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Present by:
Philip Arnone DC

EXAMINING CLINICAL OPINION AND EXPERIENCE REGARDING UTILIZATION OF PLAIN RADIOGRAPHY OF THE SPINE; EVIDENCE FROM SURVEYING THE CHIROPRACTIC PROFESSION

Abstract:

Plain Radiography of the spine (PROTS) is utilized in many forms of healthcare including the chiropractic profession; however, the literature reflects conflicting opinions regarding utilization and value. Despite being an essential part of Evidence-Based Practice (EBP), few studies assess Doctors of Chiropractic (DCs) clinical opinions and experience regarding the utilization of (PROTS) in practice. In this study, DCs were surveyed regarding utilization of PROTS in practice. The survey was administered to an estimated 50,000 licensed DCs by email. A total of 4301 surveys were completed, of which 3641 were United States (US) DCs. The Clinician Opinion and Experience on Chiropractic Radiography (COECR) scale was designed to analyze survey responses. This valid and reliable scale demonstrated good internal consistency using confirmatory factor analysis and the Rasch model. Survey responses show that 73.3% of respondents utilize PROTS in practice and 26.7% refer patients out for PROTS. Survey responses show that, among US DCs, 91.9% indicate PROTS has value beyond identification of pathology, 86.7% indicate that PROTS is important regarding biomechanical analysis of the spine, 82.9% indicate that PROTS is vital to practice, 67.4% indicate that PROTS aids in measuring outcomes, 98.6% indicate the opinion that PROTS presents very low to no risk to patients, and 93.0% indicate that sharing clinical findings from PROTS studies with patients is beneficial to clinical outcomes. The results of the study indicated that based on clinical experience, the majority of DCs find PROTS to be vital to practice and valuable beyond the identification of red flags.

Plain Radiography: A Unique and Essential Component of Spinal Assessment and Predictive Health

Abstract

Objective. An overview of 450 research articles that support measuring biomechanical alignment of the spine utilizing plain radiography for prognosis and treatment; however, there are contrasting models of radiographic utilization supporting both the expansion and reduction of plain radiography within the conservative research. This review examines the following primary outcomes: (1) quantitative results concerning radiographic evaluation of the spine; (2) method and quality of radiographic measurement; (3) method and quality of non-radiographic measurement. (4) Biomechanical measurements that are predictive for future health and unique to radiographic analysis

Materials and Methods. Using three research databases, the authors examined 150 articles that met the study criteria. These articles were reviewed, summarized, and categorized into one of several relevant categories.

This is the first publication of its kind regarding the clinical opinion of the chiropractic profession pertaining to the utilization of Plain Radiography of the Spine (PROTS)

This paper is more about the Why than the what!

Why is clinical Opinion Important?

NUCCA practitioner for 34 years

I learned NUCCA from Ralph Gregory and many other NUCCA legends

Other Mentors

Weldon Muncy
Burl Pettibon
Burt Pierce
Clay Thompson
Don Harrison
Michael Kale

Patient care sometimes requires a toolbox

NUCCA

An incredible technique

Precise, Predictable & Repeatable – based on physics

The only UPC hand adjustment that does not require a thrust and creates an audible

Inter-Examiner Agreement of the National Upper Cervical Chiropractic Association Analysis of the Atlas Subluxation Complex in a 3-View Upper Cervical Radiographic Series

Jordan Landholm-Duvall, DC, DCCJP, a D. Gordon Hasick, DC, a Harrison Ndetan, MPH, MD, PhD, b John F. Hart, DC, MHSc, c Marshall Dickholtz Jr, DC, a and Craig P. Lapenski, DC

Objective:

The purpose of this study was to measure the inter-examiner agreement between radiograph markings of 2 National Upper Cervical Chiropractic Association board-certified chiropractors. Methods: Two chiropractic examiners who had standardized training marked and analyzed 254 conventional orthogonal radiographic film sets. The level of agreement and potential biases in their measurements were assessed using intraclass correlation coefficients for absolute agreement and Bland-Altman plot analyses.

Results:

There was 96.1% agreement between the examiners in the measurements of the side of atlas laterality and 94.5% for atlas rotation. The intraclass correlation coefficient was 0.95 (95% CI, 0.93-0.96) for atlas laterality and 0.92 (95% CI, 0.89-0.94) for atlas rotation. The mean difference in the measurement between the 2 examiners was 0.11, P = .12 for atlas laterality and 0.05, P = .55 for atlas rotation. Neither atlas laterality nor atlas rotation measurements were significantly different from zero. Bland-Altman plots were not suggestive of any proportional biases in the 2 measurements.

Conclusion:

