evaluation and demonstration of the pediatric patient.
    b) Diversified / biophysics manual adjustive procedures. Exercises for pregnancy.
D. INTRODUCTION TO DIVERSIFIED MYOFASCIAL RELEASE TECHNIQUES, INCLUDING PIRIFORMIS SYNDROME AND FROZEN SHOULDER SYNDROME.
E. POSTURE AND SYSTEMIC HEALTH. A LITERATURE REVIEW
    a) A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

CEREBELLUM & POSTURE

- **The cerebellum increased in size over the course of vertebrate evolution. The large size in the human brain coincides with the need for synergy of muscles, especially for the maintenance of the erect posture.**
  - The Human Nervous System: An Anatomical viewpoint. Murray Barr and John Kieman.

- **The cerebellum is responsible for the regulation and control of muscular tone, the coordination of movement, and the control of posture and gait.**
  - Principles of Neurology. Raymond Adams, Maurice Victor, Allan Roper, McGraw-Hill 1997

- **The cerebellar input originates in proprioceptors and exterocepetors and is conveyed by massive afferent channels like the spinocerebellar, cuneocerebellar and vestibulocerebellar tracts. This input provides raw data about the condition and interrelationships of parts of the skeletomuscular system and of the body as a whole.**

DIVERSIFIED POSTURE EVALUATION AND MANUAL DEMONSTRATION

Patient standing in front of a mirror with eyes closed.

- *Head in extension then flexion, then back to where they think its center. Hold for 5 seconds.*

-- *Head/ Neck Lateral Translation or Deviation*
Main listing usually has symptoms associated with this listing.

-- *Head Tilt Right/Left (most common listing you will see)*

-- *Head Rotation: Right/left (may have symptoms)*

-- *High Shoulder right/left (lowest on priority list)*

DIVERSIFIED POSTURE EVALUATION AND MANUAL DEMONSTRATION *(CONTINUED)*

Analyze Lower Torso Posture

- Lateral Hip Translation

(The deviation is toward the high hip side. Pants pocket may appear higher)

- Forward Hip Rotation

(Pocket is rotating forward)

Lateral Posture

- Forward Head Posture of the shoulders and body
- Rounded forward shoulders
- Dowager hump- T1/ T2 area
- Hyperlordosis = increased lumbar curve

INTRODUCTION TO CHIROPRACTIC BIO-PHYSICS AND DIVERSIFIED POSTURE CORRECTION

1. Mirror image setup, (opposite posture that the patient presented.)

2. Super stress posture into the opposite pattern (stress posture into passive range of motion.)

3. Stimulate areas of large proprioceptive beds with a high speed, low force instrument or hand.(Lower forces are preferred.)

Ex.) In the upper torso regions, stimulate lightly on skin, anywhere in upper cervical area.

Ex.) For lower torso regions, stimulate iliac crest or SI Joints

INTRODUCTION TO CHIROPRACTIC BIO-PHYSICS AND DIVERSIFIED POSTURE CORRECTION (CONTINUED)

4. Stimulate other proprioceptive areas to reinforce cerebellar learning.

   Ex) Shoulder paraspinals, rhomboids, achillies tendon.

5. Adjust posture in standing position if possible or lying down or sitting.

6. Deviations/Translations Cervical/Lumbar

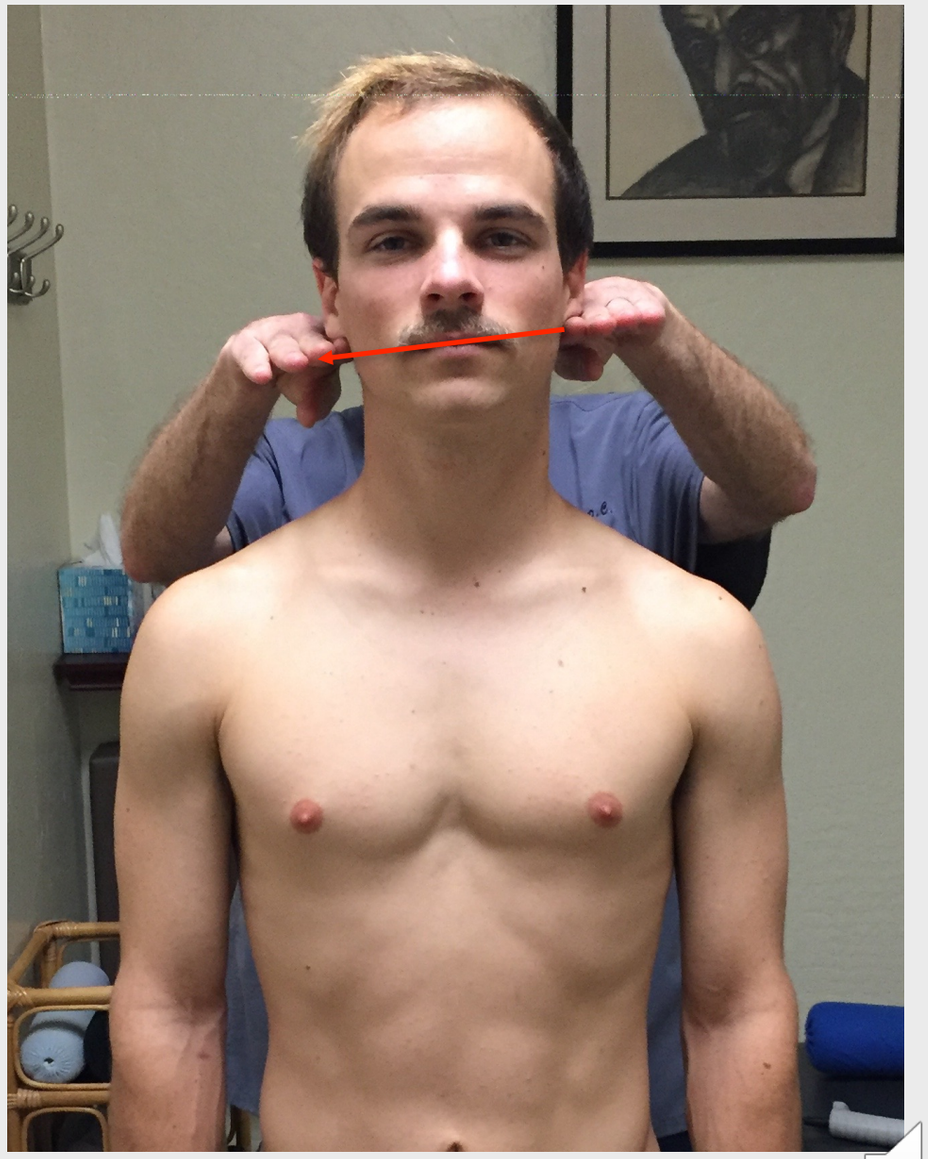
   Lying down with posture blocks (preferred set up).

7. Always balance posture last.

CHIROPRACTIC BIO-PHYSICS AND DIVERSIFIED POSTURE CORRECTION: A) NEUROLOGICAL PROPRIOCEPTIVE STIMULATE INTRODUCED (MIRROR IMAGING IN A-P POSITION)

Is when you put the patient into the opposite postural pattern than what the patient originally presented to you with when they came in. This process is called **Mirror Imaging**. It is also the set up for your posture correction.

Before
Right high
Shoulder



Before
Right head
tilt

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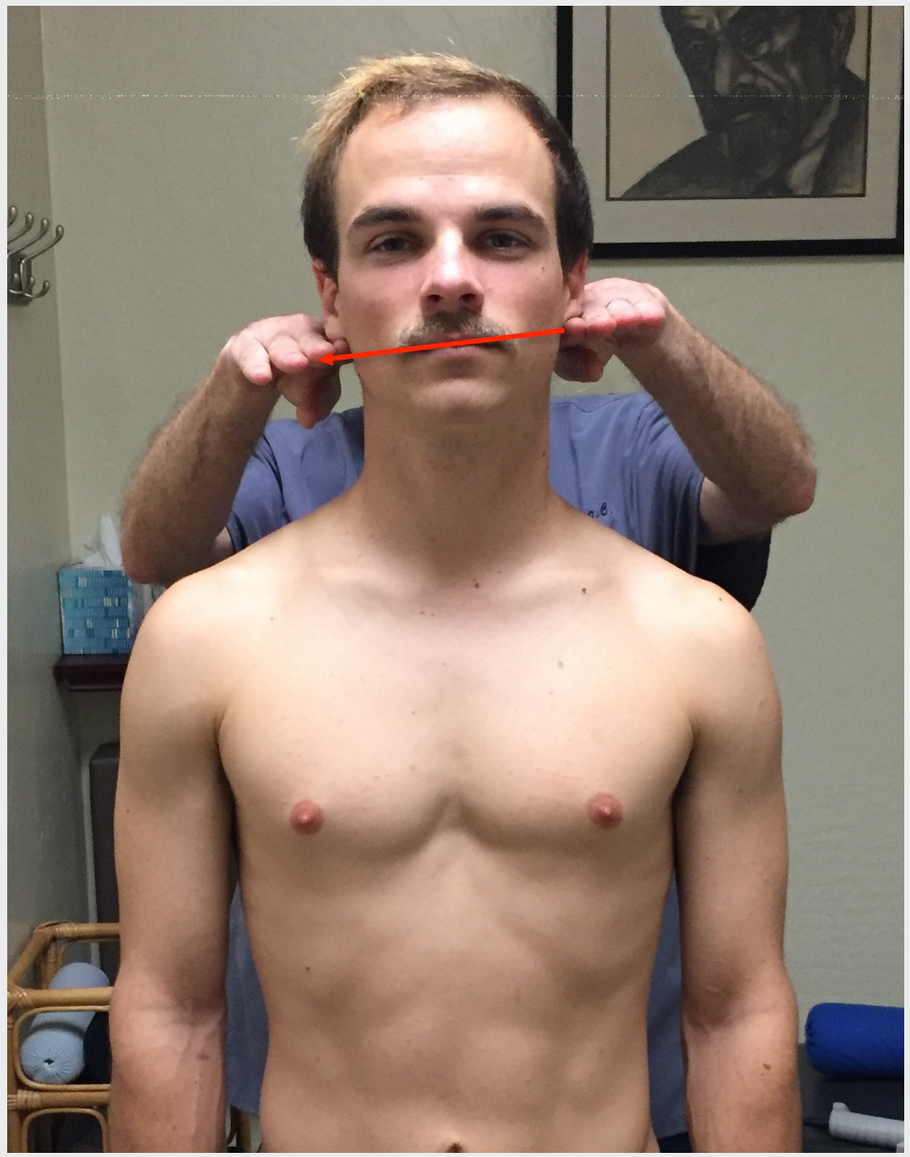


Before
Right head
tilt

(CONTINUED) MIRROR IMAGING IN A-P POSITION

Place patient in the opposite postural pattern with which they presented.

Right shoulder down

Tilt head to the left

(CONTINUED) MIRROR IMAGING IN A-P POSITION

Place patient in the opposite postural pattern with which they presented.

Right shoulder down

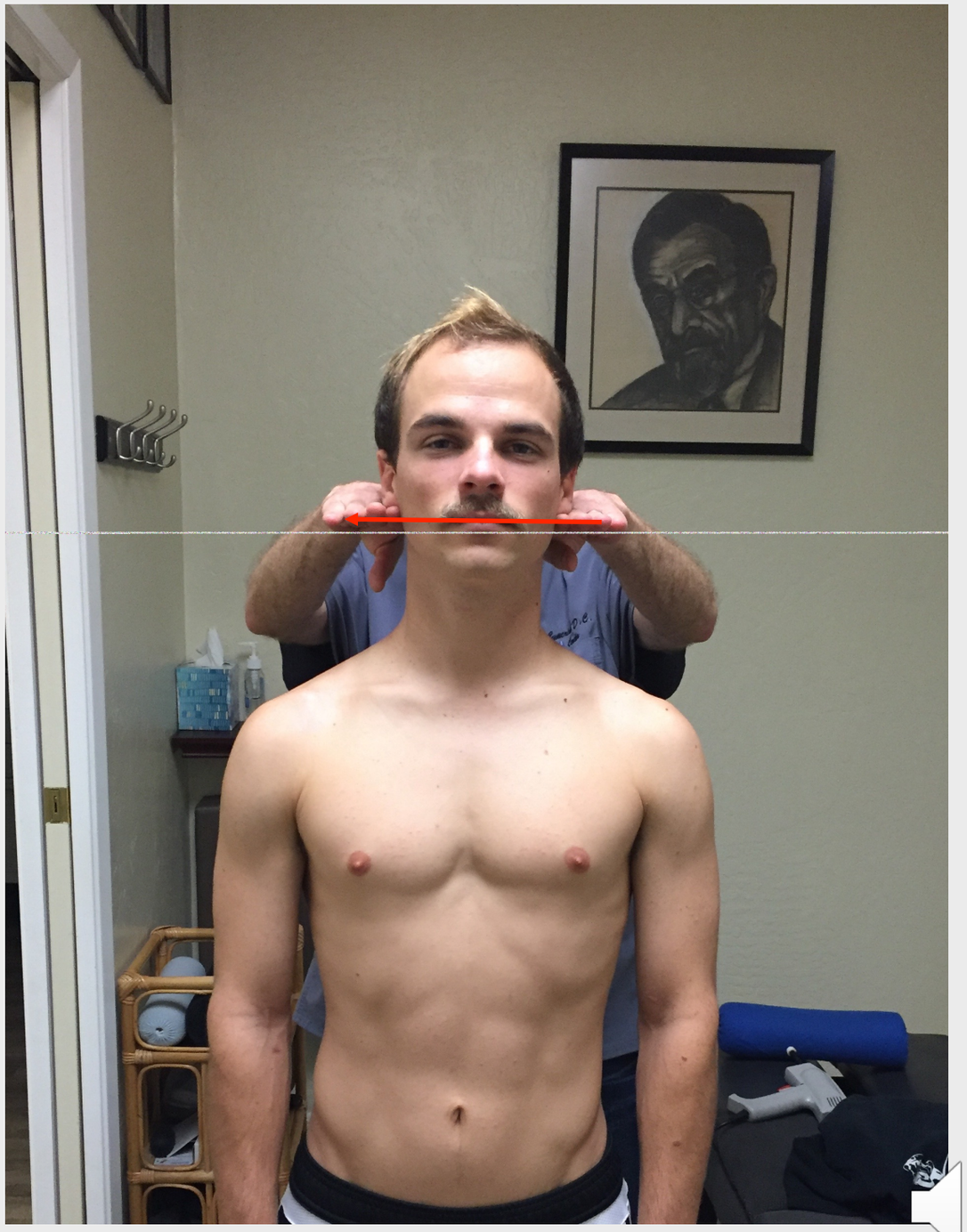
Tilt head to the left

(CONTINUED) MIRROR IMAGING IN A-P POSITION

After postural balancing.

After Shoulders level

After Head Level

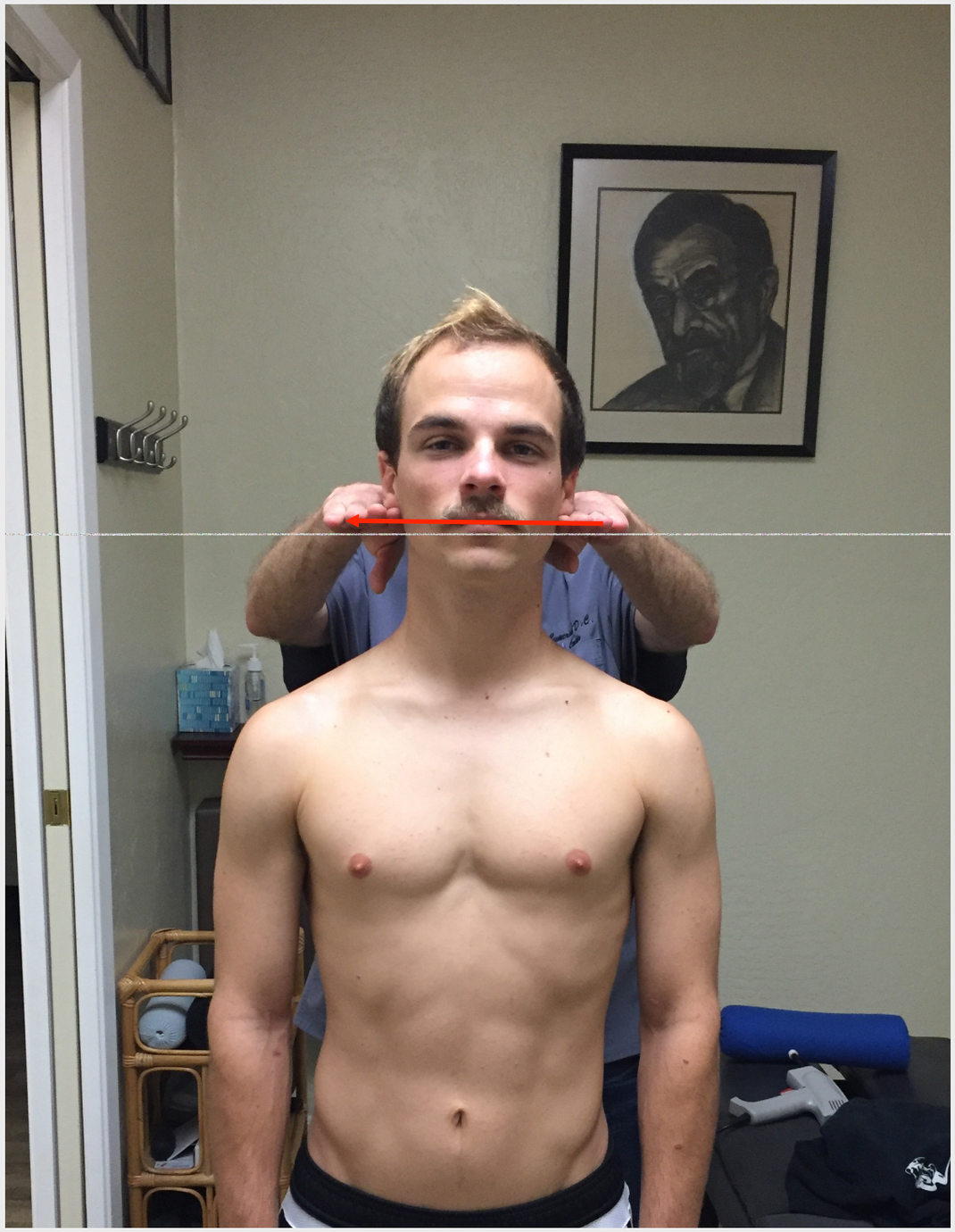


(CONTINUED) MIRROR IMAGING IN A-P POSITION

After postural balancing.

After Shoulders level

After Head Level



CHIROPRACTIC BIO-PHYSICS AND DIVERSIFIED POSTURE CORRECTION: A) NEUROLOGICAL PROPRIOCEPTIVE STIMULATE INTRODUCED (LATERAL POSITION)

Patient presented with forward head carriage, rounded-forward shoulders, and slight *Dowager Hump.*

From the position that patient went into prior to posture correction:

A. Rotate shoulders all the way back, past neutral
B. Retract head straight back, as far as patient can go.
C. Stimulate with high-speed, low-force instrument areas of largest proprioceptive beds, including upper-cervical region and shoulder paraspinal region.

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(CONTINUED) MIRROR IMAGING IN LATERAL POSITION CORRECTION

With the patient in the opposite/mirror-image posture, the correction includes:

A. Stimulating the upper-cervical region with a high-speed, low-force impulse that would communicate the corrected change through the proprioceptive neurological network and the cerebellum of the brain.

B. In the mirror-image posture, rotate shoulders and head posterior, and stimulate the paraspinal muscles, rhomboids, and even the spinus process at C7-T1.

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BALANCE CONTROL IN UNSTABLE SITTING IN INDIVIDUALS WITH AN ACUTE EPISODE OF LOW BACK PAIN.

Date & Journal: Gait Posture . 2022 Jun.

Abstract

Background: Low back pain (LBP) is associated with altered postural control, mostly observed at later stages in the LBP trajectory. It is unclear whether postural control differs in the acute phase of LBP.

Research question: Is postural control different in the acute phase of LBP (<2 weeks) and do differences depend on pain intensity, psychological features and/or availability of vision to control posture?

Results: Center of Pressure (CoP) displacement and critical point coordinates (time and distance where CoP diffusion rate or spread slows) were larger in LBP than pain-free controls independent of balance condition. Long-term diffusion rate was greater in LBP than controls with eyes closed. CoP velocity measures (RMS, short term diffusion rate) were not different between groups. Pain intensity and psychological features were not linearly related to balance performance in participants with acute LBP. Higher pain catastrophizing was associated with touching the safety bar.

van den Hoorn W, Meroni R, Klyne DM, Alshehri MA, Hodges PW. Balance control in unstable sitting in individuals with an acute episode of low back pain. Gait Posture. 2022 Mar 24;95:15-21. doi: 10.1016/j.gaitpost.2022.03.014. Epub ahead of print. PMID: 353

POSTURAL BALANCE AND GAIT PARAMETERS OF INDEPENDENT OLDER ADULTS: A SEX DIFFERENCE ANALYSIS

Date & Journal: Int J Environ Res Public Health . 2022 Mar 29.

Abstract

Postural balance and gait are important factors in the functional status of older people; however, few studies have addressed differences by sex. The objective of this study was to analyze the postural balance and temporal-spatial parameters of gait in independent older adults by sex. A cross-sectional study was conducted. Thirty-eight independent older women (69 ± 5 years), and 33 men (71 ± 5 years) were evaluated. The postural balance test with open and closed eyes was performed on two surfaces (hard/soft) on a force platform. Gait was recorded with cameras to analyze cycle duration and speed, step length, stride length, and foot clearance. The area of postural balance was greater in men in all tests (*p* < 0.001). Foot clearance height and cycle duration were lower in women (*p* < 0.05). Men showed a negative correlation between the area of balance and gait parameters. In women, a positive correlation was observed between foot clearance and balance with eyes closed. The postural balance and gait suggest discrepancies by sex, showing that older men behave differently according to the requirement of the motor task compared to women. These findings suggest being corroborated in more complex studies in the future.

Espinoza-Araneda J, Bravo-Carrasco V, Álvarez C, Marzuca-Nassr GN, Muñoz-Mendoza CL, Muñoz J, Caparrós-Manosalva C. Postural Balance and Gait Parameters of Independent Older Adults: A Sex Difference Analysis. Int J Environ Res Public Health. 2022 Mar 29; I

HIGH-VELOCITY, LOW-AMPLITUDE SPINAL MANIPULATION TRAINING OF PRESCRIBED FORCES AND THRUST DURATION: A PILOT STUDY.

DATE & JOURNAL: J CHIROPR EDUC. 2019 APR 5

- OBJECTIVE: High-velocity, low-amplitude spinal manipulation (HVLA-SM) may generate different therapeutic effects depending on force and duration characteristics. Variability among clinicians suggests training to target specific thrust duration and force levels is necessary to standardize dosing. This pilot study assessed an HVLA-SM training program using prescribed force and thrust characteristics.

- RESULTS: Error from peak force target, expressed as adjusted mean constant error (standard deviation), went from 107 N at baseline, to 0.2 N immediately after training, and 32 N (53) 8 weeks after training for the 350 N target, and 63 N (148), -6 N (58), and 9 N (87) for the 550 N target. Student median values met thrust duration target, but doctors' were >150 ms immediately after training.

- CONCLUSION: After participation in an HVLA-SM training program, participants more accurately delivered two prescribed peak forces, but accuracy decreased 1 week afterwards. Future HVLA-SM training research should include follow-up of 1 week or more to assess skill retention.

Shannon ZK, Vining RD, Gudavalli MR, Boesch RJ. High-velocity, low-amplitude spinal manipulation training of prescribed forces and thrust duration: A pilot study. J Chiropr Educ. 2020 Oct 1;34(2):107-115. doi: 10.7899/JCE-18-19. PMID: 30951380; PMCID: PMC

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CORRECT POSTURE FOR SLEEP

MORE THAN

70 MILLION

PEOPLE IN THE U.S. & CANADA ARE AFFECTED BY A SLEEP PROBLEM

→ SLEEP & BRAIN HEALTH → QUALITY OF SLEEP → QUALITY OF LIFE → DECREASED IMMUNE FUNCTION

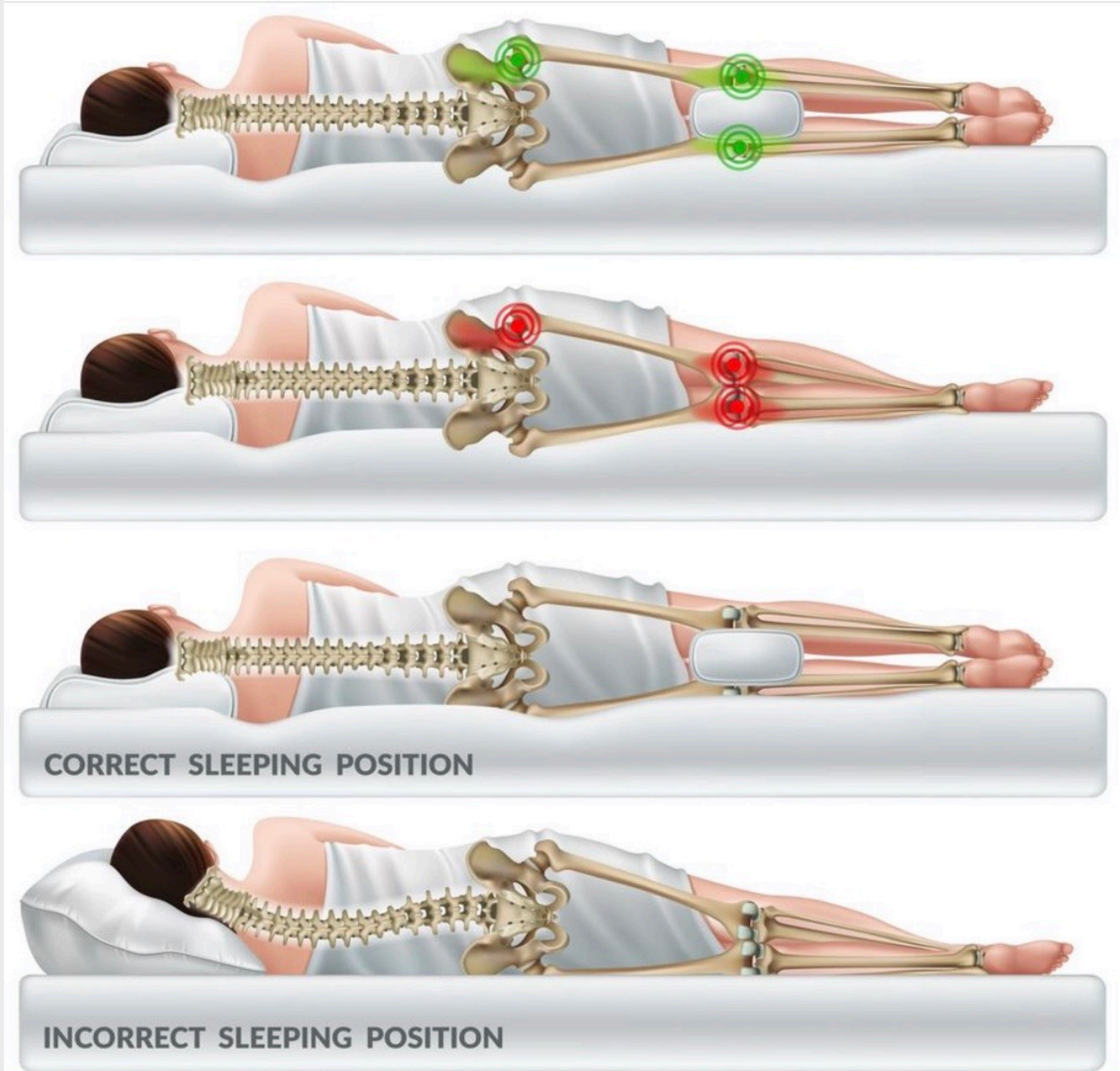
FACTS ABOUT SLEEP

Sleep is important for neural development, learning, memory, emotional regulation, cardiovascular and metabolic function, and cellular toxin removal. (1)

Sleep posture, mattress, and pillow all contribute to over all quality of sleep.

Not getting enough sleep can cause excessive drowsiness, which as been associated with an increased risk of work-related injuries (1)

In just 24 hours without sleep, humans experience dramatically decreased metabolic activity in the brain, decreased release of growth hormone, and decreased immune system function.


CORRECT SLEEPING POSITION
INCORRECT SLEEPING POSITION

BAD SLEEPING HABITS IN INFANTS: RISK FACTOR FOR SUDDEN INFANT DEATH SYNDROME. PILOT STUDY

Date & Journal: Rev Chil Pediatr . 2020 Aug.

Abstract

Objective: To describe the sleeping position of a group of infants and the risk factors associated with sudden infant death syndrome (SIDS).

Subjects and method: Prospective pilot study, including infants < 45 days of life in well-child care visits at a medical center.

Results: We included a sample of 100 infants between 16.78 ± 12.88 days old (57% girls). Mothers were the main information source (84%). 79% of the infants slept in supine position, 19% slept on their sides, and 2% in prone position. Regarding the place where the infants slept, 66% did in their crib in the parents' room and 31% slept in parents' bed. 74% of infants fell asleep while being fed. 28% of infants were exposed to passive smoking at home. 91% of parents were informed about safe sleep positions, reporting that pediatricians were the main source of information (54%).

Conclusion: We found a high percentage of infants < 45 days of life who slept in an unsafe position, and frequently co-sleep with their parents. Thus, it is important to implement local SIDS prevention campaigns to reinforce safe infant sleep.

Sánchez T, Peirano D, Pipino C, Brockmann PE. Malos hábitos de sueño en lactantes: Factor de riesgo para síndrome de muerte súbita del lactante. Estudio piloto [Bad sleeping habits in infants: Risk factor for sudden infant death syndrome. Pilot study]. Re

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- 1) Mukherjee S, Patel SR, Kales SN, et al. An official American thoracic society statement: The importance of healthy sleep. Recommendations and future priorities. Am J Respir Crit Care Med. 2015; 191(12): 1450-8. doi: 10.1164/rccm.201504-0767ST.
- 2) Journal of the ACA [serial online]. Proper Sleep Ergonomics. 2011; 48(4): 1-2. Available from: CINAHL Plus with Full Text. Accessed August 24, 2016.
- 3) Sezgin M, Hasanefendioğlu EZ, Sungur MA, et al. Sleep quality in patients with chronic low back pain: A cross-sectional study assessing its relations with pain, functional status and quality of life. J Back Musculoskelet Rehabil. 2014; 28(3): 433-41. doi: 10.3233/BMR-140537.
- 4) www.mayoclinic.com
- 5) www.sleepfoundation.org
- 6) www.aasmnet.org

EXAMPLES OF SOME OF MY PREVIOUS PROFESSIONAL PATIENTS


Rams
84
LOS ANGELES RAMS
JULY 27
FAMILY AND FRIENDS TENT

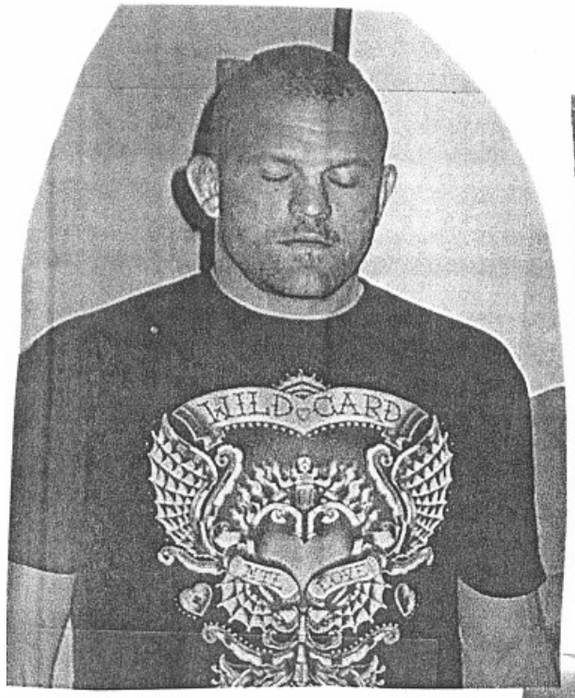

Rams
LOS ANGELES RAMS

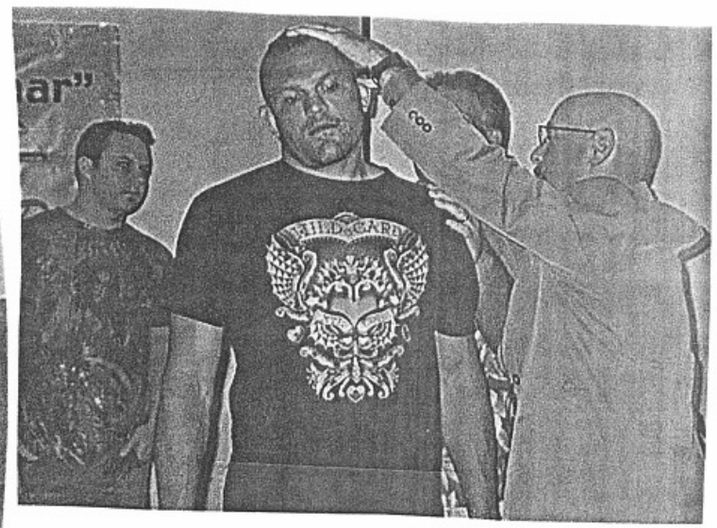

Rams
54
LOS ANGELES RAMS
LOS ANGELES RAMS
JULY 23, 2018

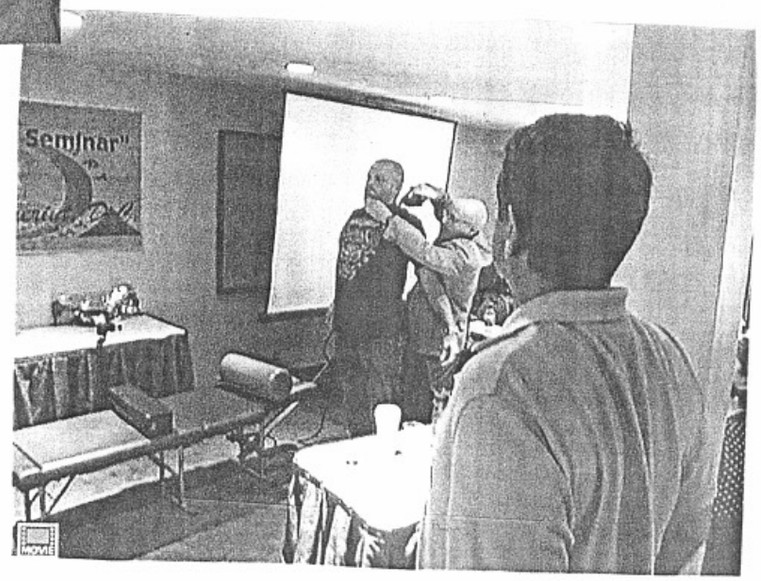

RAMS
Rams


LOS ANGELES RAMS
American Airlines

THE “ICEMAN” CHUCK LIDDELL GETS HIS POSTURE CORRECTED BY MARK CYMERINT D.C. IN AUGUST 2008.







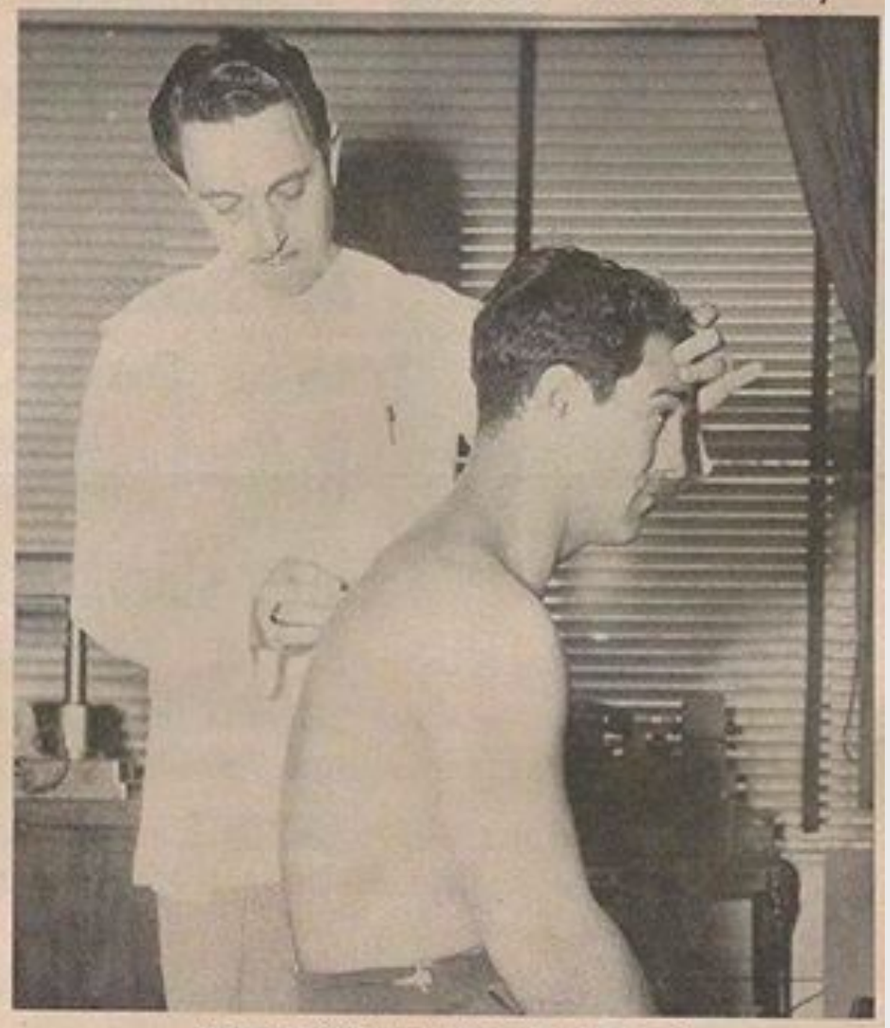
ROCKY MARCIANO, HEAVYWEIGHT BOXING CHAMPION, RELIES ON CHIROPRACTIC

The obvious aspiration of every prizefighter is to attain the top spot in his particular class. To reach this goal, perfect physical fitness is a must. Immediate responsive reflexes, coordination, and stamina are the result of proper training, good habits, a well-balanced diet, and last but certainly not least, a spine free from nerve interference as the result of bony encroachment.

Rocky Marciano, world's heavyweight champ, exemplifies near perfect physical fitness. This, no doubt, is attributive to his willingness to take all measures necessary to keep him in the optimum of health. He does not smoke or drink and shuns devitalized and demineralized foods. The fact that the "Rock" receives his periodic adjustment indicates that he appreciates the efficacy of Chiropractic as one of the most important factors in the maintenance of health.

E. J. CREALESE, D.C.

From "Chiropractic Institute News of New York."