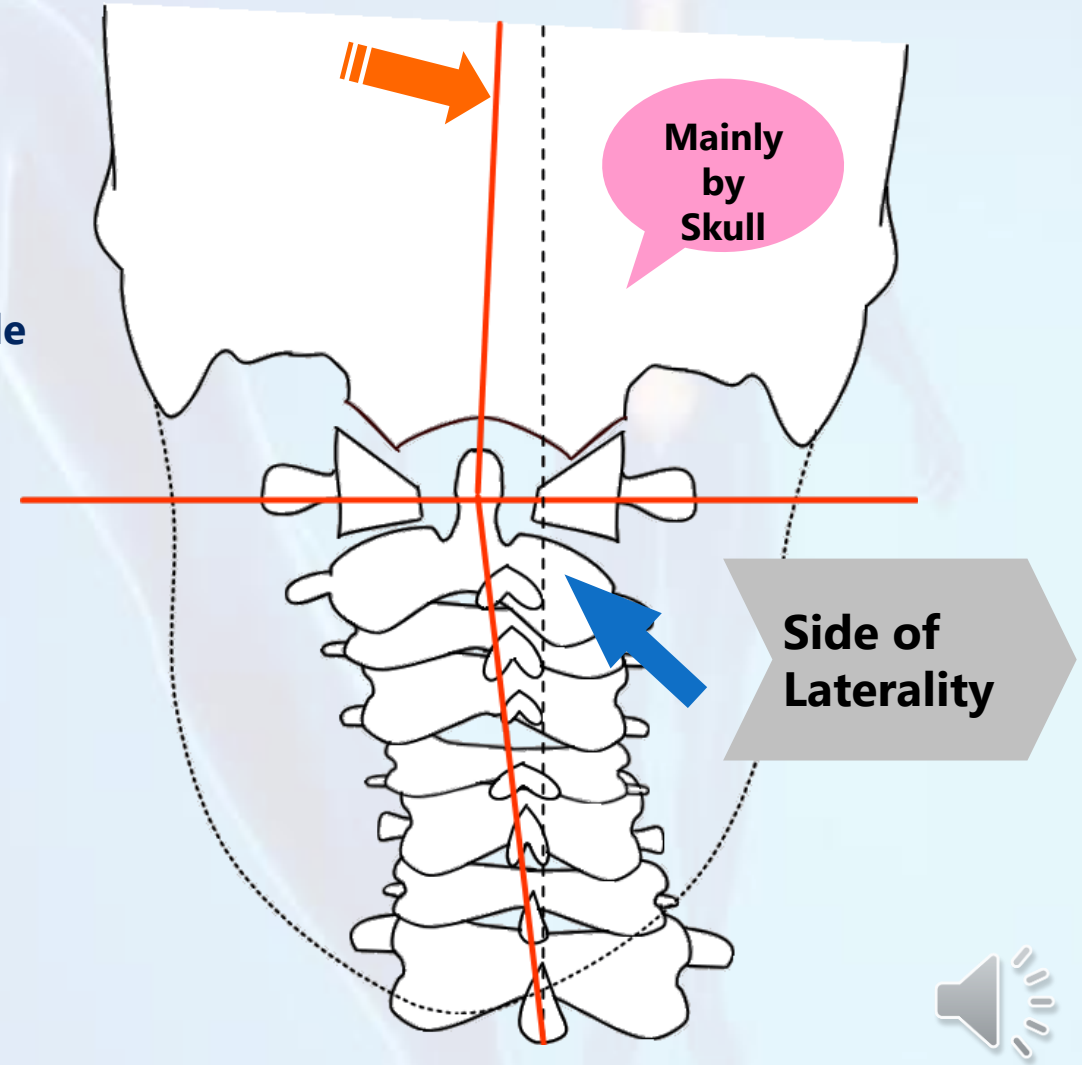
Results of this study show almost perfect agreement between 2 trained chiropractic examiners, with no apparent proportional bias in the analysis of conventional orthogonal radiographic film sets.

https://www.sciencedirect.com/science/article/pii/S1556370723000238

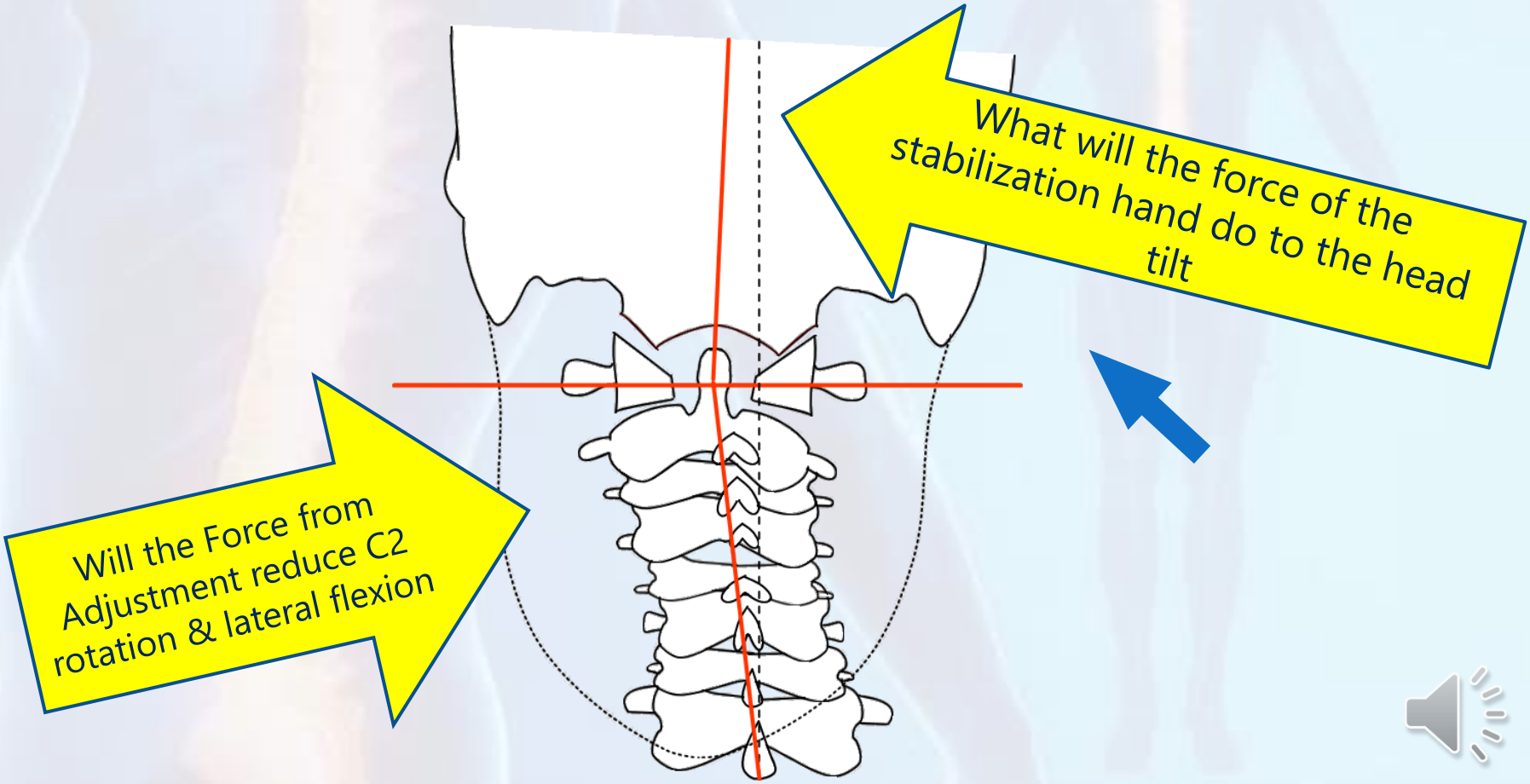
Type 2 Misalignment

Characteristics

- C1 laterality on the opposite side of angular rotation
- Ipsilateral acute angle
- Skull is tipped toward vertical axis
- C1 remains fairly horizontal
- Laterality produced mainly by skull



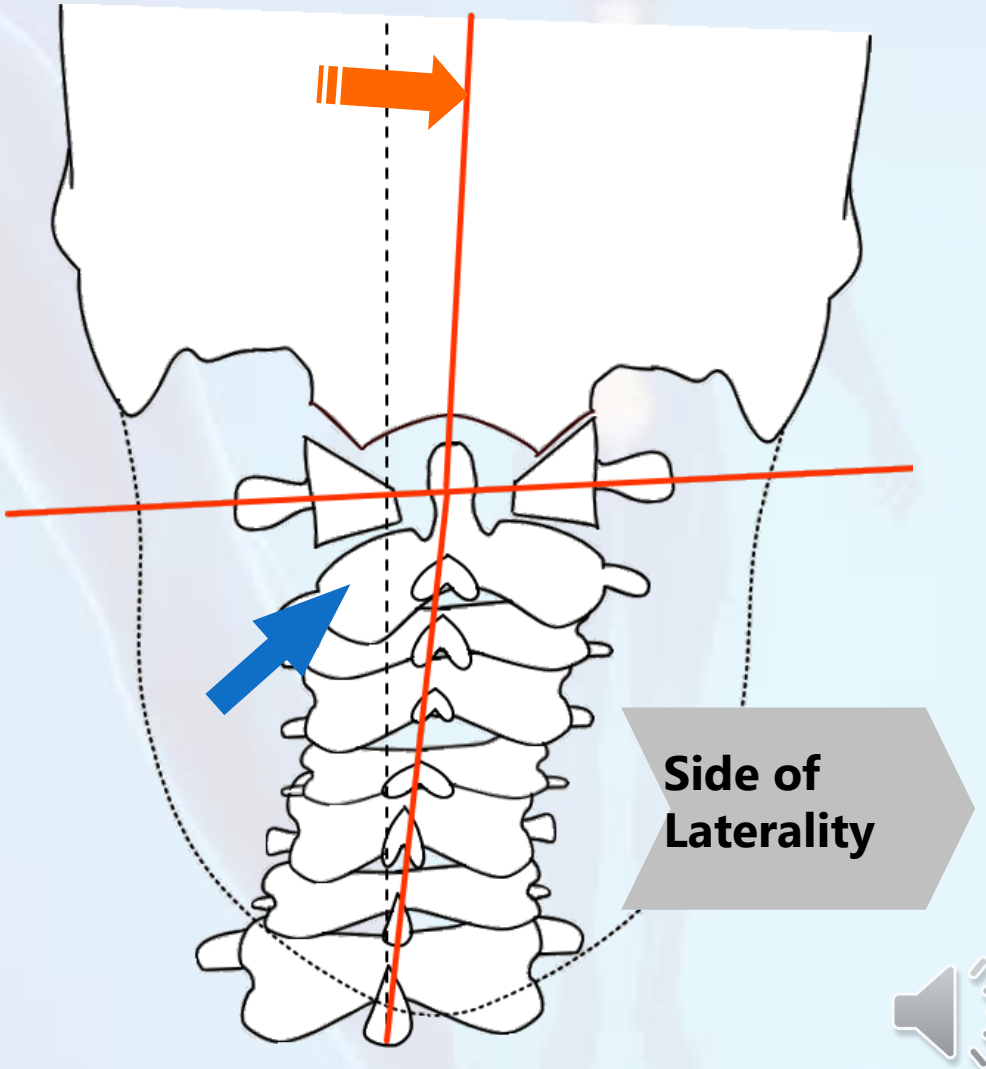
How would this Misalignment respond to a diversified adjustment on the left to a posterior C2 contact ?