Heavyweight Champion Rocky Marciano and Chiropractor Edward J. Crealese of Brockton, Mass.

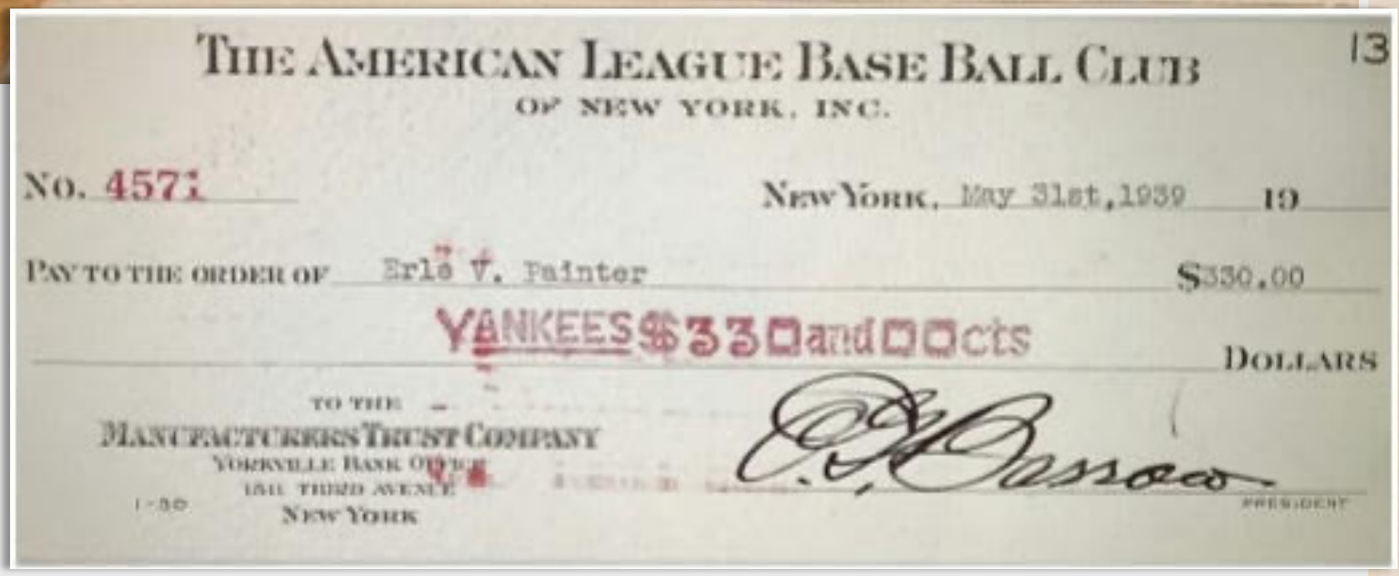
Chiropractic Helps Babe Ruth and Other Yankees Keep in Perfect Physical Condition

EVERY baseball fan will of course immediately recognize "Babe" Ruth in the picture reproduced above. But the gentleman at the extreme left, in the process of applying a bandage, is not so well known to the general public. In Chiropractic circles, however, he is quite as prominent as is the Bambino in the baseball world.

We present, Erle V. Painter, D. C., trainer of the New York Yankees, and the man largely responsible for the excellent physical condition of this fine team. By applying the principles of modern Chiropractic, in treating Ruth, Dr. Painter has amazed the wiseacres of the diamond, who years ago opined that "The Babe" was definitely "out of the running." The results he has accomplished with other members of the team have been almost equally remarkable.

Although he never clouts one over the fence, or aids in a sensational double play, Erle Painter is generally recognized as one of the most valuable men on the Yankee pay roll.

Dr. Painter is one of a growing group of enlightened Chiropractors who place much stress upon preventive counsel. As a general practitioner, he has devoted much time to teaching patients how to relax and rest; what to eat; how to walk correctly; the proper posture to maintain, and other essentials of health conservation. He conceives the Chiropractor's duty to embrace not only the correct adjustment of the spine, but also to educate the patient in maintaining a high standard of health. And this creed is heartily endorsed by Chiropractors of high standing throughout the country.



THE AMERICAN LEAGUE BASE BALL CLUB
OF NEW YORK, INC.

13

No. 4571 NEW YORK, May 31st, 1939 19

PAY TO THE ORDER OF Erle V. Painter $330.00

YANKEES $330 and 00 cts DOLLARS

TO THE MANUFACTURERS TRUST COMPANY
YORKVILLE BANK OFFICE
1511 THIRD AVENUE
NEW YORK

1-30

PRESIDENT

REGGAE/ POP ARTIST
ANUHEA
GETTING ADJUSTED

REGGAE/ POP ARTIST
MATISYAHU
GETTING ADJUSTED

DODGERS GETTING ADJUSTED


Do-dgers


Dodgers
8
NEW ERA


THE SKELETAL SYSTEM


Dodgers


THE SKELETAL SYSTEM

PRO SURFERS GETTING ADJUSTED

PRO SURFERS GETTING ADJUSTED

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    a) A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

DIVERSIFIED Biomechanics ADJUSTING MANUAL MOVES

ADJUSTING MOVES
PRESENTED BY
MARK A CYMERMAN D.C.
(714) 707-5785

#1 move:

-Acute angle between the pelvis and the lumbar spine.
-The objective is to open this angle up by bringing the high pelvis down, away from the spine.
-This move is a traction-type force, which takes the pressure off the spine.

To Adjust: Side posture, with slant board elevated. Superior arm is an "L", inferior arm is a "Y". Bring inf. shoulder down board as far as possible. The high pelvis (#1) is up. Pre-stress the entire pelvis by bringing the inf. pelvis up as far as possible. The sup. pelvis down as far as possible. Make sure there is little lumbar spine rotation before thrusting. Thrust sup. to inf., not down! Block patient's arms with stabilization hand, as correction hand drives the iliac crest toward their feet. Breathing instructions: inhale, exhale and thrust.

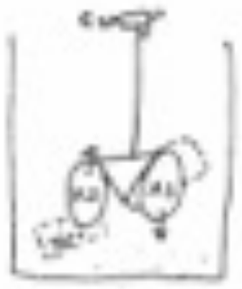
#3 move:

-Obtuse angle betw the pelvis and lumbars.
-Objective is to close this angle by bringing the low pelvis up.
-This is a compression-type force, which is contraindicated with any type of lumbar lesion, i.e., lumbar disc protrusion.
-This move does the same job as the #1, except from the opp. side.

To adjust: Same position as the #1, except the low pelvis is now the sup. pelvis. Pre-stress the inf. pelvis by pulling it down as far as possible and pushing the the #3 pelvis up toward the spine as far as possible. The thrust is inf. to sup., not down! Breathing is inhale, hold, and thrust.

#6 move:

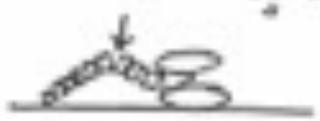
-Sacral base not level, rides up with the AS pelvis.
-Objective is to correct the sacrum by bringing the AS down and the PI up toward the spine.
-This is a compound rotational subluxation and is corrected by rotating both pelvis' back to normal.



To adjust: Pt. prone. 1 block goes under ASIS on AS side. The other block goes under femur head on PI side. Place inf. hand on ischium on AS side, sup. hand on PSIS on PI side. Pt. inhales and exhales 3X as you rock the pelvis in the normal position. Thrust is done when Pt. inhales quickly and holds. Must check C2 rotation after performing the #6. The SP usually rotates toward the high side of the sacrum. Adjust C2.

#4 move:
-lumbar spine scoliosis.
-Objective is to decrease the lateral angle by contacting the apex and bringing it around (the bucket handle theory).
-The angles are determined by lower lumbar line to middle of vertebra at the apex (usually L3), then from apex to lower dorsal.

To Adjust: Side posture like #1 & 3. Apex of lumbars up. Contact apex with inf. hand and pump the lumbars into as much lordosis as they will go. Thrust is P-A, Lat-med, and slightly sup-inf.
*The exact point of contact is the TP's at the apex.



#5 move:
-Retrolisthesis of L5.
-Objective is to take the posteriority out by pushing it anterior.

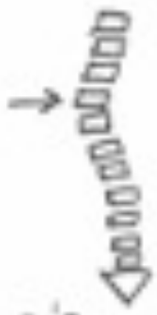
To adjust: Pt. is prone with blocks under both ASIS' to stabilize the pelvis. Contact L5 SP with pisiform and modified toggle. Pump the vertebra 3X as the Pt. inhales and exhales (go down with inhalation and come off with exh; nave Pt. take a fast and hard breath in and hold, thrust at this point.

#2 move:
-Anterolisthesis of L5, or a base posterior sacrum.
-Objective is to take the anteriority out by pushing the sacrum anterior to create enough pressure so L5 is forced posterior.

To adjust: Side posture, with Pt. in a "curled" configuration. Bring shoulder down the slant board as far as possible. Contact the base of the sacrum with the heel of your hand and thrust. Breathe in and hold, then thrust.

#4a move:
-Dorsal spine scoliosis.
-Objective is the same as the #4 in the lumbars.

To adjust: Pt. prone. Contact the SP of the vert that is at the apex of the lateral curvature. This will usually be T7-8. Sup. hand contacts with tip of thumb, inf. hand supports the cervical spine by placing the thumb under occiput to cradle head. This gives you control of the head to move it in any direction you want. To stress the upper dorsals, turn Pt's Head away from contact and thrust when you feel the Pt relax the upper back.
*Can use pisiform to contact SP instead of thumb.



C-D move:
-Apex at cervical-dorsal junction (usually T1-2).
-Objective is to reduce this lateral curve.
To adjust: The same method as #4a.

Standard Posture Analysis: As simple as XYZ

by Mark R. Payne, D.C.

Most of us were taught some rudimentary method of postural analysis in college. Unfortunately, it often consisted of little more than looking for a high/low shoulder or hip, or maybe a bit of head tilt in the frontal view and perhaps a glance at the lumbar lordosis in the lateral plane. Even worse, there has been little or no standardization of the language used to describe aberrations of posture. There exists a real need for an organized approach to postural analysis and a standard way for doctors to record their findings. Fortunately, there has been some good work in this area already published in the scientific literature. All that remains now is for the profession at large to begin incorporating existing methods whenever postural analysis is performed.

In 1974, orthopedic researchers Panjabi, White, and Brand[2] authored a standardized method for describing three dimensional positioning and movement of the human body, using the centuries old, and widely accepted, Cartesian Coordinate System. (Rene Descartes circa 1637) Panjabi, et al., applied three mutually perpendicular axes to the human body, as seen in Fig. 1. Once this was done, it became possible to describe ALL movements of the human frame as either 1) translations along and/or 2) rotations around, one or more of the three axes. This method has since been popularized to some degree by Harrison[3], Troyanovich[4], and others with an interest in postural chiropractic methods. Unfortunately, many doctors seem to find the method too technical or burdensome. Hopefully, this article will make the simplicity and practicality of the method more apparent.

In the frontal view (Fig. 1), we see the X axis, extending out the left side of the patient and the Y axis extending vertically out the top of the patient's head. In this view, the Z axis extends forward, out the front of the patient's body and toward the reader.

In the lateral view (Fig. 2), the Z axis is now visible extending to the anterior. The Y axis, of course, is still seen extending vertically out the top of the body while the X axis (not visible here) extends to the patient's left and away from the reader. Note that it simply isn't possible to observe all three axes of movement in either view. Proper analysis requires observation of the patient from both front and side.

Take just a moment to make sure you are clear about the directions of each of the three axes. Once you have done so, it now becomes very simple to describe any motion or position of the body in terms of translation along one or more of the axes, and/or rotation around one or more of the axes. Fig. 3 shows forward head carriage, a very common posture, as an example.

Using Panjabi's method, we can describe this as translation of the head along the Z axis. Because it is theoretically possible for movement to occur along or around an axis in either direction, we will need to record the direction of movement. Translations are recorded as "positive" when they occur in the direction of arrow and "negative" when in the opposite direction. Rotational movements (not shown here) are recorded as "positive" when clockwise around an axis and "negative" when counterclockwise.

Finally, we need a concise way to record our findings in the patient's chart. There are actually four components which must be recorded. Here they are in no particular order.

1. In which direction has movement occurred?
2. Is the movement a translation along or a rotation around an axis?
3. Which body part is involved in the movement?
4. Which axis of motion is involved?

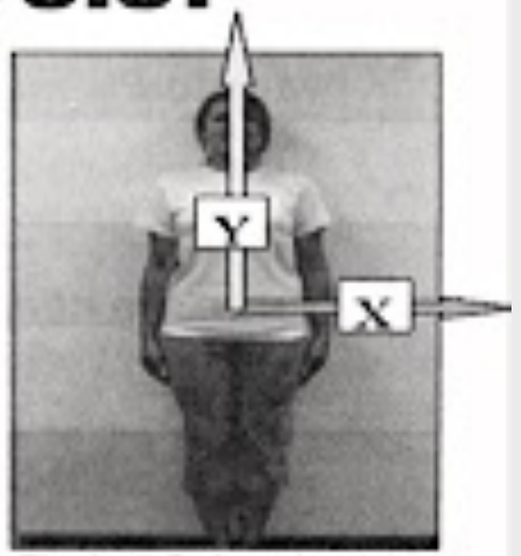


Fig. 1: A-P view showing both X and Y axes

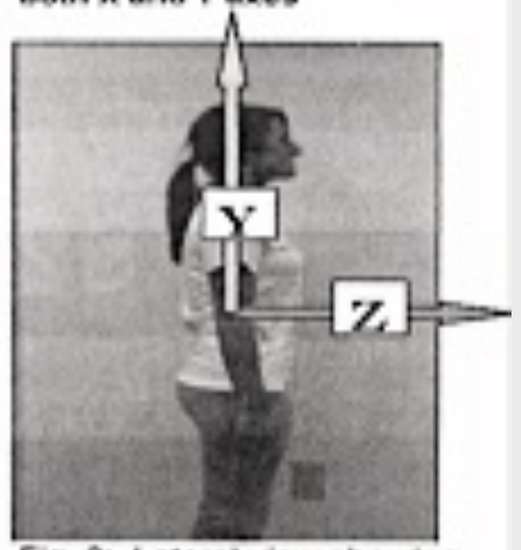


Fig. 2: Lateral view showing both Y and Z axes

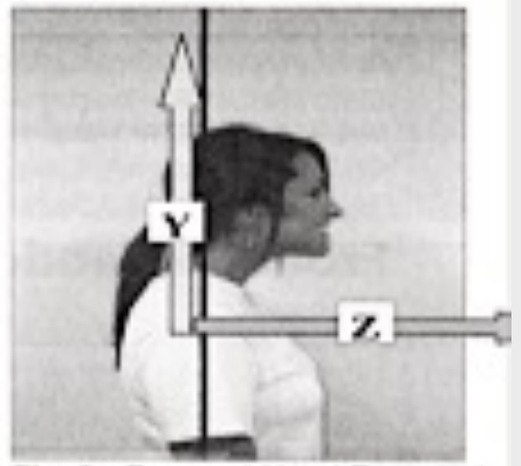
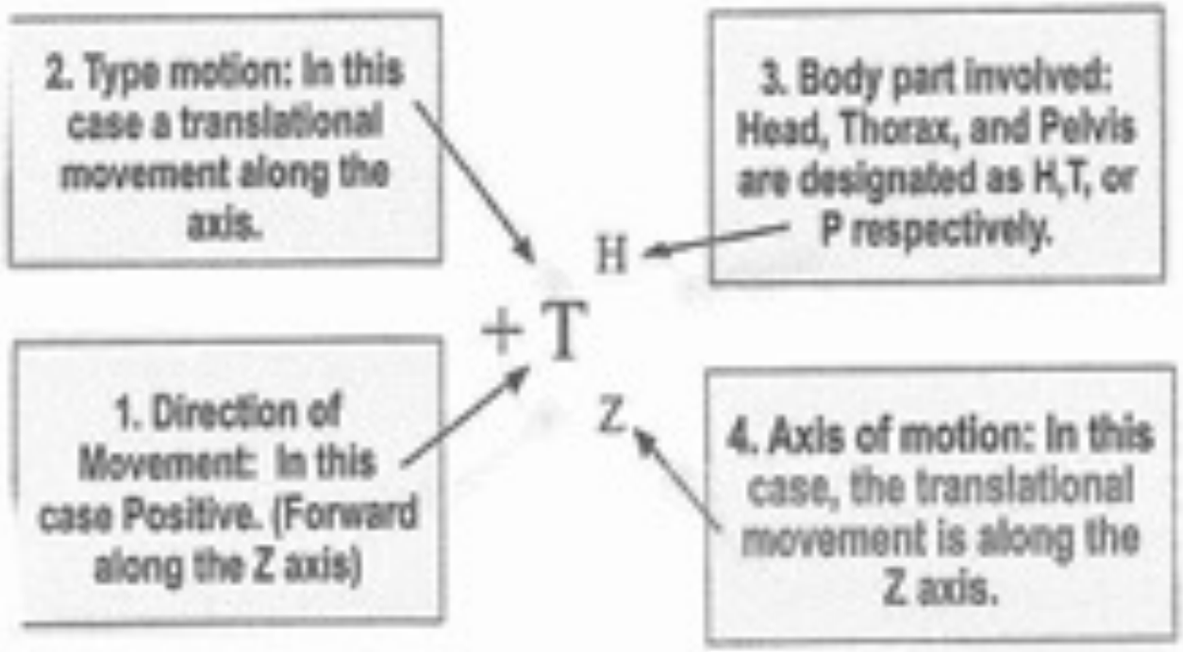


Fig. 3: Forward Head Translation along the Z axis.

In his original article, Panjabi abbreviated translations and rotations as "T" and "R" respectively. In more recent years, Harrison described a way to incorporate all four items into a brief notation system. The method has now been described in numerous articles by both Harrison and Troyanovich and is probably as close as we have to a standardized method of notating human posture. Fig. 4 describes how this simple method would be used to record our patient's forward head translation posture.

Truthfully, the really important thing is just that you analyze the posture in all possible directions and accurately describe your observations. How you choose to notate it isn't nearly so important, as long as interested third parties can understand your records. Certainly, you could just write it all down in long hand…nothing whatsoever wrong with that. In this case, "the patient presents with abnormal head carriage consisting of pronounced positive translation of the head along the Z axis."

Fig. 4: Abbreviated notation system. (After Harrison)



Or you just abbreviate it with a standardized system. Here's how it would actually look on your chart.

H
+T
Z

Understanding the Cartesian Coordinate System encourages doctors to analyze posture and motion in a more systematic fashion. In addition, it allows for more accurate communication between doctors and other interested parties. Obviously, the above example is just one simple posture. I have prepared a report which describes the method in more detail. Interested doctors may call 1-334-448-1210 to request a FREE copy of "Visual Postural Analysis."

Dr. Mark Payne is president of Matlin Mfg., a manufacturer and distributor of postural rehab products since 1988. For more information about low tech rehab for today's economy, call 1-334-448-1210 for a FREE REPORT...Guerilla Rehab: Survival Tactics for the Chiropractic Jungle.

1. Panjabi M, White A, Brand R. A note on defining body parts configurations. *J. Biomech* 1974; 7:385
2. Harrison DD. Abnormal postural permutations calculated as rotations and translations from an ideal normal upright static spine. In: Sweere J. *Ed Chiropractic Family Practice.* Gaithersberg, MD. 1994
3. Troyanovich J. *Structural Rehabilitation of the Spine.* TAC

COMMENTARY

JMPT

A Normal Spinal Position: It's Time to Accept the Evidence

INTRODUCTION

Recent trends in our chiropractic profession seem to be leading away from wellness care into an exclusive focus on short-term care for relief of symptoms, especially pain.[1] In contrast, some recent articles authored by CBP Nonprofit, Inc. researchers express an interest in spinal reconstruction, structural outcomes, and care beyond the mere relief of symptoms.[2-6] In a recent commentary, Haas et al[7] have taken exception to this approach.