Type 4 Misalignment

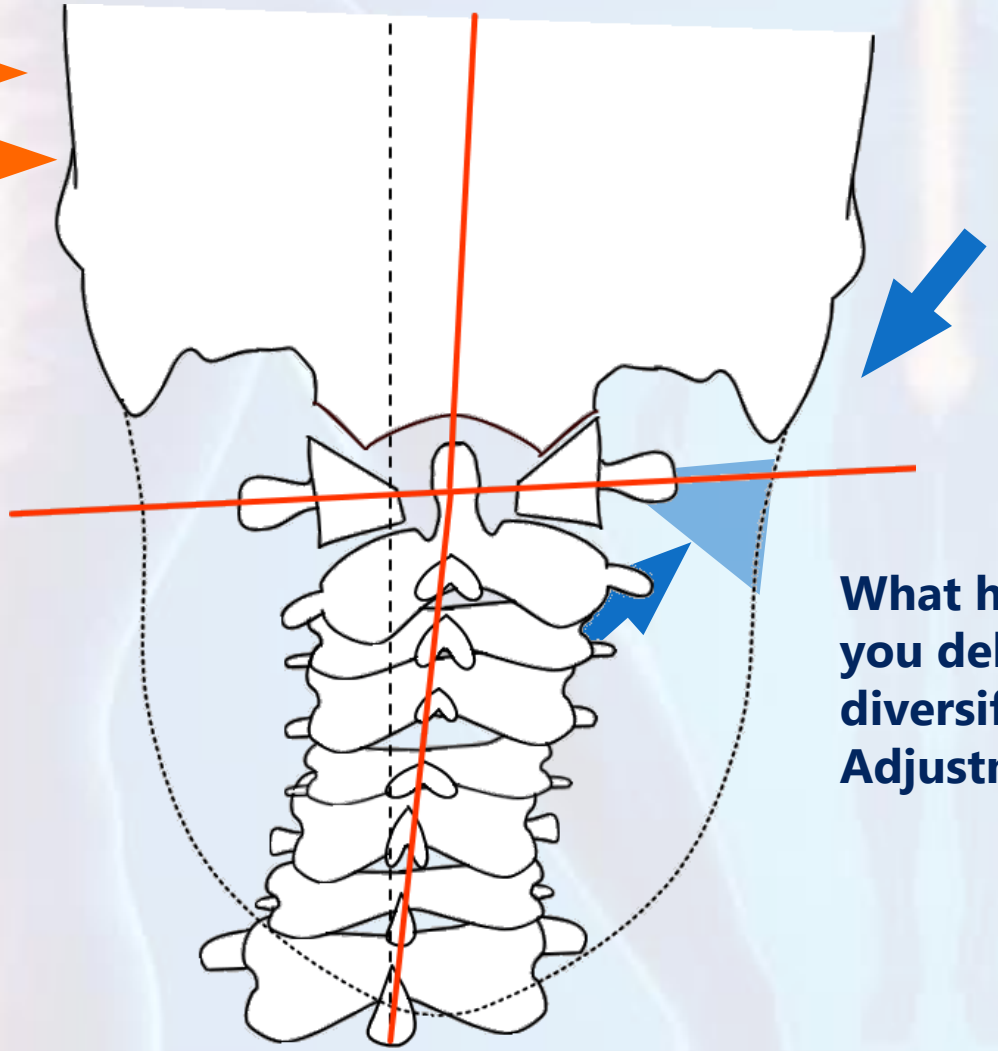
Characteristics

- C1 laterality on the same side of angular rotation
- Contralateral acute angle
- Skull is tilted away from vertical axis
- C1 is above parallel



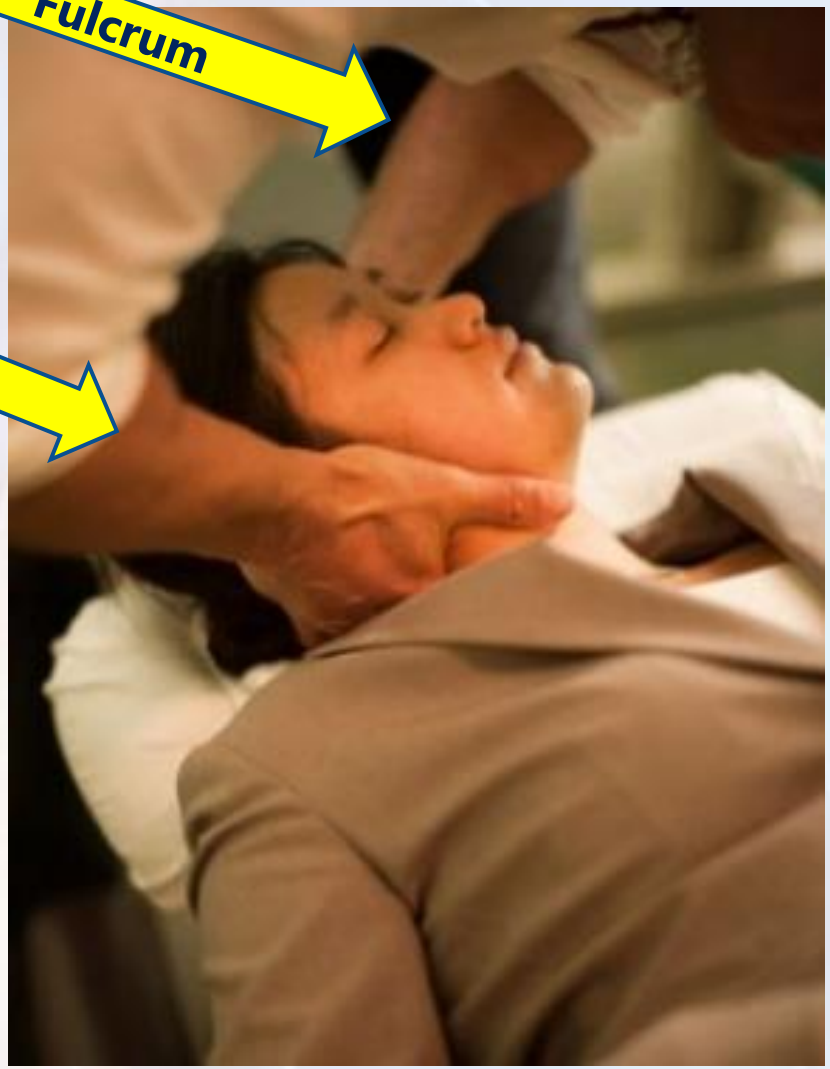
What happens when you adjust?

What are the consequences of the stabilization hand



What happens if you deliver a diversified Adjustment right

Where are the forces?



How does the load move in response to the fulcrum and effort?

Why are these papers so important to our profession and Why did I choose this path?

What does the majority of chiropractic students think about radiographic utilization and what are they being taught

Why is clinical Opinion Important?

The Ops project:

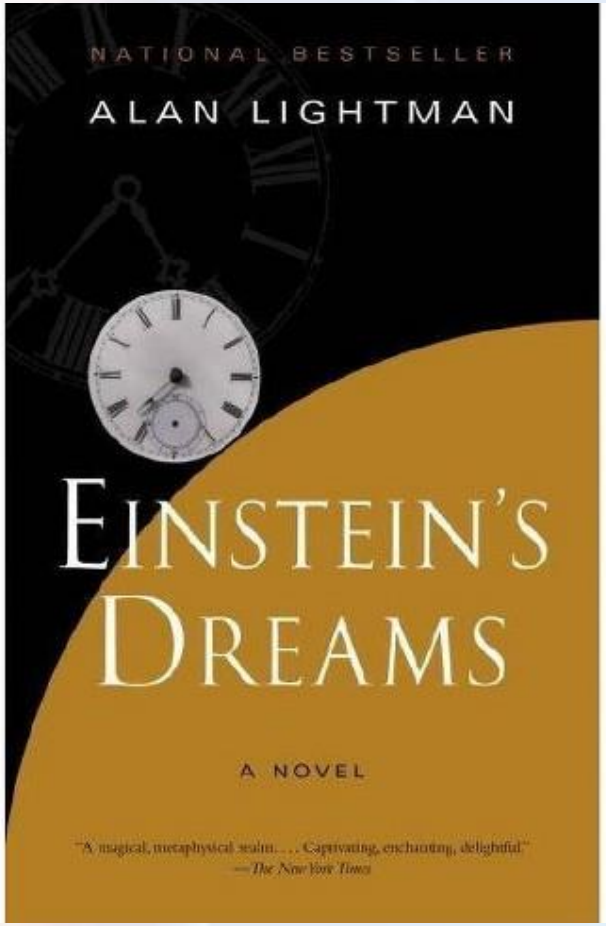
Before we talk about the what:

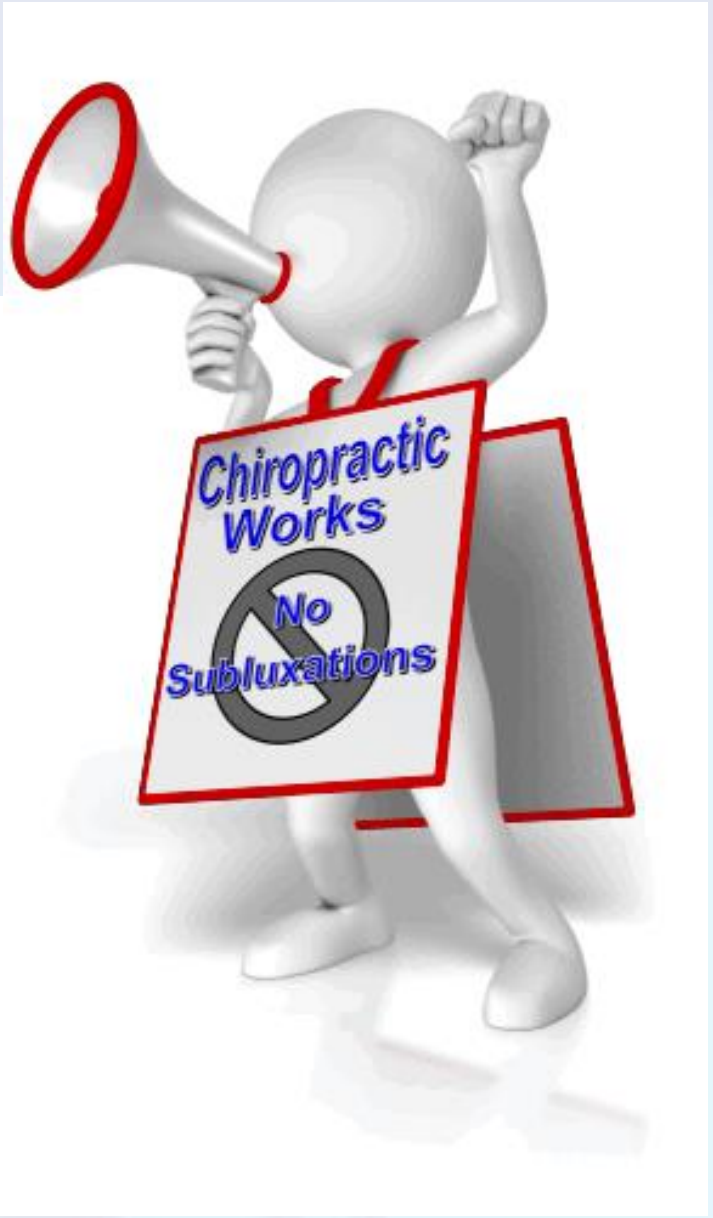
A Celebration of who we are

More about the Why

than the

What





For Today's Notes

Journal of
Clinical Medicine

MDPI

Article

Examining Clinical Opinion and Experience Regarding Utilization of Plain Radiography of the Spine: Evidence from Surveying the Chiropractic Profession

Philip A. Arnone [1,*], Steven J. Kraus [2], Derek Farmen [1], Douglas F. Lightstone [3], Jason Jaeger [4] and Christine Theodossis [5]

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[2] Biokinemetrics, Inc., Carroll, IA 51401, USA
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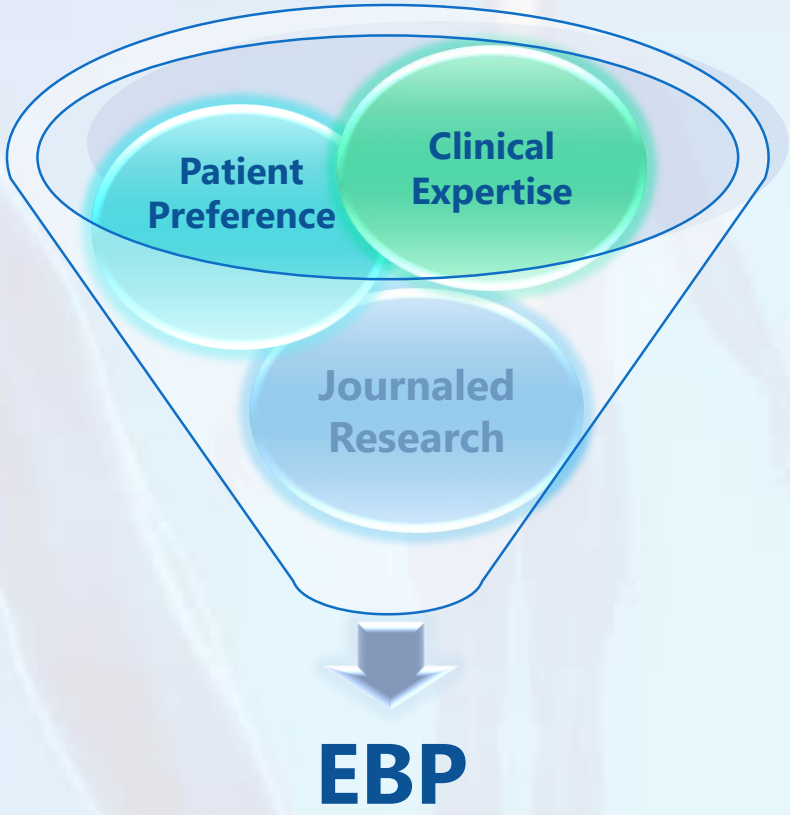
Abstract: Plain Radiography of the spine (PROTS) is utilized in many forms of healthcare including the chiropractic profession; however, the literature reflects conflicting opinions regarding utilization and value. Despite being an essential part of Evidence-Based Practice (EBP), few studies assess Doctors of Chiropractic (DCs) clinical opinions and experience regarding the utilization of (PROTS) in practice. In this study, DCs were surveyed regarding utilization of PROTS in practice. The survey was administered to an estimated 50,000 licensed DCs by email. A total of 4301 surveys were completed, of which 3641 were United States (US) DCs. The Clinician Opinion and Experience on Chiropractic Radiography (COECR) scale was designed to analyze survey responses. This valid and reliable scale demonstrated good internal consistency using confirmatory factor analysis and the Rasch model. Survey responses show that 73.3% of respondents utilize PROTS in practice and 26.7% refer patients out for PROTS. Survey responses show that, among US DCs, 91.9% indicate PROTS has value beyond identification of pathology, 86.7% indicate that PROTS is important regarding biomechanical analysis of the spine, 82.9% indicate that PROTS is vital to practice, 67.4% indicate that PROTS aids in measuring outcomes, 98.6% indicate the opinion that PROTS presents very low to no risk to patients, and 93.0% indicate that sharing clinical findings from PROTS studies with patients is beneficial to clinical outcomes. The results of the study indicated that based on clinical experience, the majority of DCs find PROTS to be vital to practice and valuable beyond the identification of red flags.

Citation: Arnone, P.A.; Kraus, S.J.; Farmen, D.; Lightstone, D.F.; Jaeger, J.; Theodossis, C. Examining Clinical Opinion and Experience Regarding Utilization of Plain Radiography of the Spine: Evidence from Surveying the Chiropractic Profession. *J. Clin.*

Detailed Definition of EBP

EBP is the integration of clinical expertise, patient values, and the best research evidence into the decision-making process for patient care. Clinical expertise refers to the clinician's cumulated experience, education and clinical skills. The patient brings to the encounter his or her own personal preferences and unique concerns, expectations, and values. The best research evidence is usually found in clinically relevant research that has been conducted using sound methodology. (Sackett D, 2002)



What does it mean to have an EBP?

It **means** integrating individual clinical expertise with the best available external clinical **evidence** from systematic research." (Sackett D, 1996)EBP **is** the integration of clinical expertise, patient values, and the best research **evidence** into the decision-making process **for** patient care.

While these 3 components are often considered equal, one can argue that clinical expertise is the most important given the current concerns of bias in journaled research; however, it is often the least considered.

Why Most Published Research Findings Are False

John P. A. Ioannidis

Published: August 30, 2005
https://doi.org/10.1371/journal.pmed.0020124

Summary

There is increasing concern that most current published research findings are false. The probability that a research claim is true may depend on study power and bias, the number of other studies on the same question, and, importantly, the ratio of true to no relationships among the relationships probed in each scientific field. In this framework, a research finding is less likely to be true when the studies conducted in a field are smaller; when effect sizes are smaller; when there is a greater number and lesser preselection of tested relationships; where there is greater flexibility in designs, definitions, outcomes, and analytical modes; when there is greater financial and other interest and prejudice; and when more teams are involved in a scientific field in chase of statistical significance. Simulations show that for most study designs and settings, it is more likely for a research claim to be false than true. Moreover, for many current scientific fields, claimed research findings may often be simply accurate measures of the prevailing bias. In this essay, I discuss the implications of these problems for the conduct and interpretation of research.

Bias in the Journaled Research

Example used in Choosing Wisely

Mentally damaging

No Difference in Acute care

Journals Library

The role of radiography in primary care patients with low back pain of at least 6 weeks duration: a randomised (unblinded) controlled trial

Kendrick D, Fielding K, Bentley E, Miller P, Kerslake R, et al.

Health Technology Assessment Volume: 5, Issue:30, Published in September 2001

https://dx.doi.org/10.3310/hta5300

Citation: Kendrick D, Fielding K, Bentley E, Miller P, Kerslake R. The role of radiography in primary care patients with low back pain of at least 6 weeks duration: a randomised (unblinded) controlled trial. *Health Technol Assess* 2001;5(30)

Report Content

Abstract

Objectives

To test the hypotheses that: (1) Lumbar spine radiography in primary care patients with low back pain is not associated with improved patient outcomes, including pain, disability, health status, sickness absence, reassurance, and patient satisfaction or belief in the value of radiography. (2) Lumbar spine radiography in primary care patients with low back pain is not associated with changes in patient management, including medication use, and the use of primary and secondary care services, physical therapies and complementary therapies. (3) Participants choosing their treatment group (i.e. radiography or no radiography) do not have better outcomes than those randomised to a treatment group. (4) Lumbar spine radiography is not cost-effective compared with usual care without lumbar spine radiography.

Journals Library

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Evidence Based Practice

A doctor's clinical opinion, experience, and expertise, including the knowledge, judgment, and critical reasoning acquired through training and professional experiences, is an essential element to implementing evidence-based practices (EBP) [2).

Documenting the range of clinician opinions, experience, and expertise regarding radiography in the chiropractic profession permits a clearer understanding of approaches to patient care within the discipline.

This is the first study of this kind to evaluate the clinical opinion of the chiropractic profession regarding radiographic utilization.

Overview of Survey

The survey was created to allow chiropractic doctors to reflect their clinical opinion of the Plain Radiography (Defined as Plain Film, Cone Beam,DR & CR).