A commentary by Haas et al[7] concerning one of our recent papers[8] expressed a paradigm for chiropractic science and patient treatment that is different from that expressed in our recent literature reviews and original publications. Their views on normal spinal position, radiograph usage, radiograph reliability, and spinal rehabilitation of normal structure, as expressed in their commentary, did not include mechanical engineering principles, which we believe necessary for understanding the stresses and strains in abnormal or asymmetric loading of spinal tissues.

In 1998, we had discussed a number critical flaws in 8 commonly held beliefs espoused by some diplomate chiropractic radiologists.[9] Thus, given the fact that the "conventional wisdom" of chiropractic radiologists was challenged, it was not surprising that there were a total of 8 authors and consultants who contributed to the rebuttal commentary of Haas et al.[7] What was not expected was the divergence into a critical analysis of Chiropractic Biophysics (CBP) methods and the Harrison spinal model,[9] which is used as an anatomical outcome for patients receiving CBP-based treatment. However, we are pleased to both address those raised concerns and present our rebuttal to Haas et al's misconceptions about the use of radiography in chiropractic clinical practice.

Because this normal spinal model was only self-published until 1992,[10-12] some have denied the existence of the Harrison normal spinal model and its implications for physiology. These implications were discussed in a short review of Wolff's law (bone remodels to stress) and Davis' law (soft tissue remodels to stress) for abnormal sagittal spinal configurations.[3] Because this Harrison model has recently been published in the indexed literature,[13,14] its existence can no longer be denied or ignored.

Inasmuch as Haas et al[7] had many different topics in their commentary and did provide section titles, it is convenient to respond with reference to those section titles. It is noted that some of their section titles are obscure and certainly not mainstream (eg, their reference to Sackett); nonetheless, the titles are useful as objects for debate. First, however, we present a logical approach to movements in upright posture, from which much about a normal upright position can immediately be derived.

It is a basic theorem of physics and engineering that the movement of any object can be decomposed into rotation, translation, and deformation.[30] Whereas White and Panjabi[31] have used this theorem to describe the 6 degrees of freedom (DOF) of individual spinal segments (rigid bodies), we have used this theorem to express all possible movements of the human head, thoracic cage, and pelvis in 3 dimensions.[10-12] Figs 1 and 2 are reprinted from a previous article in the *Journal of Manipulative and Physiological Therapeutics*.[32] These movements will form the basis on which we illuminate a normal postural position.

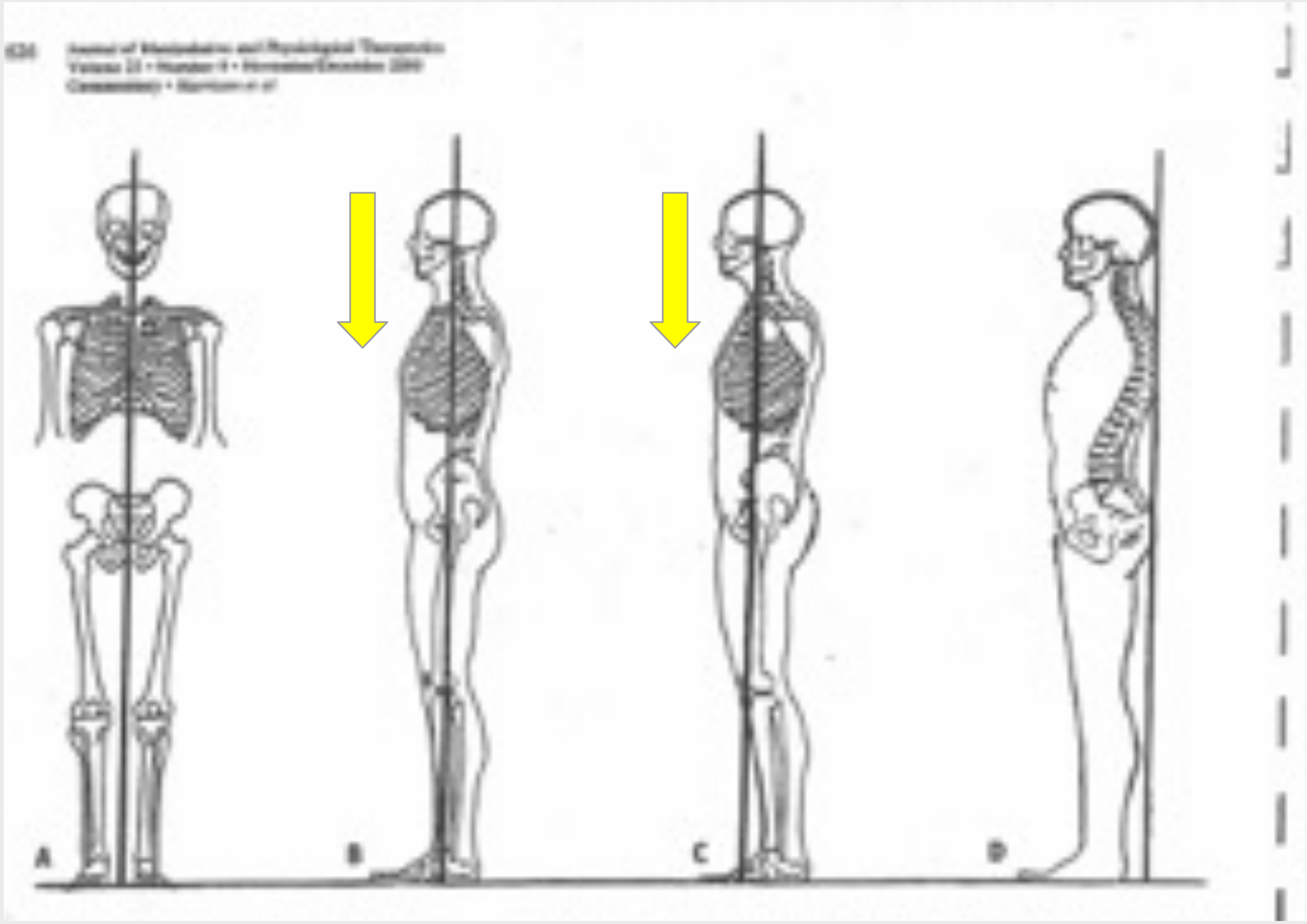
After providing a review of normal upright position in terms of the engineering principles and literature reviews to be presented below, analysis of chiropractic manipulations (which are mostly torsional loads) will lead the reader to conclude that diversified manipulation is inadequate for obtaining a structural change in the neutral resting posture. Thus, precise postural setups (such as those used in the CBP technique) are recommended for the sake of obtaining structural correction in a patient's spine after the relief of symptoms.

Biologic Plausibility and Validity

Haas et al[7] defined "biologic plausibility" for us. They appear to have assumed that the only important "biologic process" is back pain, and on the basis of that view they assume that it is unnecessary to address the upright spinal configuration under gravity. In addition, they state that our model is "merely a mathematical description of optimal stress on a static system".[7] We now reply that back pain is a multifactorial condition. The process of spinal degeneration and abnormal biomechanics causing mechanical distortions of the central nervous system (CNS) is better characterized as a degenerative disease process. Thus, symptoms appear after the disease process is well advanced (as is the

Picture B: Representative of Normal Spinal Model & Good/Perfect plumb line with equal weight distribution along the entire spinal column & joints of the spine.

Picture C: Shows an anterior forward head posture (slightly) and how the plumb line falls anterior to the spinal column & all other joints.



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INFANT PEDIATRIC POSTURE EVALUATION

(UPSIDE DOWN)

An infant is evaluated posturally by the Doctor of Chiropractic, holding the infant upside down, by their thighs (bilaterally) with the infant facing away from the DC and toward the parent.

Evaluation:

1. Look at infant's head for any:
   a. Head rotation;
   b. Head tilt;
   c. High shoulder;

2. Look at infant's hips:
   a. High hip;
   b. Rotation of hip

POSTURE CORRECTION IN CHILDREN (INFANT)

1. To analyze an infant's posture where the infant cannot hold their head in the upright position on their own:

a) Hold the infant upside down by the thighs, facing the parent. Hold the infant straight in front of you, and watch the direction the head is in. ***ie. Rotation of the head, lateral head tilt. Be aware of shoulder rotation***

b) Once you analyze the relative position of the head and shoulders, you will set up the child for instrument posture correction ***if the child cannot rotate fully in both directions***.

c) In this case *(right)* the infant's head is rotating to the left side, and has a left head tilt.

d) Facing the parent, lay the infant right-side-down with the parent's arms held outward, and put the infant's cervical spine over the wrist of the parent. Also, rotate the left arm and shoulder posterior.

e) <u>Correction:</u> Lightly super-stress the infant's head over the wrist of the parent, putting the head into the mirror image right head tilt. Gently, on the lowest setting (#1) stimulate the upper cervical area with the infant's head bent over the fulcrum of the parent arm.

f) Re-check posture with infant in upside down position.

POSTURE CORRECTION IN CHILDREN (INFANT)

II. As you see in the re-checked posture, the infant's head rotation is now rotating to the right side with no restriction or decrease in range of motion. Also, the level of the head and ears is balanced with no head tilt.

POSTURE CORRECTION IN CHILDREN (INFANT)

III. OBSERVATIONS:

PATIENT HAD AN IMMEDIATE BOWEL MOVEMENT AFTER LUMBAR SPINE WAS CHECKED, AND PARENT COMMENTED THAT THE BABY WAS EXTREMELY CONSTIPATED PRIOR TO COMING IN.

a) Received phone call at 7:00AM the following day, parent claiming that the infant slept through the night all night long for the very first time since birth.

b) Infants are people too! Don't be afraid to do chiropractic care on an infant. The results sometimes can be amazing!

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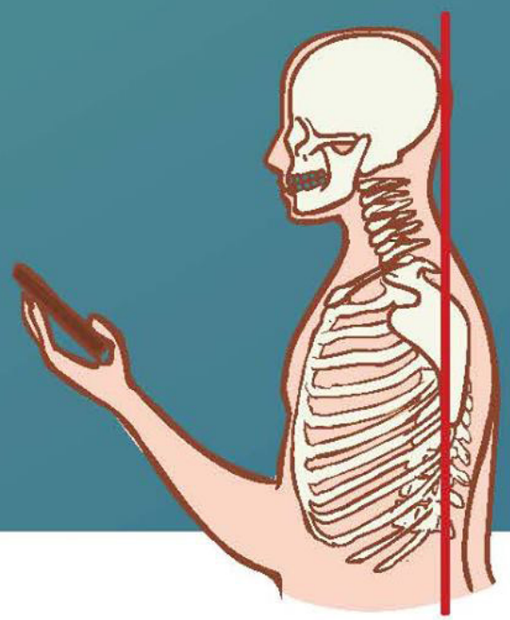
CHILD POSTURE EVALUATION

Remember to look up!



0° degrees
10 - 12 lbs

15° degrees
27 lbs

30° degrees
40 lbs

45° degrees
49 lbs

60° degrees
60 lbs

Combat
Tech-Neck

UPRITE: PROMOTING POSITIVE POSTURE IN CHILDREN AND ADOLESCENTS

Date & Journal: Stud Health Technol Inform. 2023 Jun 29

Abstract

Technology use associated with habitual posture is linked with the decline in mental well-being. The objective of this study was to evaluate the potential of posture improvement through game play. 73 children and adolescents were recruited, and accelerometer data collected through game play was analyzed. The data analysis reveals that the game/app affects and encourages upright/vertical posture.

Perimal-Lewis L, Light J, Strobel J. UPRITE: Promoting Positive Posture in Children and Adolescents. Stud Health Technol Inform. 2023 Jun 29;305:495-498. doi: 10.3233/SHTI230541. PMID: 37387075.

RELATIONSHIPS BETWEEN CERVICAL SAGITTAL POSTURE, MUSCLE ENDURANCE, JOINT POSITION SENSE, RANGE OF MOTION AND LEVEL OF SMARTPHONE ADDICTION

Date & Journal: BMC Musculoskelet Disord. 2023 Jan 23

Abstract

Background: Frequent smartphone use in a pathological way forces the user to adopt a compromised posture. This gradually results in changes to both the postural and musculoskeletal systems. This study's objectives were evaluation of head posture, muscle endurance, neck range of motion (ROM) and joint position sense in two separate smartphone user groups, one 'Addicted', the other 'Non-Addicted'.

Results: The difference between 'Addicted' and 'Non-Addicted' groups was confirmed by the values for SAS-SV scores (25.23 ± 5.5 versus 43.9 ± 6.61) ($p < 0.001$). There were statistically significant differences between groups for the CVA and FHD parameters ($p < 0.001$). Further, the neck extensor muscle endurance (97 ± 3.79 versus 74.86 ± 2.23 s), was significantly different between groups ($p = 0.010$) but not after Bonferroni correction. There was no notable difference in the neck flexor muscle endurance, joint position error, SA, and SHA parameters between groups ($p > 0.05$).

Conclusions: There is a positive correlation between smartphone addiction and both decreased extensor muscle endurance and changes in neck postural alignment.

Torkamani MH, Mokhtarinia HR, Vahedi M, Gabel CP. Relationships between cervical sagittal posture, muscle endurance, joint position sense, range of motion and level of smartphone addiction. BMC Musculoskelet Disord. 2023 Jan 23;24(1):61. doi: 10.1186/s128

PREVALENCE OF INCORRECT POSTURE AMONG CHILDREN AND ADOLESCENTS: FINDING FROM A LARGE POPULATION-BASED STUDY IN CHINA.

Date & Journal: iScience . 2020 May 22.

Abstract

Evidence showed that bad posture in adulthood is often formed from the childhood, and individuals with severe incorrect posture may be associated with the progress of scoliosis. We aimed to estimate the prevalence of incorrect posture in Chinese children and adolescents and to describe the epidemiological findings stratified by the demographic characteristics. A total of 595,057 students were screened; the overall prevalence of incorrect posture in children and adolescents was 65.3%, and around 3.7% of the students were referred to radiography. Girls had a higher prevalence of incorrect posture than boys, students aged >10 years accounted for a higher rate of incorrect posture than students aged <10 years. We found that Chinese children and adolescents had a high prevalence of incorrect posture, with girls and older students being an especially high-risk group. Early interventions targeted for students with incorrect posture are urgently needed.

Yang L, Lu X, Yan B, Huang Y. Prevalence of Incorrect Posture among Children and Adolescents: Finding from a Large Population-Based Study in China. iScience. 2020 May 22;23(5):101043. doi: 10.1016/j.isci.2020.101043. Epub 2020 Apr 8. PMID: 32330860; PMCID

KNOWLEDGE AND PRACTICES OF BACK CARE, EXPERIENCE IN COLOMBIAN CHILDREN

Date & Journal: Glob Pediatr Health. 2021 Jun 9.

Abstract

Early back care has become the preventive strategy to mitigate bad postural habits and musculoskeletal alterations that trigger inadequate postural patterns in the body schema. The objective was to determine the knowledge and practice of back care in first-grade school children after applying an educational intervention for back care. Quasi-experimental study with pre-test and post-tests in a sample of 71 first grade school students. Knowledge and practices for back care were evaluated before and after of the intervention. During 5 weeks, a program of education for back care was developed in the intervention group, formed by concepts about anatomy, physiology, alterations of the spine, adoption of appropriate postures and movements in school life and the execution of adequate movements learned. Simultaneously, physical exercises based on aerobic work, strengthening and stretching the back muscles were carried out with the children in the control group. A linear regression model and a two-level hierarchical model were applied to estimate the effect of the intervention. After the execution of the back care education program, a better score was found in the knowledge and practice questionnaire, which was different between the intervention group and the control group (1.72 95% CI 1.21-2.24). The development of an education program generated a change in the score of the questionnaire on knowledge of back care in the intervention group, which suggests the implementation of these strategies in the school context during early childhood, contributing to the prevention of back disorders and deficiencies.

Mantilla Toloza SC, Jaimes Guerrero CA, Lerma Castaño PR. Knowledge and Practices of Back Care, Experience in Colombian Children. Glob Pediatr Health. 2021 Jun 9;8:2333794X211023460. doi: 10.1177/2333794X211023460. PMID: 34179301; PMCID: PMC8193660.

DEVELOPMENT OF A SITTING POSTURE MONITORING SYSTEM FOR CHILDREN USING PRESSURE SENSORS: AN APPLICATION OF CONVOLUTIONAL NEURAL NETWORK

Date & Journal: Work . 2022 Apr 8.

Abstract

Background: Today, sedentary lifestyles are very common for children. Therefore, maintaining a good posture while sitting is very important to prevent musculoskeletal disorders. To maintain a good posture, the formation of good postural habit must be encouraged through posture correction. However, long-term observation is required for effective posture correction. Additionally, posture correction is more effective when it is performed in real time.

Results: The results of our experiments revealed model accuracies of 99.66%, 99.40%, and 77.35%, respectively. When comparing the recall values for each posture, leaning left and leaning right postures had high recall values, but good posture, leaning forward, and crossed-legs postures had low recall values.

Conclusion: The results of experiments indicated that CNN is an excellent classification method to classify the posture when the pressure distribution data is used as input data. This study is expected to contribute a development of system to aid in observing the natural sitting behavior of children and correcting poor posture in real time.

Lee Y, Kim YM, Pyo S, Yun MH. Development of a sitting posture monitoring system for children using pressure sensors: An application of convolutional neural network. Work. 2022 Apr 8. doi: 10.3233/WOR-213634. Epub ahead of print. PMID: 35431221.

PREDICTIVE VALUE OF HEART RATE AND BLOOD PRESSURE ON THE PROGNOSIS OF POSTURAL TACHYCARDIA SYNDROME IN CHILDREN

Date & Journal: Front Pediatr . 2022 Mar 30.

Abstract

Background: To investigate the predictive value of heart rate (HR) and blood pressure (BP) on the prognosis of postural tachycardia syndrome (POTS) in children.

Results: There were 91 research subjects, of which 45 are males, with a mean age of 11.52 ± 2.13 years. (1) HR at 5 and 10 min (HR 5 and HR 10, respectively), HR difference at 5 and 10 min (HRD 5 and HRD 10, respectively), and HR and BP product at 5 and 10 min (RPP 5 and RPP 10, respectively) were greater in the POTS group than in the control group ($P < 0.01$). (2) HR 5, HR 10, HRD 5, HRD 10, and RPP 10 in children with POTS were smaller in the good prognosis group than the poor prognosis group ($P < 0.01$). (3) The area under curve was 0.925 on the four combined indicators (HR 5, HR 10, HRD 5, and HRD 10), predicting a good prognosis of POTS, sensitivity of 99.99%, and specificity of 75.00%.

Conclusions: HR 5, HR 10, HRD 5, HRD 10, and RPP 10 and the four combined indicators (HR 5, HR 10, HRD 5, and HRD 10) had predictive value for the POTS prognosis in children. The predictive value of the four combined indicators for the POTS prognosis was better than that of the single HR 5, HRD 5, and RPP 10.

Wang S, Zou R, Cai H, Wang C. Predictive Value of Heart Rate and Blood Pressure on the Prognosis of Postural Tachycardia Syndrome in Children. Front Pediatr. 2022 Mar 30;10:802469. doi: 10.3389/fped.2022.802469. PMID: 35433537; PMCID: PMC9005773.

PREVALENCE OF BACK PAIN AND IDIOPATHIC SCOLIOSIS IN ADOLESCENTS FROM THE SEMIARID REGION OF BRAZIL: A CROSS-SECTIONAL STUDY

Date & Journal: Journal of Chiropractic Medicine. 2021 Sep

Abstract

Objective: The purpose of this study was to estimate the prevalence of adolescent idiopathic scoliosis (AIS), and back pain and its risk factors, in schoolchildren from the semiarid region of Brazil.

Results: Among the participants, 3.1% (95% confidence interval, 3.2%-6.9%) had a confirmed AIS diagnosis: 1.9% girls and 1.1% boys. There was no difference between boys and girls in AIS prevalence. The prevalence of back pain in the previous 3 months was 63.7% (95% confidence interval, 59.5%-67.7%), at a moderate level (visual analog scale = 3.83; 95% confidence interval, 3.57-4.08). Multivariable analysis showed that back pain is associated with postural variables, sex, and age.

Conclusion: The prevalence of AIS in the semiarid region of Brazil was 3.1%, and that of back pain was 63.7%. Only body mass index was different between adolescents with and without AIS, with those with AIS having a lower mean body mass index. Back pain was higher in girls and increased in older adolescents. Furthermore, behavioral and postural habits and hereditary factors were associated with an increased chance of back pain.

Dantas MGB, Aquino AN, Correia HJ, Ferreira KP, Nascimento BBD, Silva LS, Da Silva APS, Penha PJ, João SMA. Prevalence of Back Pain and Idiopathic Scoliosis in Adolescents From the Semiarid Region of Brazil: A Cross-sectional Study. J Chiropr Med. 2021 Se

EFFECT OF DURATION OF SMARTPHONE USE ON MUSCLE FATIGUE AND PAIN CAUSED BY FORWARD HEAD POSTURE IN ADULTS.

Date & Journal: J Phys Ther Sci . 2016 Jun.

- [Purpose] The effect of duration of smartphone use on neck and shoulder muscle fatigue and pain was investigated in adults with forward head posture.

- [Results] There was a significant difference in the degree of fatigue in the left upper trapezius muscles in group 2 and left cervical erector spinae and bilateral upper trapeziuses group 3. There was a significant difference in fatigue in the left upper trapezius in groups 1 and 3. The VAS showed significant differences in all groups before and after the experiment and between groups 1 and 3.

- [Conclusion] Pain and fatigue worsened with longer smartphone use. This study provided data on the proper duration of smartphone use. Correct posture and breaks of at least 20 minutes are recommended when using smartphones.

Kim SY, Koo SJ. Effect of duration of smartphone use on muscle fatigue and pain caused by forward head posture in adults. J Phys Ther Sci. 2016 Jun;28(6):1669-72. doi: 10.1589/jpts.28.1669. Epub 2016 Jun 28. PMID: 27390391; PMCID: PMC4932032.

Fig 14-26 Patient positioning for adjustive procedure to reverse component of abnormal posture of pelvic flexion (+θx) relative to the feet.

14-27 Patient positioning and placement of hands for adjustive procedure to reverse posterior translation (-Sz) of the thorax vs the pelvis.

14-28 Patient positioning for adjustive procedure to reverse anterior skull displacement vs tho-

pelvic section of the table. A broad foam wedge is placed beneath the patient's ischia so as to "rock" the pelvis into the "mirror-image" position of extension, as described by Harrison.[35]

The drop mechanism is elevated, and the DC places the hypothenar area of each hand over the corresponding anterior-superior iliac spine of the patient. The DC then thrusts toward the floor. The drop piece falls to its released position, and the DC "holds" this position, rather than recoiling the hands away from the iliac spine contacts. This procedure activates the mechanoreceptors of the joints of the lower spine, the pelvis, and the hipjoint, which aborts pain signals entering the spinal cord at various levels. This activity also changes the postural position of the spine, the pelvis, and the lower extremity by transiently resetting muscle tensions that are governed by electrical activity in the nervous system.[36]

Figure 14-27 demonstrates patient positioning and DC hand placement for the adjustive technique for posterior translation (-Sz) of the thorax vs the pelvis. The patient is placed supine with the iliac crests even with the cranial edge of the pelvic section of the adjusting table. A broad foam block or firm pillow is placed beneath the patient's thorax so as to translate the patient's torso anteriorly (+Sz) relative to the pelvis. The drop pelvic section is elevated, and the DC places the hypothenar eminence of each hand across the patient's anterior-superior iliac spine on each side. Again, the DC thrusts toward the floor, and when the drop pelvic piece falls to its released position the DC holds rather than recoiling.

Because these two components of displaced posture often occur simultaneously in the pregnant patient, the corrective adjustments for each may be safely combined into one maneuver. In this case, the patient would be placed supine with a foam block beneath the thorax and a broad foam wedge beneath the ischia. This automatically places the patient's thorax in a position of anterior translation (+Sz) and pelvic extension (-θx). The drop section is elevated, and the adjustive thrust is again applied at the area of the anterior-superior iliac spines. Obviously, the degree of patient positioning for this procedure (and all procedures presented in this chapter) is to the patient's tolerance.

As a result of the posterior displacement of the thorax relative to the pelvis (-Sz), the most commonly seen skull-vs-thorax posture in the pregnant patient is that of anterior translation (+Sz). This skull-vs-thorax displacement is depicted in Figure 14-14.

The adjustive procedure for anterior skull displacement vs thorax is demonstrated in Figure 14-28. The patient is placed supine on a drop cervical table with the occipital bone at the caudal edge of the drop

Pregnancy drop table adjusting. This is the preferred set up over side posture in late pregnancy. Make sure you set the drop at a very light tension.

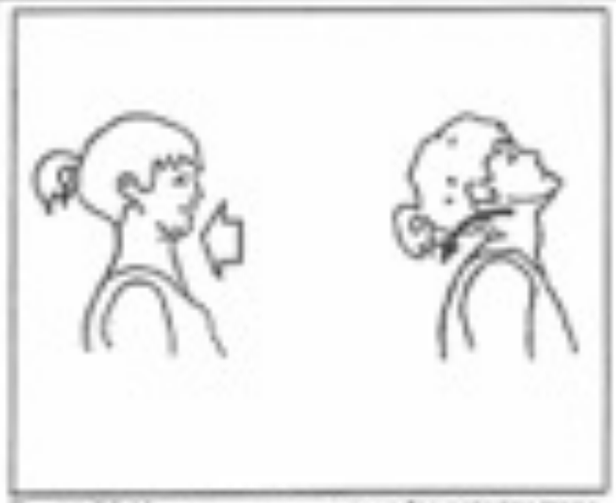


Fig 14-35 Mirror-image exercises for anterior translation (+Sz) and flexion (+flx) postures of the skull versus the thorax. The patient is instructed to stand with the shoulders against a firm object or sit in a chair that supports at the shoulders. The cervical muscles are contracted, and the skull is glided into posterior translation (-Sz). Or, the posterior cervical muscles are contracted into extension (-flx), and the patient is instructed to perform multiple sets of 10 to 20 repetitions per day. Source: Adapted from Chiropractic: Physics of Spinal Correction by D Harrison, ed, with permission of CBP Publications. Drawing © 1986 by Sang Harrison, DC.

Fig 14-37 The partial sit-up or "crunch." The patient lies on her back with knees bent. The head and shoulders are slowly raised off the floor until the small of the back is pressed to the floor. The crunch position is held for a count of five, and then the patient relaxes to the starting position. Multiple sets of 10 to 20 repetitions are performed daily. Source: Adapted from Essential Exercises for the Childbearing Year: A Guide to Health and Comfort before and after Your Baby Is Born by E Noble with permission of Houghton Mifflin, © 1976.

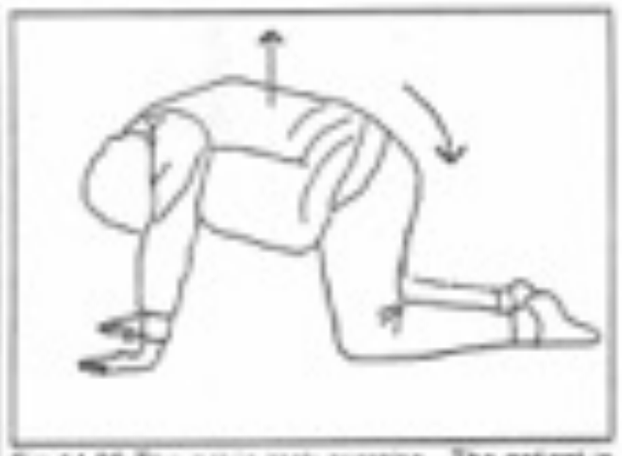
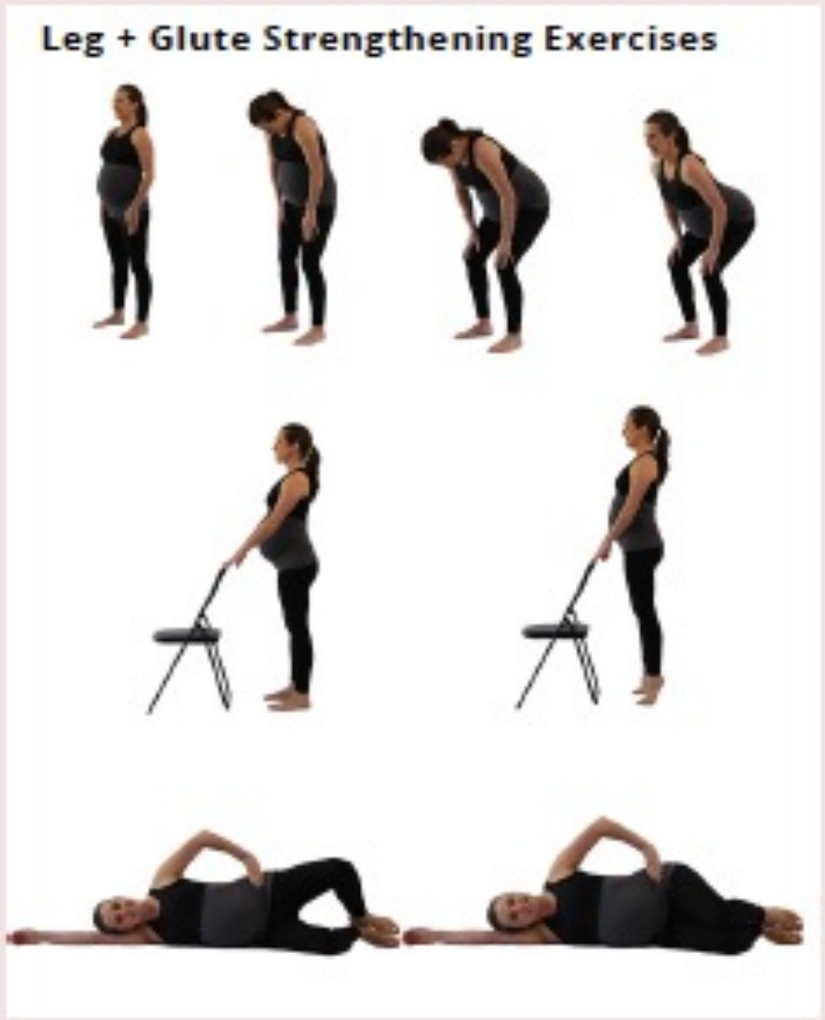


Fig 14-36 The pelvic rock exercise. The patient is instructed to assume a position on the hands and knees with the arms extended directly beneath the shoulders. Abdominal and buttock muscles are contracted causing the pelvis to be forced into flexion (+flx) relative to the femur heads. The patient is instructed further to hold this position for a count of five and then relax to the neutral position. Multiple sets of repetitions of 10 to 20 are performed daily. Source: Adapted from Essential Exercises for the Childbearing Year: A Guide to Health and Comfort before and after Your Baby Is Born by E Noble with permission of Houghton Mifflin, © 1976.

Fig 14-38 The squatting position of primitive peoples. The patient is instructed to squat in the position pictured here for up to 5 minutes or to tolerance. A book or 2 x 4-inch wood board can be placed beneath the heels to relieve tension in the achilles tendons, or the patient can be instructed to let the back rest against a couch or other heavy piece of furniture to maintain balance. This position relieves lumbar hyperextension and posterior translation (-Sz) of the thorax and likely facilitates sacral nutation during labor and delivery. Source: Adapted from Journal of Clinical Chiropractic (1991;1[3]:8-14). Copyright © 1991, Clinical Chiropractic Publishing Company Inc.

Pregnancy exercises to be given to patient.

Exercises for Pregnancy



PELVIC FLOOR + CORE

- When performing pelvic floor exercises aim to do 10 repetitions x 3 sets.
- Without contracting your glutes or inner thighs, try to gently squeeze and lift up through your pelvic floor muscles.
- It's equally important to relax the pelvic floor as it is to contract it to avoid an overactive pelvic floor.

Source: Pregactive.com

Common Pregnancy Injuries

Pelvic Girdle Pain: Any pain around your pelvis is something to be mindful of. Seek advice from your health care professional

Tip Avoid asymmetrical movements such as single leg lifts, lunges or any single leg work.

Carpal Tunnel: Swelling in the wrists is common in pregnancy and often can lead to wrist condition such as carpal tunnel.

Tip: When in all four kneeling, lower onto elbows or support your elbows with yoga blocks. Alternatively use fists rather than having hands flat.

Lower Back Pain: Sitting or standing for prolonged periods of time is not ideal in pregnancy. Regular movement is key in helping to reduce back ache.

Tip: Strengthening your core is so important in protecting your lower back in pregnancy. Prenatal Pilates is perfect for this.

Exercises for Pregnancy (Continued)

SAFE PRENATAL EXERCISE

Walking, swimming, prenatal yoga, prenatal Pilates, pelvic floor exercises and specific prenatal exercises are highly recommended to keep you strong, reduce aches and pains and improve your energy levels throughout your pregnancy.

BIRTH PREP + RECOVERY

Staying physically active in your pregnancy can help to improve your mood and energy levels and prepare you for your birth marathon and have a quicker recovery postpartum.

Being both physically and mentally prepared for birth can help you to have an empowering birth experience.

Source: Pregactive.com

V. CHIROPRACTIC ADJUSTIVE TECHNIQUE

A. DIVERSIFIED POSTURE EVALUATION AND MANUAL DEMONSTRATION OF POSTURAL PATTERNS
B. CHIROPRACTIC BIO-PHYSICS AND DIVERSIFIED POSTURE CORRECTION
    a) Neurological proprioceptive stimulation introduced
    b) Sleep posture
C. DIVERSIFIED PEDIATRIC EVALUATION AND ADJUSTIVE PROCEDURES
    a) Posture evaluation and demonstration of the pediatric patient.
    b) Diversified /biophysics manual adjustive procedures. Exercises for pregnancy.
D. INTRODUCTION TO DIVERSIFIED MYOFASCIAL RELEASE TECHNIQUES, INCLUDING PIRIFORMIS SYNDROME AND FROZEN SHOULDER SYNDROME.
E. POSTURE AND SYSTEMIC HEALTH. A LITERATURE REVIEW
    a) A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

MYOFASCIAL TRIGGER POINT THERAPY: WHAT IS IT?

- Myofascial pain results from muscle injury or repetitive strain.
- When stressed or injured, muscles from trigger points, like contracted knots that cause pain & tightness
- Common cause of pain
- When these points are pressed on, muscles fibers shorten, and cause referred pain

Reference: http://www.myofascialtherapy.org/myofascial-therapy/index.html

RESEARCH ON TRIGGER POINTS

- Patients evaluated in one pain management center were found to have a myofascial component to their pain in 95% of cases

  (Gerwin RD. A study of 96 subjects examined for both fibromyalgia and myofascial pain. J Musculoskeletal Pain 1995; 3 (suppl. 1):121-5.).

- There is increasing awareness that active myofascial trigger points often play a role in the symptoms of patients with tension headaches

  (Fernandez-de-Las-Penas C, onso-Blanco C, Cuadrado ML, Gerwin RD, Pareja JA. Myofascial trigger points and their relationship to headache clinical parameters in chronic tension-type headache. Headache 2006; 46(8):1264-72.).

- Low back pain, neck pain

  (Fernandez-de-Las-Penas C, onso-Blanco C, Miangolarra JC. Myofascial trigger points in subjects presenting with mechanical neck pain: A blinded, controlled study. Man Ther 2006;).

- Temporomandibular pain, forearm and hand pain, postural pain

  (Treaster D, Marras WS, Burr D, Sheedy JE, Hart D. Myofascial trigger point development from visual and postural stressors during computer work. J Electromyogr Kinesiol 2005;), pelvic/urogenital pain syndromes.

TREATMENT OF MYOFASCIAL TRIGGER POINTS

- Take a full medical and pain history
- Ergonomics of your work station and other regular activities.
- Assess and make suggestions to improve the quality of your sleep
- Make nutritional recommendations
- Choose an appropriate exercise/movement program
- Learn some self-treatment, self management and self care to assist you to treat your condition and your trigger points.

Reference: http://www.myofascialtherapy.org/myofascial-therapy/index.html

MYOFASCIAL RELEASE

(DONE BY HANDS ONLY)

- During therapy, find the myofascial area that feels stiff and fixed instead of elastic and movable under light manual pressure.

- Manually apply pressure and stretching will help loosen up restricted movement, leading to reduced pain.

- Insurance will only cover HANDS ONLY myofascial therapy work. No instrument work will be covered.

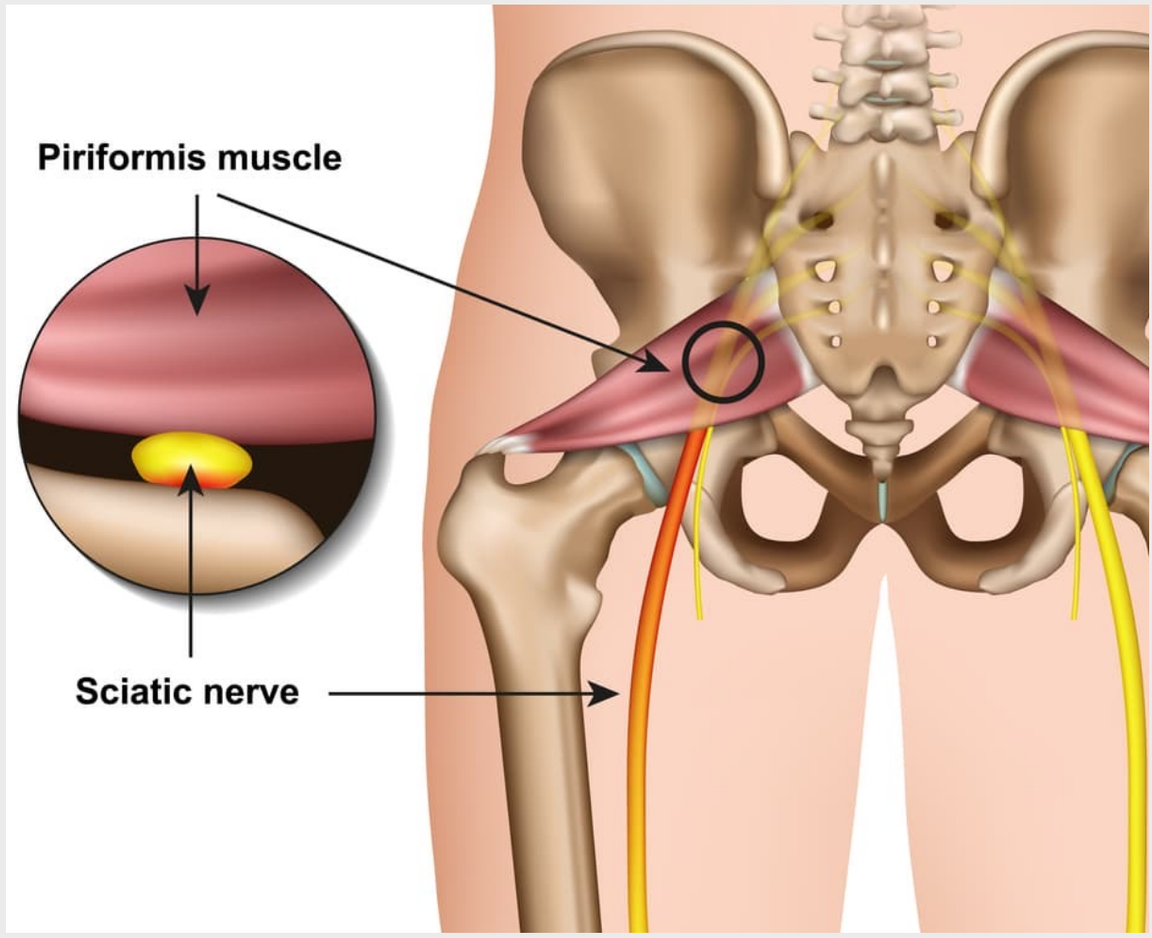
ELECTRICAL MASSAGERS: ADJUNCTIVE THERAPY TO WORK ON THE MUSCULATURE & POSTURE

- Massage is a great adjunctive therapy to use for preparatory readiness of muscle tissues prior to hands on treatment. Reminders:
  - Only use on large muscle groups, NEVER over bony process or in the cervical spine. Not near hair or on bare skin. (Only over material or towel.)
- T1- L5 in the paraspinal muscle region, gluteal region and around shoulder musculature region.
- May go slightly deeper on extremely muscular athletes.
- ONLY use for 4 seconds on one spot, then move location.
- Entire treatment lasts between 1 and 2 minutes.
- Go Light & be careful.