4301 chiropractors were surveyed regarding their clinical opinion and experience regarding plain radiography, utilization and safety

Number of respondents

The Survey was emailed to an estimated 50,000 unique emails utilizing Survey Monkey

Approximately 5788 DC's opened the survey with an open rate of 3.99 to 9.20%

4301 DC's completed the survey

The participates included US (3641), Canada (459), and the rest of the world (201)

The net response rate: 5788/4301 x 100 = 74.3%

Criticism of the response: 50,000 emails and only 4301 responses

A total of 11 questions were included

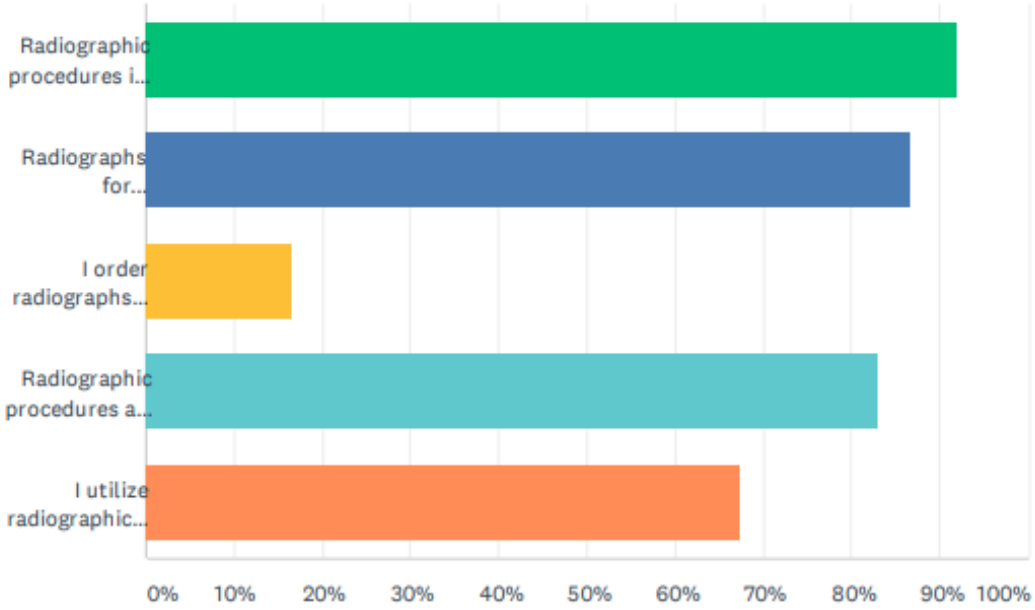
(10 were included in the study)

Chiropractic has spoken and the clinical opinion is Plain Radiography is safe, and essential to Chiropractic practice and patient outcome

Chiropractic Radiology Evidence-Based Practice Survey

Q2 Please select all statements that you agree with regarding spinal radiographs (multiple choices allowed):

Answered: 4,231 Skipped: 69

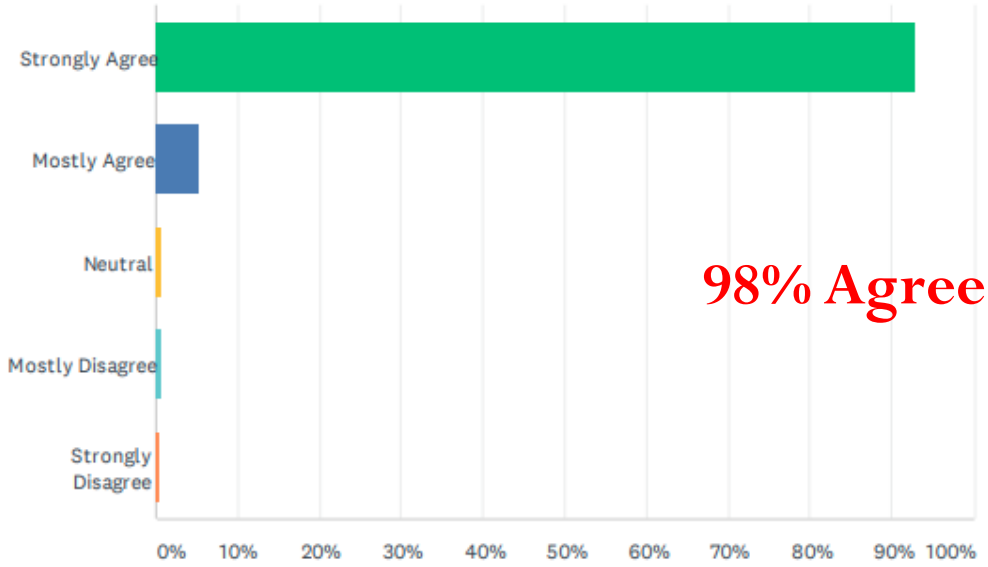


ANSWER CHOICES	RESPONSES	
Radiographic procedures in a Chiropractic office have value beyond the identification of pathology.	91.89%	3,888
Radiographs for biomechanical analysis have significant value.	86.69%	3,668
I order radiographs only for pathology or red flags.	16.47%	697
Radiographic procedures are vital to the chiropractic care I provide in my clinic.	82.91%	3,508
I utilize radiographic procedures to aid in the measurement of clinical outcomes.	67.38%	2,851
Total Respondents: 4,231		

Chiropractic Radiology Evidence-Based Practice Survey

Q3 What is your level of agreement/disagreement with the following statement: Based on the educational training and past clinical experiences, the Doctor of Chiropractic should be able to make their own clinical decision regarding the utilization of spinal radiographs on their patients.