PIRIFORMIS SYNDROME

- The piriformis syndrome is a condition in which the piriformis muscle irritates the sciatic nerve, causing pain in the buttocks, and referring pain along the entire course of the sciatic nerve.

- Patients usually complain of deep buttock pain which is made worse by sitting, stairs, or squats. The piriformis muscle assists in abduction and laterally rotating the thigh. Stretching the muscle often duplicates the pain.



- Anatomically, the piriformis muscle lies deep to the gluteal muscles. It originates from the sacral spine and attaches to the greater trochanter. The sciatic nerve usually passes underneath the piriformis muscle, but in 15% of the population it travels through the muscle. Any acute or chronic injury with inflammation irritates the sciatic nerve . Piriformis syndrome is diagnosed by symptoms from the physical exam.

- Once diagnosed, the treatment will include progressive piriformis stretching starting with four seconds of sustained stretch or up to 60sec. sustained stretch using your hands.

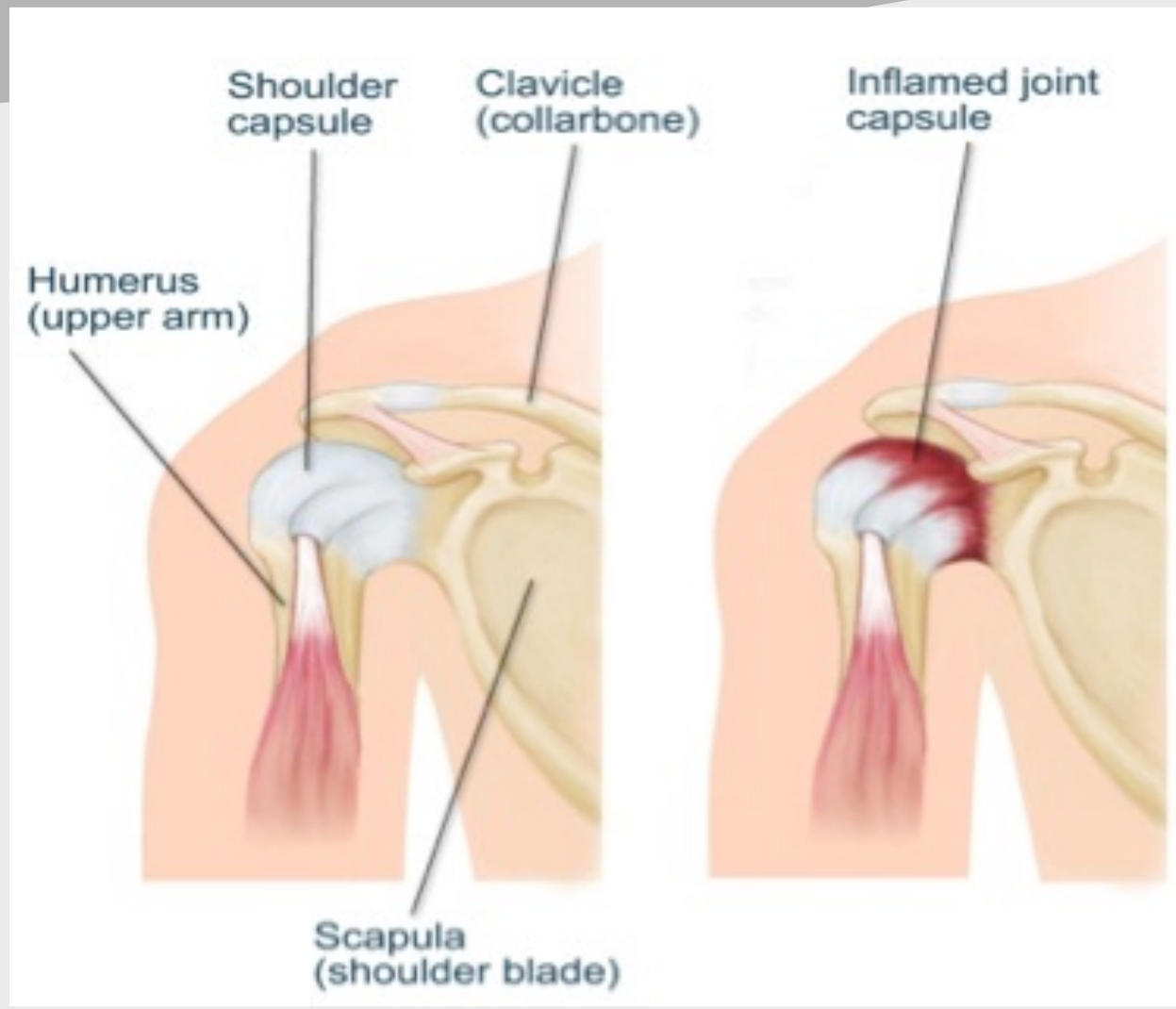
Frozen Shoulder Syndrome

Shoulder range of motion is locked up.

Common in pitchers, quarterbacks, and sports that use a dominant arm.

Treatment:

- Dig Myofascial trigger points
- Put patient through full range of motion while working on specific trigger points
- May use electric massagers to loosen muscles prior to hands-on work



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E. POSTURE AND SYSTEMIC HEALTH. A LITERATURE REVIEW
   a) A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

FORWARD HEAD POSTURE: A LITERATURE REVIEW

THE RELATIONSHIP BETWEEN FORWARD HEAD POSTURE, POSTURAL CONTROL AND GAIT: A SYSTEMATIC REVIEW

DATE & JOURNAL: GAIT POSTURE. 2022 OCT

Abstract

Background: Forward head posture (FHP) is a common postural deviation. An increasing number of studies have reported that people with FHP present with impaired postural control and gait; however, there is conflicting evidence. A systematic review focusing on these relationships has been unavailable to date.

Results: Nineteen studies were selected for this review. Consistent evidence supported that people with FHP had significant alterations in limits of stability (n = 3), performance-based balance (n = 3), and cervical proprioception (n = 4). Controversial evidence existed for a relationship of FHP with static balance (n = 4) and postural stability control (n = 4). Limited evidence existed to support an alteration in gait and vestibular function. Three studies on induced FHP consistently identified no reduced postural control.

Significance: Current evidence supports an association between FHP and a detrimental alteration in limits of stability, performance-based balance, and cervical proprioception. Instead of simply indicating impaired overall balance, the findings of this review indicate that a reduction in specific aspects of the postural control requires to be clarified in clinical evaluation for individuals with FHP, which would facilitate the planning and application of appropriate interventions to prevent dysfunctions and disability.

Lin G, Zhao X, Wang W, Wilkinson T. The relationship between forward head posture, postural control and gait: A systematic review. Gait Posture. 2022 Oct;98:316-329. doi: 10.1016/j.gaitpost.2022.10.008. Epub 2022 Oct 14. PMID: 36274469.

STRUCTURAL REHABILITATION OF THE CERVICAL LORDOSIS AND FORWARD HEAD POSTURE: A SELECTIVE REVIEW OF CHIROPRACTIC BIOPHYSICS ® CASE REPORTS

DATE & JOURNAL: J PHYS THER SCI. 2022 NOV

Abstract

[Purpose] To characterize the case report evidence of Chiropractic BioPhysics® (CBP®) technique methods applied to increase cervical lordosis and improve forward head posture

[Results] Sixty patients were reported in 41 unique manuscripts detailing the improvement in cervical spine alignment by CBP technique methods. On average, there was a 14° improvement in cervical lordosis and a 12 mm reduction in forward head position after 40 treatments over 16 weeks with a 5-point reduction in pain rating scores. Thirty-eight percent of cases included follow-up showing only slight loss of lordosis, but maintenance of pain and disability improvements after an average of 1.5 treatments per month for 1.8 years.

[Conclusion] An abundance of reports document improvement in craniocervical and other ailments by CBP methods that increase cervical lordosis. Routine radiographic imaging of the spine is recommended as it is safe and the only current practical method of screening for critical biomechanical biomarkers of sagittal spine alignment.

Oakley PA, Kallan SZ, Harrison DE. Structural rehabilitation of the cervical lordosis and forward head posture: a selective review of Chiropractic BioPhysics® case reports. J Phys Ther Sci. 2022 Nov;34(11):759-771. doi: 10.1589/jpts.34.759. Epub 2022 Nov 1. PMID: 36337218; PMCID: PMC9622351.

SUBOCCIPITAL MUSCLES, FORWARD HEAD POSTURE, AND CERVICOGENIC DIZZINESS

Date & Journal: Medicina (Kaunas). 2022 Dec 5

Abstract

Dizziness or vertigo can be caused by dysfunction of the vestibular or non-vestibular systems. The diagnosis, treatment, and mechanism of dizziness or vertigo caused by vestibular dysfunction have been described in detail. However, dizziness by the non-vestibular system, especially cervicogenic dizziness, is not well known. This paper explained the cervicogenic dizziness caused by abnormal sensory input with references to several studies. Among head and neck muscles, suboccipital muscles act as stabilizers and controllers of the head. Structural and functional changes of the suboccipital muscles can induce dizziness. Especially, myodural bridges and activation of trigger point stimulated by abnormal head posture may be associated with cervicogenic dizziness.

Sung YH. Suboccipital Muscles, Forward Head Posture, and Cervicogenic Dizziness. Medicina (Kaunas). 2022 Dec 5;58(12):1791. doi: 10.3390/medicina58121791. PMID: 36556992; PMCID: PMC9786116.

EXERCISE-MEDIATED REINNERVATION OF SKELETAL MUSCLE IN ELDERLY PEOPLE: AN UPDATE

Date & Journal: Eur J Transl Myol . 2022 Feb 28.

Abstract

Sarcopenia is defined by the loss of muscle mass and function. In aging sarcopenia is due to mild chronic inflammation but also to fiber-intrinsic defects, such as mitochondrial dysfunction. Age-related sarcopenia is associated with physical disability and lowered quality of life. In addition to skeletal muscle, the nervous tissue is also affected in elderly people. With aging, type 2 fast fibers preferentially undergo denervation and are reinnervated by slow-twitch motor neurons. They spread forming new neuro-muscular junctions with the denervated fibers: the result is an increased proportion of slow fibers that group together since they are associated in the same motor unit. Grouping and fiber type shifting are indeed major histological features of aging skeletal muscle. Exercise has been proposed as an intervention for age-related sarcopenia due to its numerous beneficial effects on muscle mechanical and biochemical features. In 2013, a precursor study in humans was published in the European Journal of Translation Myology (formerly known as Basic and Applied Myology), highlighting the occurrence of reinnervation in the musculature of aged, exercise-trained individuals as compared to the matching control. This paper, entitled «Reinnervation of Vastus lateralis is increased significantly in seniors (70-years old) with a lifelong history of high-level exercise», is now being reprinted for the second issue of the «Ejtm Seminal Paper Series». In this short review we discuss those results in the light of the most recent advances confirming the occurrence of exercise-mediated reinnervation, ultimately preserving muscle structure and function in elderly people who exercise.

Coletti C, Acosta GF, Keslacy S, Coletti D. Exercise-mediated reinnervation of skeletal muscle in elderly people: An update. Eur J Transl Myol. 2022 Feb 28;32(1):10416. doi: 10.4081/ejtm.2022.10416. PMID: 35234025; PMCID: PMC8992679.

IMMEDIATE EFFECT OF CERVICO-THORACIC MOBILIZATION ON DEEP NECK FLEXORS STRENGTH IN INDIVIDUALS WITH FORWARD HEAD POSTURE: A RANDOMIZED CONTROLLED TRIAL.

DATE & JOURNAL: J MAN MANIP THER . 2020 OCT 22

Abstract

Introduction: Forward head posture is the most frequently observed postural deviations and is said to be associated with shortening of posterior cervical extensors and weakening of the anterior deep cervical flexors. Manual therapy has the potential to achieve reflexogenic changes in muscle and enhance the motor activity and strength.

Purpose of the study: To evaluate the immediate effect of grade IV cervicothoracic Maitland mobilization on deep neck flexors strength in individuals with forward head posture.

Results: The strength of deep neck flexors effectively increased after advocating grade IV mobilization.

Conclusion: This study concluded that grade IV central and unilateral posteroanterior Maitland mobilization demonstrated significant increase in the deep neck flexors strength in individuals with forward head posture.

Ghan GM, Babu VS. Immediate Effect of Cervico-thoracic Mobilization on Deep Neck Flexors Strength in Individuals with Forward Head Posture: A Randomized Controlled Trial. J Man Manip Ther. 2020 Oct 22:1-11. doi: 10.1080/10669817.2020.1834321. Epub ahead o

RELATIONSHIP BETWEEN FORWARD HEAD POSTURE AND TISSUE MECHANOSENSITIVITY: A CROSS-SECTIONAL STUDY

DATE & JOURNAL: J CLIN MED . 2020 FEB 27.

Abstract

The relationship between forward head posture (FHP) and neck pain is not clear. FHP could possibly increase the mechanosensitivity of cervical tissues, which could lead to the development of pain depending on the adaptation capability of the central nervous system. The purpose of this study was to analyse the influence of FHP in the mechanosensitivity of articular, muscular, and neural tissues related to the cervical spine. The pressure pain threshold was bilaterally measured in different muscles and nerves and the second cervical vertebrae. The cervical spine's range of movement was also examined. The measurements were obtained from people with (n = 32) and without (n = 64) FHP. The analyses included a 2-by-2 mixed analysis of variance (ANOVA), pairwise comparisons with Bonferroni correction, and point-biserial correlation coefficients. Subjects with FHP showed a less pressure pain threshold (PPT) in all locations except for the upper trapezius and scalenus medius muscles. They also showed less extension and right-rotation range of motion. There was no association between FHP, neck pain, disability, and headache. Nevertheless, more research is needed to evaluate the relationship between FHP, tissue mechanosensitivity, and neck pain.

Martinez-Merinero P, Nuñez-Nagy S, Achalandabaso-Ochoa A, Fernandez-Matias R, Pecos-Martin D, Gallego-Izquierdo T. Relationship between Forward Head Posture and Tissue Mechanosensitivity: A Cross-Sectional Study. J Clin Med. 2020 Feb 27;9(3):634. doi: 10.

IS FORWARD HEAD POSTURE RELEVANT TO AUTONOMIC NERVOUS SYSTEM FUNCTION AND CERVICAL SENSORIMOTOR CONTROL? CROSS SECTIONAL STUDY

DATE & JOURNAL: GAIT POSTURE . 2020 MAR.

Abstract

Background: There is a growing interest concerning the understanding of the sagittal configuration of the cervical spine as a clinical outcome. However, evaluating sensorimotor control and autonomic nervous system for participants with forward head posture (FHP) compared to strictly matched control participants with normal head alignment has not been adequately addressed.

Results: The unpaired t-test analysis showed that there were statistically significant differences between the FHP group and control group for all of the sensorimotor measured variables including SPNT, OSI and left and right rotation repositioning accuracy. Also, there was a significant difference in neurophysiological findings, including SSR amplitude, but there was no significant difference for SSR Latency. The CVA significantly correlated with all measured variables.

Conclusions: Participants with FHP exhibited abnormal sensorimotor control and autonomic nervous system dysfunction compared to those with normal head alignment.

Moustafa IM, Youssef A, Ahbouch A, Tamim M, Harrison DE. Is forward head posture relevant to autonomic nervous system function and cervical sensorimotor control? Cross sectional study. Gait Posture. 2020 Mar;77:29-35. doi: 10.1016/j.gaitpost.2020.01.004.

THE EFFECTS OF FORWARD HEAD POSTURE ON EXPIRATORY MUSCLE STRENGTH IN CHRONIC NECK PAIN PATIENTS: A CROSS-SECTIONAL STUDY.

DATE & JOURNAL: TURK J PHYS MED REHABIL . 2020 MAY 18.

Abstract

Objectives: This study aims to investigate the relationship between forward head posture (FHP) and respiratory dysfunctions in patients with chronic neck pain.

Results: There was a negative correlation between the FHPmm with Pe_{max}%. A negative correlation was also observed between C7° and forced expiratory volume in one sec (FEV1)/forced vital capacity (FVC)%, forced expiratory flow… There was a positive correlation between neck disability and VAS scores while there was a negative correlation between neck disability and chest expansion, maximum voluntary ventilation.

Conclusion: Based on our study results, FHP is associated with expiratory muscle weakness in chronic neck pain patients. To evaluate respiratory dysfunction, chest expansion tests may be useful, although these tests are not specific to muscle weakness. Interventions about FHP and neck pain should focus on the effects of respiratory muscle training.

Solakoğlu Ö, Yalçın P, Dinçer G. The effects of forward head posture on expiratory muscle strength in chronic neck pain patients: A cross-sectional study. Turk J Phys Med Rehabil. 2020 May 18;66(2):161-168. doi: 10.5606/tftrd.2020.3153. PMID: 32760893; PM

THE EFFECTS OF FORWARD HEAD POSTURE ON EXPIRATORY MUSCLE STRENGTH IN CHRONIC NECK PAIN PATIENTS: A CROSS-SECTIONAL STUDY.

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Abstract

Objectives: This study aims to investigate the relationship between forward head posture (FHP) and respiratory dysfunctions in patients with chronic neck pain.

Results: There was a negative correlation between the FHPmm with Pe_{max}%. A negative correlation was also observed between C7° and forced expiratory volume in one sec (FEV1)/forced vital capacity (FVC)%, forced expiratory flow… There was a positive correlation between neck disability and VAS scores while there was a negative correlation between neck disability and chest expansion, maximum voluntary ventilation.

Conclusion: Based on our study results, FHP is associated with expiratory muscle weakness in chronic neck pain patients. To evaluate respiratory dysfunction, chest expansion tests may be useful, although these tests are not specific to muscle weakness. Interventions about FHP and neck pain should focus on the effects of respiratory muscle training.

Solakoğlu Ö, Yalçın P, Dinçer G. The effects of forward head posture on expiratory muscle strength in chronic neck pain patients: A cross-sectional study. Turk J Phys Med Rehabil. 2020 May 18;66(2):161-168. doi: 10.5606/tftrd.2020.3153. PMID: 32760893; PM

EFFECT OF FORWARD HEAD POSTURE ON THORACIC SHAPE AND RESPIRATORY FUNCTION.

DATE & JOURNAL: J PHYS THER SCI. 2019 JAN

Objective: This study investigated the effect of forward head posture on upper and lower thoracic shape in adults to better understand the relationship between a forward head posture and respiratory function.

Results: Forced vital capacity, expiratory and inspiratory reserve volumes, forced expiratory volume at 1 second, and the peak flow rate observed with the forward head posture were significantly lower than that with the neutral head posture. The upper thorax showed a greater forward shift and the lower thorax showed a greater forward and inward shift with the forward head posture than with the neutral head posture. No significant difference in upper thoracic mobility was observed during respiration between the forward head posture and the neutral head posture. However, mobility of the lower thorax during respiration was significantly reduced with the forward head posture.

Conclusion: The forward head posture causes expansion of the upper thorax and contraction of the lower thorax, and these morphological changes cause decreased respiratory function.

Koseki T, Kakizaki F, Hayashi S, Nishida N, Itoh M. Effect of forward head posture on thoracic shape and respiratory function. J Phys Ther Sci. 2019 Jan;31(1):63-68. doi: 10.1589/jpts.31.63. Epub 2019 Jan 10. PMID: 30774207; PMCID: PMC6348172.

THE EFFECT OF MANUAL THERAPY AND STABILIZING EXERCISES ON FORWARD HEAD AND ROUNDED SHOULDER POSTURES: A SIX-WEEK INTERVENTION WITH A ONE-MONTH FOLLOW-UP STUDY.

DATE & JOURNAL: BMC MUSCULOSKELET DISORD. 2019 FEB 18

BACKGROUND: The purpose of this study is to evaluate the effect of a six-week combined manual therapy (MT) and stabilizing exercises (SEs), with a one-month follow-up on neck pain and improving function and posture in patients with forward head and rounded shoulder postures (FHRSP).

RESULTS: There were significant within-group improvements in pain, function, and head and shoulder posture in groups 1 and 2. There were significant between-group differences in groups 1 and 2 in head posture, pain, and function favoring group 1 with effect size respectively. There were significant between-group differences in both intervention groups versus the control group favoring the intervention groups.

CONCLUSION: These findings suggest that both interventions were significantly effective in reducing neck pain and improving function and posture in patients. However, the improvement in function and pain were more effective in Group 1 as compared to Group 2, suggesting that MT can be used as a supplementary method to the stabilizing intervention in the treatment of neck pain. More researches are needed to confirm the result of this study.

Fathollahnejad K, Letafatkar A, Hadadnezhad M. The effect of manual therapy and stabilizing exercises on forward head and rounded shoulder postures: a six-week intervention with a one-month follow-up study. BMC Musculoskelet Disord. 2019 Feb 18;20(1):86.

IMMEDIATE RESPONSES TO BACKPACK CARRIAGE ON POSTURAL ANGLES IN YOUNG ADULTS: A CROSSOVER RANDOMIZED SELF-CONTROLLED STUDY WITH REPEATED MEASURES.

Date & Journal: Work. 2017.

Abstract

- BACKGROUND: Heavy backpacks have been associated with various postural changes and consequently musculoskeletal disorders.

- OBJECTIVE: We evaluated the immediate responses of varying backpack loads on cranio-vertebral angle (CVA), sagittal shoulder angle (SSA) and trunk forward lean (TFL) of young adults between the ages of 18-25 years.

- RESULTS: Generally, there was a trend toward a decrease in the CVA and TFL with increasing backpack loads. Specifically, a significant decrease was seen for TFL at10% and 15% BW loads when compared with no load condition. In contrast, the decrease in CVA was only significant between no load condition and 15% body weight load. The SSA remained unchanged with backpack weight within 15% BW.

- CONCLUSION: Whereas the SSA of young adults may not be upset by an acute loading with a backpack within 15% of body weight, a 15% BW backpack led to more forward posture of the head on the neck. In addition, backpack load as low as 10% BW is enough to cause an immediate forward lean of the trunk

Abaraogu UO, Ezenwankwo EF, Nwadilibe IB, Nwafor GC, Ugwuele BO, Uzoh PC, Ani I, Amarachineke K, Atuma C, Ewelunta O. Immediate responses to backpack carriage on postural angles in young adults: A crossover randomized self-controlled study with repeated m

A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

PROPRIOCEPTION POSTURE: A LITERATURE REVIEW

NECK MUSCLE FATIGUE AFFECTS PERFORMANCE OF AN EYE-HAND TRACKING TASK.

DATE & JOURNAL: J ELECTROMYOGR KINESIOL. 2019 APR 10

Altered afferent input from the neck due to fatigue alters upper limb proprioception and is likely to impact upper limb performance accuracy. This study examined the effect of cervical extensor muscle (CEM) fatigue on eye-hand tracking accuracy in healthy participants. Twenty-four healthy right-handed individuals were randomly assigned to either a control or CEM fatigue group. Each participant performed a tracking task which required shoulder rotation to move a circular object to a square target on a touchscreen computer. The task was performed with vision of the target and with the target hidden. A prone lying position, CEM fatigue protocol required participants to hold a 2 kg weight against gravity with their head in a neutral posture. The control intervention rested for 5 min, in a prone position, with the head supported in a neutral posture. Participants performed 3 trials with vision and 3 without at 5 different time points: (1) pre-intervention (fatigue or control), (2) immediately post-intervention, (3) 5 min, (4) 10 min, and (5) 20 min post-intervention.

There were significant differences between the target with vision and the hidden condition for both groups between pre- and post-fatigue trials in angle of trajectory, and distance from release point to the target. Significant differences occurred in the hidden target condition for the fatigue group immediately post fatigue for distance from release to the target. Neck muscle fatigue reduced the accuracy of an upper limb tracking task to a hidden target, suggesting that altered afferent input from the neck due to fatigue may impair body schema and result in decreased upper limb performance accuracy.

Zabihhosseinian M, Yielder P, Holmes MWR, Murphy B. Neck muscle fatigue affects performance of an eye-hand tracking task. J Electromyogr Kinesiol. 2019 Aug;47:1-9. doi: 10.1016/j.jelekin.2019.04.001. Epub 2019 Apr 10. PMID: 31005033.

THE PROPRIOCEPTIVE SYSTEM MASTERMINDS SPINAL ALIGNMENT: INSIGHT INTO THE MECHANISM OF SCOLIOSIS.

Date and Journal: Dev Cell. 2017 Aug 21.

Maintaining posture requires tight regulation of the position and orientation of numerous spinal components. Yet, surprisingly little is known about this regulatory mechanism, whose failure may result in spinal deformity as in adolescent idiopathic scoliosis. Here, we use genetic mouse models to demonstrate the involvement of proprioception in regulating spine alignment. Null mutants for Runx3 transcription factor, which lack TrkC neurons connecting between proprioceptive mechanoreceptors and spinal cord, developed peripubertal scoliosis not preceded by vertebral dysplasia or muscle asymmetry. Deletion of Runx3 in the peripheral nervous system or specifically in peripheral sensory neurons, or of enhancer elements driving Runx3 expression in proprioceptive neurons, induced a similar phenotype. Egr3 knockout mice, lacking muscle spindles, but not Golgi tendon organs, displayed a less severe phenotype, suggesting that both receptor types may be required for this regulatory mechanism. These findings uncover a central role for the proprioceptive system in maintaining spinal alignment.

Blecher R, Krief S, Galili T, Biton IE, Stern T, Assaraf E, Levanon D, Appel E, Anekstein Y, Agar G, Groner Y, Zelzer E. The Proprioceptive System Masterminds Spinal Alignment: Insight into the Mechanism of Scoliosis. Dev Cell. 2017 Aug 21;42(4):388-399.e

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THE SIGNIFICANCE OF DIRECTIONAL PREPONDERANCE IN THE EVALUATION OF VESTIBULAR FUNCTION IN PATIENTS WITH VERTIGO.

Date & Journal: Zhonghua Er Bi Yan Hou Tou Jing Wai Ke Za Zhi . 2017 Mar 7

Objective: To analyze the relationship between directional preponderance (DP), spontaneous nystagmus(SN) and vestibular disorders, and to investigate the significance of DP in directing peripheral vestibular function in patients with vertigo.

Methods: This was a retrospective analysis of 394 cases diagnosed with peripheral vestibular disease accompanied by vertigo from March 2012 to June 2014 in the Outpatient Department of the Eye & ENT Hospital of Fudan University.

Results: The patients were divided into two groups according to DP results of caloric test. DP-normal group had 203 cases and DP-abnormal group had 191 cases. Spontaneous nystagmus was presented in 44 cases in the DP-normal group and four in the DP-abnormal group. A significant difference was found between the two groups. Deficiency of vestibular function was noted in 165 cases in the DP-normal group and 123 in the DP-abnormal group in static and dynamic posture equilibrium tests. The difference between the two groups was statistically significant.

Conclusion: Compared with DP-normal patients, DP-abnormal patients are more likely to have spontaneous nystagmus and balance disorders due to vestibular dysfunction.

Wang J, Zhou YJ, Yu J, Gu J. [The significance of directional preponderance in the evaluation of vestibular function in patients with vertigo]. Zhonghua Er Bi Yan Hou Tou Jing Wai Ke Za Zhi. 2017 Mar 7;52(3):200-204. Chinese. doi: 10.3760/cma.j.issn.1673-

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A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

CONDITIONS CAUSED BY POOR POSTURE: A LITERATURE REVIEW

EFFECT OF HOME EXERCISE TRAINING IN PATIENTS WITH NONSPECIFIC LOW-BACK PAIN: A SYSTEMATIC REVIEW AND META-ANALYSIS

Date & Journal: Int J Environ Res Public Health . 2021 Aug 10.

Abstract

Background: Exercise therapy is recommended to treat non-specific low back pain (LBP). Home-based exercises are promising way to mitigate the lack of availability of exercise centers. In this paper, we conducted a systemic review and meta-analysis on the effects of home-based exercise on pain and functional limitation in LBP.

Results: We included 33 studies and 9588 patients. We found that pain intensity decreased in the exclusive home exercise group (Effect size = -0.89. 95% CI -0.99 to -0.80) and in the group which conducted exercise both at-home and at another setting (-0.73. -0.86 to -0.59). Similarly, functional limitation also decreased in both groups (-0.75. -0.91 to -0.60, and -0.70, -0.92 to -0.48, respectively). Relaxation and postural exercise seemed to be ineffective in decreasing pain intensity, whereas trunk, pelvic or leg stretching decreased pain intensity. Yoga improved functional limitation. Supervised training was the most effective method to improve pain intensity. Insufficient data precluded robust conclusions around the duration and frequency of the sessions and program.

Conclusion: Home-based exercise training improved pain intensity and functional limitation parameters in LBP.

Quentin C, Bagheri R, Ugbolue UC, Coudeyre E, Pélissier C, Descatha A, Menini T, Bouillon-Minois JB, Dutheil F. Effect of Home Exercise Training in Patients with Nonspecific Low-Back Pain: A Systematic Review and Meta-Analysis. Int J Environ Res Public He

INVOLVING PATIENTS AND CLINICIANS IN A PILOT RANDOMISED CLINICAL TRIAL OF SPINAL MANUAL THERAPY VERSUS NERVE ROOT INJECTION FOR LUMBAR RADICULOPATHY: PROTOCOL OF A PATIENT AND PUBLIC INVOLVEMENT PROJECT

Date & Journal: BMJ Open . 2022 Apr 25.

Abstract

Introduction: A patient and public involvement (PPI) project will be embedded within the SALuBRITY pilot trial, a two parallel group, double sham controlled, randomised clinical trial. The study aims to compare the effectiveness of spinal manual therapy and corticosteroid nerve root injections, two methods commonly used to treat patients with lumbar radiculopathy. We aim to gather patients' and clinicians' perspectives and involve them in decisions related to the research question and objectives, proposed trial recruitment processes and methods, and proposed outcome measures.

Methods & Analysis: A small group of patients with lived experience of lumbar radiculopathy and primary care clinicians with experience in the treatment of patients with lumbar radiculopathy are involved. An initial kickoff event will prepare and empower the advisors for involvement in the project, followed by semistructured patient group and one-on-one clinician interviews. We will follow the Critical Outcomes of Research Engagement framework for assessing the impact of patient engagement in research. We will summarise and feedback PPI content to the patient and clinician advisors during a member-checking process to ensure accurate interpretation of patient and clinician inputs. Inductive and deductive thematic analysis will be used for the qualitative analysis of the interviews. Two surveys will be completed at different points along the trial to track the advisors' and researchers' experiences over the course of the PPI project. Any modifications to the SALuBRITY trial methods due to PPI inputs will be thoroughly documented and recorded in an impact log.

Ethics and dissemination: The independent research ethics committee of Canton Zurich confirmed that ethical approval for this PPI subproject was not required. PPI results will be disseminated in a peer-reviewed journal and presented at conferences.

Ryf C, Hofstetter L, Clack L, Puhan MA, Hincapié CA. Involving patients and clinicians in a pilot randomised clinical trial of spinal manual therapy versus nerve root injection for lumbar radiculopathy: protocol of a patient and public involvement project

TREATING 'SLOUCHY' (HYPERKYPHOSIS) POSTURE WITH CHIROPRACTIC BIOPHYSICS®: A CASE REPORT UTILIZING A MULTIMODAL MIRROR IMAGE® REHABILITATION PROGRAM.

DATE & JOURNAL: J PHYS THER SCI. 2017 AUG

- Purpose: To present a case of the non-surgical reduction of 'slouchy' hyperkyphosis posture utilizing the multimodal Chiropractic BioPhysics® rehabilitation program emphasizing the mirror image® concept.

- Results: After 6-months of treatment the patient displayed a total correction of the posterior thoracic translation with a significant reduction in thoracic hyperkyphosis. The dramatic correction of her overall posture and spine alignment corresponded to the significant relief of neck and back pains, headaches and improvement of various other health issues as demonstrated by self-report and SF-36.

- Conclusion: Poor postures corresponding to poor health can be changed for the better with multimodal rehabilitation programs that are now showing consistent postural improvements corresponding with improvements in various health conditions. We suggest that the postural correction of those with various pain symptoms be considered as a first line non-pharmalogical, non-surgical rehabilitation approach for those presenting with poor posture.

Fortner MO, Oakley PA, Harrison DE. Treating 'slouchy' (hyperkyphosis) posture with chiropractic biophysics®: a case report utilizing a multimodal mirror image® rehabilitation program. J Phys Ther Sci. 2017 Aug;29(8):1475-1480. doi: 10.1589/jpts.29.1475.

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CORRECTION OF PSEUDOSCOLIOSIS (LATERAL THORACIC TRANSLATION POSTURE) FOR THE TREATMENT OF LOW BACK PAIN: A CBP® CASE REPORT.

DATE & JOURNAL: J PHYS THER SCI. 2018 SEP

- [Purpose] To present the case of a total reduction of pseudoscoliosis spinal deformity in an adult female suffering from recurrent back pains.

- [Results] The patient achieved a complete reduction of the lateral thoracic translation posture (pseudoscoliosis) as indicated on a post-treatment radiograph after 36 total treatments. Most orthopedic tests became normalized and the patients back pains were significantly improved after the correction of posture, but only slight improvements after the initial 12 sessions of manipulative therapy only.

- [Conclusion] Pseudoscoliosis is structurally reducible by use of CBP® mirror image® lateral translation traction methods and exercises and led to the resolution of back pains in this case. The diagnosis of pseudoscoliosis as opposed to true scoliosis is very important and likely underdiagnosed in common practice. Upright radiographic imaging is essential to differentiate these two spinal disorders and offers no harm to the patient. Comprehensive assessment including routine use of x-ray is recommended to differentiate between spinal disorders.

Henshaw M, Oakley PA, Harrison DE. Correction of pseudoscoliosis (lateral thoracic translation posture) for the treatment of low back pain: a CBP® case report. J Phys Ther Sci. 2018 Sep;30(9):1202-1205. doi: 10.1589/jpts.30.1202. Epub 2018 Sep 4. PMID: 30

POSTURE-RELATED STIFFNESS MAPPING OF PARASPINAL MUSCLES.

DATE & JOURNAL: J PHYS THER SCI. 2018 SEP

The paraspinal compartment acts as a bone-muscle composite beam of the spine. The elastic properties of the paraspinal muscles play a critical role in spine stabilization. These properties depend on the subjects' posture, and they may be drastically altered by low back pain. Supersonic shear wave elastography can be used to provide quantitative stiffness maps (elastograms), which characterize the elastic properties of the probed tissue. The aim of this study was to challenge shear wave elastography sensitivity to postural stiffness changes in healthy paraspinal muscles. The stiffness of the main paraspinal muscles (longissimus, iliocostalis, multifidus) was measured by shear wave elastography at the lumbosacral level (L3 and S1) for six static postures performed by volunteers. Passive postures (rest, passive flexion, passive extension) were performed in a first shear wave elastography session, and active postures (upright, bending forward, bending backward) with rest posture for reference were performed in a second session. Measurements were repeated three times for each posture. Sixteen healthy young adults were enrolled in the study. Non-parametric paired tests, multiple analyses of covariance, and intra-class correlations were implemented for analysis. Shear wave elastography showed good to excellent reliability, except in the multifidus at S1, during bending forward, and in the multifidus at L3, during bending backward. Yet, during bending forward, only poor quality was recorded for nine volunteers in the longissimus. Significant intra- and inter-muscular changes were observed with posture. Stiffness significantly increased for the upright position and bending forward with respect to the reference values recorded in passive postures. In conclusion, shear wave elastography allows reliable assessment of the stiffness of the paraspinal muscles except in the multifidus at S1 and longissimus, during bending forward, and in the multifidus at L3, during bending backward. It reveals a different biomechanical behaviour for the multifidus, the longissimus, and the iliocostalis.

Creze M, Bedretdinova D, Soubeyrand M, Rocher L, Gennisson JL, Gagey O, Maître X, Bellin MF. Posture-related stiffness mapping of paraspinal muscles. J Anat. 2019 Jun;234(6):787-799. doi: 10.1111/joa.12978. Epub 2019 Mar 22. PMID: 30901090; PMCID: PMC6539

MUSCULOSKELETAL DISORDER AND PAIN ASSOCIATED WITH SMARTPHONE USE: A SYSTEMATIC REVIEW OF BIOMECHANICAL EVIDENCE.

DATE & JOURNAL: HONG KONG PHYSIOTHER J. 2018 DEC

The number of smartphone users is growing dramatically. Using the smartphone frequently forces the users to adopt an awkward posture leading to an increased risk of musculoskeletal disorders and pain. The objective of this study is to conduct a systematic review of studies that assess the effect of smartphone use on musculoskeletal disorders and pain. A systematic literature search of AMED, CINAHL, PubMed, Proquest, ScienceDirect using specific keywords relating to smartphone, musculoskeletal disorders and pain was conducted. Reference lists of related papers were searched for additional studies. Methodological quality was assessed by two independent reviewers using the modified Downs and Black checklist. From 639 reports identified from electronic databases, 11 were eligible to include in the review. One paper was found from the list of references and added to the review. The quality scores were rated as moderate. The results show that muscle activity of upper trapezius, erector spinae and the neck extensor muscles are increased as well as head flexion angle, head tilt angle and forward head shifting which increased during the smartphone use. Also, smartphone use in a sitting position seems to cause more shift in head-neck angle than in a standing position. Smartphone usage may contribute to musculoskeletal disorders. The findings of the included papers should be interpreted carefully in light of the issues highlighted by the moderate-quality assessment scores.

Eitivipart AC, Viriyarojanakul S, Redhead L. Musculoskeletal disorder and pain associated with smartphone use: A systematic review of biomechanical evidence. Hong Kong Physiother J. 2018 Dec;38(2):77-90. doi: 10.1142/S1013702518300010. Epub 2018 Aug 14. P

A review of current medical literature including forward head posture, proprioception posture, and conditions caused by poor posture.

CHIROPRACTIC CURRENT LITERATURE REVIEW: ADDITIONAL RESEARCH

DOCTORS OF CHIROPRACTIC WORKING WITH OR WITHIN INTEGRATED HEALTHCARE DELIVERY SYSTEMS: A SCOPING REVIEW PROTOCOL

Date & Journal: BMJ Open . 2021 Jan 25.

Abstract

Introduction: Back and neck pain are the leading causes of disability worldwide. Doctors of chiropractic (DCs) are trained to manage these common conditions and can provide non-pharmacological treatment aligned with international clinical practice guidelines. Although DCs practice in over 90 countries, chiropractic care is rarely available within integrated healthcare delivery systems. A lack of DCs in private practice, particularly in low-income communities, may also limit access to chiropractic care. Improving collaboration between medical providers and community-based DCs, or embedding DCs in medical settings such as hospitals or community health centres, will improve access to evidence-based care for musculoskeletal conditions.

Methods and analyses: This scoping review will map studies of DCs working with or within integrated healthcare delivery systems. We will use the recommended six-step approach for scoping reviews. We will search three electronic data bases including Medline, Embase and Web of Science. Two investigators will independently review all titles and abstracts to identify relevant records, screen the full-text articles of potentially admissible records, and systematically extract data from selected articles. We will include studies published in English from 1998 to 2020 describing medical settings that have established formal relationships with community-based DCs (eg, shared medical record) or where DCs practice in medical settings. Data extraction and reporting will be guided by the Proctor Conceptual Model for Implementation Research, which has three domains: clinical intervention, implementation strategies and outcome measurement. Stakeholders from diverse clinical fields will offer feedback on the implications of our findings via a web-based survey.

Roseen EJ, Kasali BA, Corcoran K, Masselli K, Laird L, Saper RB, Alford DP, Cohen E, Lisi A, Atlas SJ, Bean JF, Evans R, Bussières A. Doctors of chiropractic working with or within integrated healthcare delivery systems: a scoping review protocol. BMJ Ope

CHIROPRACTIC CASE REPORTS: A REVIEW AND BIBLIOMETRIC ANALYSIS

Date & Journal: Chiropr Man Therap . 2021 Apr 28.

Abstract

Objective: To determine publication trends, gaps, and predictors of citation of chiropractic case reports (CRs).

Results: The search identified 1176 chiropractic CRs meeting selection criteria. There was an increasing trend of CRs having a case management topic, non-spinal focus, non-chiropractic journal, neuromusculoskeletal-focus, diagnosis of vascular pathology, and a decreasing trend of adverse effect vascular pathology CRs. Independent predictors of greater total citations (or citation rate) included ICD-10 categories of perinatal conditions, infections, "case" in title, case management topic, and physical therapy, integrative, and dental journal type. Predictors of fewer citations included diseases of the blood, neoplasms, other findings not elsewhere classified, a title > 11 words, and multidisciplinary authorship. ICD-10 categories describing non-musculoskeletal diseases and special populations such as pediatrics, pregnancy, and perinatal conditions had few CRs.

Conclusion: Chiropractic CRs are diversifying from spine-related topics. Chiropractors are encouraged to publish objective, structured CRs within defined research gaps. Published CRs can inform the design of future research studies with a higher level of clinical relevance and evidence.

Trager RJ, Dusek JA. Chiropractic case reports: a review and bibliometric analysis. Chiropr Man Therap. 2021 Apr 28;29(1):17. doi: 10.1186/s12998-021-00374-5. PMID: 33910610; PMCID: PMC8080364.

"DOING OUR BEST FOR PATIENT SAFETY" : AN INTERNATIONAL AND INTERPROFESSIONAL QUALITATIVE STUDY WITH SPINAL MANIPULATIVE THERAPY PROVIDERS IN COMMUNITY-BASED SETTINGS

Date & Journal: Musculoskelet Sci Pract . 2021 Dec.

Abstract

Background: Patient safety research is expanding from hospitals to community-based healthcare settings. Knowledge gaps persist among manual therapy professions that may impede patient safety initiatives within musculoskeletal care settings.

Objectives: To describe perceptions of patient safety among chiropractors and physiotherapists who provide spinal manipulation therapy (SMT).

Conclusion: Findings align with World Health Organization guiding principles that the nature of healthcare settings influence patient safety strategies. Most responses focused on individual strategies to prevent adverse events. However, this approach may overlook the benefits of identifying and documenting adverse events, setting time to discuss adverse events with clinic members, standardizing clinical practices, and building transparent patient safety cultures across healthcare professions and settings.

Funabashi M, Holmes MM, Pohlman KA, Salsbury S, O'Beirne M, Vohra S, Mior S. "Doing our best for patient safety": An international and interprofessional qualitative study with spinal manipulative therapy providers in community-based settings. Musculoskele\

DEVELOPMENT OF A MANNEQUIN LAB FOR CLINICAL TRAINING IN A CHIROPRACTIC PROGRAM

Date & Journal: J Chiropr Educ . 2022 Mar 31.

Abstract

Introduction: Faced with COVID-19 safety protocols that severely limited the ability to conduct chiropractic technique instruction in the usual manner, our university invested the resources to develop a new mannequin lab for hands-on training, which would help supplement the loss of person-to-person contact.

Methods: Training mannequins could enable student learning of palpation and adjustment skills while avoiding close human-human contact. The university had developed a mannequin over the previous 4 years consisting of a full-sized human torso with individually movable and palpable vertebrae, pelvis, and thighs. In the mannequin, 64 pressure sensors are attached to particular vertebral and skeletal landmarks and provide feedback on palpation location and level of force applied. We assembled 3 teams to produce 20 copies of that mannequin for student use.

Results: Mannequins were produced in 7 weeks, and space was built out for a special lab. Faculty members are developing classroom procedures to introduce the mannequin to students, phase in the skills from static and motion palpation, and practice thrust performance.

Conclusion: The production run was successful, and the resulting equipment, well-received by students and faculty. In addition to helping teach manual skills, the lab serves as a platform for educational research to test the efficacy of mannequin-based training protocols. With the pressure sensors on known locations along the spine, future research may be able to test the ability of students to identify and contact specific target locations for adjustive thrusts.

Owens EF, Dever LL, Hosek RS, Russell BS, Dc SS. Development of a mannequin lab for clinical training in a chiropractic program. J Chiropr Educ. 2022 Mar 31. doi: 10.7899/JCE-21-10. Epub ahead of print. PMID: 35394042.

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Abstract

Introduction: Faced with COVID-19 safety protocols that severely limited the ability to conduct chiropractic technique instruction in the usual manner, our university invested the resources to develop a new mannequin lab for hands-on training, which would help supplement the loss of person-to-person contact.

Methods: Training mannequins could enable student learning of palpation and adjustment skills while avoiding close human-human contact. The university had developed a mannequin over the previous 4 years consisting of a full-sized human torso with individually movable and palpable vertebrae, pelvis, and thighs. In the mannequin, 64 pressure sensors are attached to particular vertebral and skeletal landmarks and provide feedback on palpation location and level of force applied. We assembled 3 teams to produce 20 copies of that mannequin for student use.

Results: Mannequins were produced in 7 weeks, and space was built out for a special lab. Faculty members are developing classroom procedures to introduce the mannequin to students, phase in the skills from static and motion palpation, and practice thrust performance.

Conclusion: The production run was successful, and the resulting equipment, well-received by students and faculty. In addition to helping teach manual skills, the lab serves as a platform for educational research to test the efficacy of mannequin-based training protocols. With the pressure sensors on known locations along the spine, future research may be able to test the ability of students to identify and contact specific target locations for adjustive thrusts.

Owens EF, Dever LL, Hosek RS, Russell BS, Dc SS. Development of a mannequin lab for clinical training in a chiropractic program. J Chiropr Educ. 2022 Mar 31. doi: 10.7899/JCE-21-10. Epub ahead of print. PMID: 35394042.

MITIGATING GAIT DECLINE IN A WOMAN WITH PARKINSON'S DISEASE: A CASE REPORT

Date & Journal: J Med Cases . 2022 Mar.

Abstract

Levodopa therapy is the standard pharmacological treatment for Parkinson's disease (PD). However, after an initial period of significant benefit, the effects of levodopa begin to wear off. This results in a reduction in the effect duration and the development of motor complications. We describe the case of a 69-year-old woman presented with a 3-year history of lower back pain and progressive left leg weakness. One year prior to referral for neurological assessment, the patient first noted progressive leg weakness and insufficient strength to rise from a chair. The diagnosis of PD was made after excluding potential neurological disorders. The patient was initially started on oral levodopa, which improved her motor symptoms considerably during the first year. However, dose adjustment and combined pharmacological strategies failed to sufficiently control motor symptoms during the subsequent year. The patient experienced declines in gait ability, clumsiness in the left limbs, and difficulty in performing housework. The patient then sought chiropractic attention. Gait rehabilitation was the major goal in the treatment program for this patient, with the impression of motor complications of PD. The intervention consisted of spinal manipulation, intermittent motorized traction of the lumbar segments, and gait training programs. Following 3 months of the intervention, the patient demonstrated increased muscle strength and improved gait characteristics, as depicted by a gait cyclogram and vertical ground reaction force graphing. The current report illustrates that a multicomponent chiropractic approach may be used as an additional measure to mitigate gait decline in PD patients.

Chu EC, Wong AY. Mitigating Gait Decline in a Woman With Parkinson's Disease: A Case Report. J Med Cases. 2022 Mar;13(3):140-144. doi: 10.14740/jmc3856. Epub 2022 Mar 5. PMID: 35356393; PMCID: PMC8929208.

SPINAL MANIPULATION VS PRESCRIPTION DRUG THERAPY FOR CHRONIC LOW BACK PAIN: BELIEFS, SATISFACTION WITH CARE, AND QUALIFY OF LIFE AMONG OLDER MEDICARE BENEFICIARIES

Date & Journal: J Manipulative Physiol Ther . 2022 Mar 26.

Abstract

Objective: The objective of this study was to compare patients' perspectives on the use of spinal manipulative therapy (SMT) compared to prescription drug therapy (PDT) with regard to health-related quality of life (HRQoL), patient beliefs, and satisfaction with treatment.

Results: Recipients of SMT were more likely to be very satisfied with their care (84%) than recipients of PDT (50%; P = .002). The SMT cohort self-reported significantly higher HRQoL compared to the PDT cohort; mean differences in physical and mental health scores on the 12-item Short Form Health Survey were 12.85 and 9.92, respectively. The SMT cohort had a lower degree of concern regarding chiropractic care for their back pain compared to the PDT cohort's reported concern about PDT (P = .03).

Conclusion: Among older Medicare beneficiaries with chronic low back pain, long-term recipients of SMT had higher self-reported rates of HRQoL and greater satisfaction with their modality of care than long-term recipients of PDT. Participants who had longer-term management of care were more likely to have positive attitudes and beliefs toward the mode of care they received.

Kizhakkeveettil A, Bezdjian S, Hurwitz EL, Toler AWJ, Rossi D, Uptmor S, Sagester K, Bangash M, MacKenzie TA, Lurie JD, Coulter I, Haldeman S, Whedon JM. Spinal Manipulation vs Prescription Drug Therapy for Chronic Low Back Pain: Beliefs, Satisfaction Wit

IMPROVEMENTS IN CERVICAL SPINAL CANAL DIAMETER AND NECK DISABILITY FOLLOWING CORRECTION OF CERVICAL LORDOSIS AND CERVICAL SPONDYLOLISTHESES USING CHIROPRACTIC BIOPHYSICS TECHNIQUE: A CASE SERIES.

DATE & JOURNAL: J RADIOL CASE REP . 2020 APR 30

Abstract

Cervical spondylolisthesis indicates instability of the spine and can lead to pain, radiculopathy, myelopathy and vertebral artery stenosis. Currently degenerative cervical spondylolisthesis is a wait-and-watch condition with no treatment guidelines. A literature review and discussion will be provided. 8 females presented with neck pain, disability, and history of motor vehicle collision. Radiographs revealed abnormal cervical alignment, spinal canal narrowing, and spondylolistheses. After 30 sessions of Chiropractic BioPhysics® care over 12 weeks, patients reported improved symptoms and disabilities. Radiographs revealed improvements in cervical alignment, spondylolistheses, and spinal canal diameter. Motor vehicle collision may cause instability and abnormal alignment of the cervical spine leading to cervical spondylolisthesis. Improving spinal alignment may be an effective treatment to reduce vertebral subluxation and cervical spondylolistheses and improve neck disability as a result of improved spinal alignment.

Fedorchuk C, Lightstone DF, Comer RD, Katz E, Wilcox J. Improvements in Cervical Spinal Canal Diameter and Neck Disability Following Correction of Cervical Lordosis and Cervical Spondylolistheses Using Chiropractic BioPhysics Technique: A Case Series. J R

BEST PRACTICES FOR CHIROPRACTIC MANAGEMENT OF PATIENTS WITH CHRONIC MUSCULOSKELETAL PAIN: A CLINICAL PRACTICE GUIDELINE.

DATE & JOURNAL: J ALTERN COMPLEMENT MED . 2020 OCT.

Abstract

Objective: To develop an evidence-based clinical practice guideline (CPG) through a broad-based consensus process on best practices for chiropractic management of patients with chronic musculoskeletal (MSK) pain.

Results: The Delphi process was conducted January-February 2020. The 62-member Delphi panel reached consensus on chiropractic management of five common chronic MSK pain conditions: low-back pain (LBP), neck pain, tension headache, osteoarthritis (knee and hip), and fibromyalgia. Recommendations were made for nonpharmacological treatments, including acupuncture, spinal manipulation/mobilization, and other manual therapy; modalities such as low-level laser and interferential current; exercise, including yoga; mind-body interventions, including mindfulness meditation and cognitive behavior therapy; and lifestyle modifications such as diet and tobacco cessation. Recommendations covered many aspects of the clinical encounter, from informed consent through diagnosis, assessment, treatment planning and implementation, and concurrent management and referral. Appropriate referral and co-management were emphasized.

Conclusions: These evidence-based recommendations for a variety of conservative treatment approaches to the management of common chronic MSK pain conditions may advance consistency of care, foster collaboration between provider groups, and thereby improve patient outcomes.

Hawk C, Whalen W, Farabaugh RJ, Daniels CJ, Minkalis AL, Taylor DN, Anderson D, Anderson K, Crivelli LS, Cark M, Barlow E, Paris D, Sarnat R, Weeks J. Best Practices for Chiropractic Management of Patients with Chronic Musculoskeletal Pain: A Clinical Pra

EVALUATION OF THE EFFECT OF CHIROPRACTIC MANIPULATIVE TREATMENT ON OXIDATIVE STRESS IN SACROILIAC JOINT DYSFUNCTION.

DATE & JOURNAL: TURK J PHYS MED REHABIL . 2020 MAY 18

Abstract

Objectives:

This study aims to investigate the effect of chiropractic manipulative treatment on sacroiliac joint dysfunction (SIJD) and its relationship to oxidative stress (OXS) parameters.

Results:

Prior to treatment, we demonstrated that serum native thiol (μmol/L) and total thiol (μmol/L) levels in the patient group were lower compared to control subjects. Serum IMA levels were higher in the patient group. There was no change in OXS parameters after manipulative treatment in the patient group.

Conclusion:

Manipulation is useful in SIJD. Thiol/disulphide homeostasis and serum IMA levels may be used to measure the OXS in patients with SIJD.

Kültür T, Çiftçi A, Okumuş M, Doğan M, Arıkan Durmaz Ş, Neşelioğlu S, Erel Ö. Evaluation of the effect of chiropractic manipulative treatment on oxidative stress in sacroiliac joint dysfunction. Turk J Phys Med Rehabil. 2020 May 18;66(2):176-183. doi: 10.

RESTORING LUMBAR LORDOSIS: A SYSTEMATIC REVIEW OF CONTROLLED TRIALS UTILIZING CHIROPRACTIC BIO PHYSICS ® (CBP ®) NON-SURGICAL APPROACH TO INCREASING LUMBAR LORDOSIS IN THE TREATMENT OF LOW BACK DISORDERS.

DATE & JOURNAL: J PHYS THER SCI . 2020 SEP.

Abstract

[Purpose] To systematically review controlled trial evidence for the use of lumbar extension traction by Chiropractic BioPhysics® methods for the purpose of increasing lumbar lordosis in those with hypolordosis and low back disorders.

[Results] Four articles detailing 2 randomized and 1 non-randomized trial were located. Trials demonstrated increases in radiographic measured lordosis of 7-11°, over 10-12 weeks, after 30-36 treatment sessions. Randomized trials demonstrated traction treated groups mostly maintained lordosis correction, pain relief, and disability after 6-months follow-up. The non-randomized trial showed lordosis and pain intensity were maintained with periodic maintenance care for 1.5 years. Importantly, control/comparison groups had no increase in lumbar lordosis. Randomized trials showed comparison groups receiving physiotherapy-less the traction, had temporary pain reduction during treatment that regressed towards baseline levels as early as 3-months after treatment.

[Conclusion] Limited but good quality evidence substantiates that the use of extension traction methods in rehabilitation programs definitively increases lumbar hypolordosis. Preliminarily, these studies indicate these methods provide longer-term relief to patients with low back disorders versus conventional rehabilitation approaches tested.

Oakley PA, Ehsani NN, Moustafa IM, Harrison DE. Restoring lumbar lordosis: a systematic review of controlled trials utilizing Chiropractic Bio Physics® (CBP®) non-surgical approach to increasing lumbar lordosis in the treatment of low back disorders. J Ph

TREATMENT OF PATIENTS WITH LOW BACK PAIN: A COMPARISON OF PHYSICAL THERAPY AND CHIROPRACTIC MANIPULATION.

DATE & JOURNAL: HEALTHCARE (BASEL) . 2020 FEB 24.

Abstract

Low back pain (LBP) is a pandemic and costly musculoskeletal condition in the United States (U.S.). Patients with LBP may endure surgery, injections, and expensive visits to emergency departments. Some suggest that using physical therapy (PT) or chiropractic in the earlier stage of LBP reduces the utilization of expensive health services and lowers the treatment costs. Given that there are costs and benefits with each of these treatments, the remaining question is in a short period of time which of these treatments is optimal. The purpose of this study was to investigate the cost-effectiveness of chiropractic versus PT in the U.S. A decision tree analytic model was used for estimating the economic outcomes. The findings showed that the total average cost in the chiropractic group was $48.56 lower than the PT group. The findings also showed that the daily adjusted life years (DALY) in the chiropractic group was 0.0043 higher than the PT group. Chiropractic care was shown to be a cost-effective alternative compared with PT for adults with at least three weeks of LBP over six months.

Khodakarami N. Treatment of Patients with Low Back Pain: A Comparison of Physical Therapy and Chiropractic Manipulation. Healthcare (Basel). 2020 Feb 24;8(1):44. doi: 10.3390/healthcare8010044. PMID: 32102417; PMCID: PMC7151187.

Thank you, Docs!

A brief evaluation survey will be emailed to you in the coming days.
Please fill out the evaluation ASAP & press “submit”.

Hope you enjoyed the seminar and I thank you for your continued support!
We really appreciate all of you!

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