Answered: 4,223 Skipped: 77

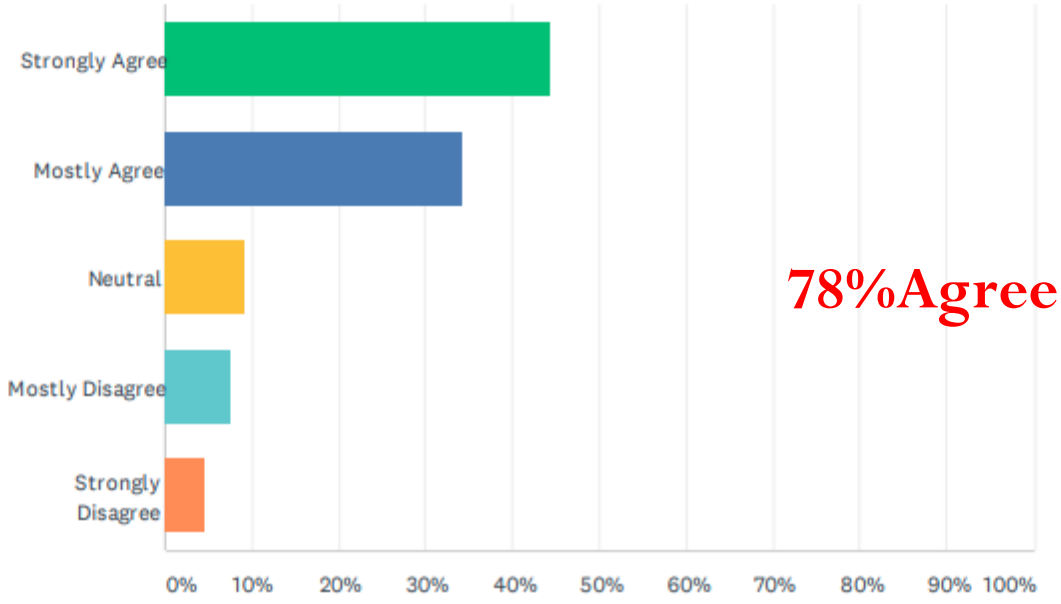


98% Agree

ANSWER CHOICES	RESPONSES	
Strongly Agree	92.90%	3,923
Mostly Agree	5.30%	224
Neutral	0.71%	30
Mostly Disagree	0.62%	26
Strongly Disagree	0.47%	20
TOTAL		4,223

Q4 The foundation of an Evidence-Based Practice (EBP) is based on 3 integrated components: 1) Doctor's Clinical Expertise, 2) Patient Preferences/Values, and 3) Best Research Evidence. When making the clinical decision to obtain spinal radiographs of your patient, should all three EBP components be equally considered?

Answered: 4,198 Skipped: 102

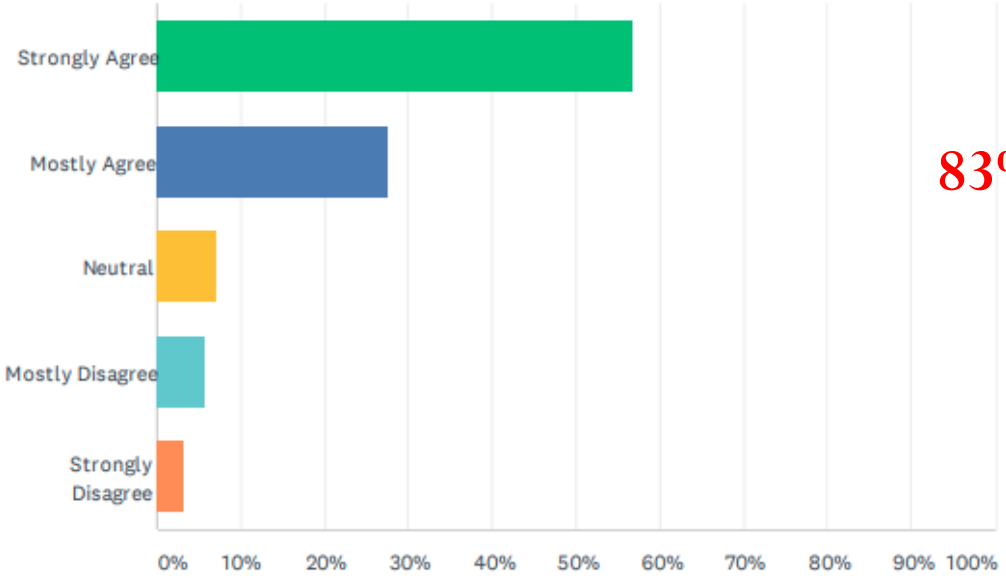


78%Agree

ANSWER CHOICES	RESPONSES	
Strongly Agree	44.33%	1,861
Mostly Agree	34.40%	1,444
Neutral	9.15%	384
Mostly Disagree	7.58%	318
Strongly Disagree	4.57%	192
TOTAL		4,198

Q6 What is your level of agreement/disagreement with the following statement: In the absence of published chiropractic research evidence, the doctor's clinical experience combined with patient preferences are adequate for the appropriate recommendation of spinal radiographs in the practice of chiropractic.

Answered: 4,156 Skipped: 144

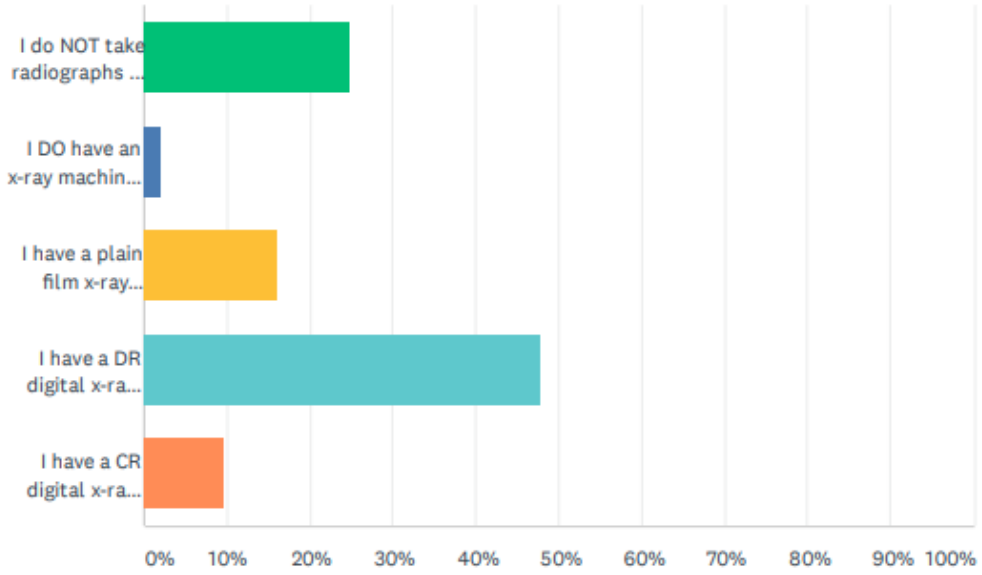


83% Agree

ANSWER CHOICES	RESPONSES	
Strongly Agree	56.62%	2,353
Mostly Agree	27.53%	1,144
Neutral	7.10%	295
Mostly Disagree	5.68%	236
Strongly Disagree	3.08%	128
TOTAL		4,156

Q7 Please select one answer that best describes your use of general spinal radiography in your practice. (This is NOT regarding advanced imaging such as CT/MRI).

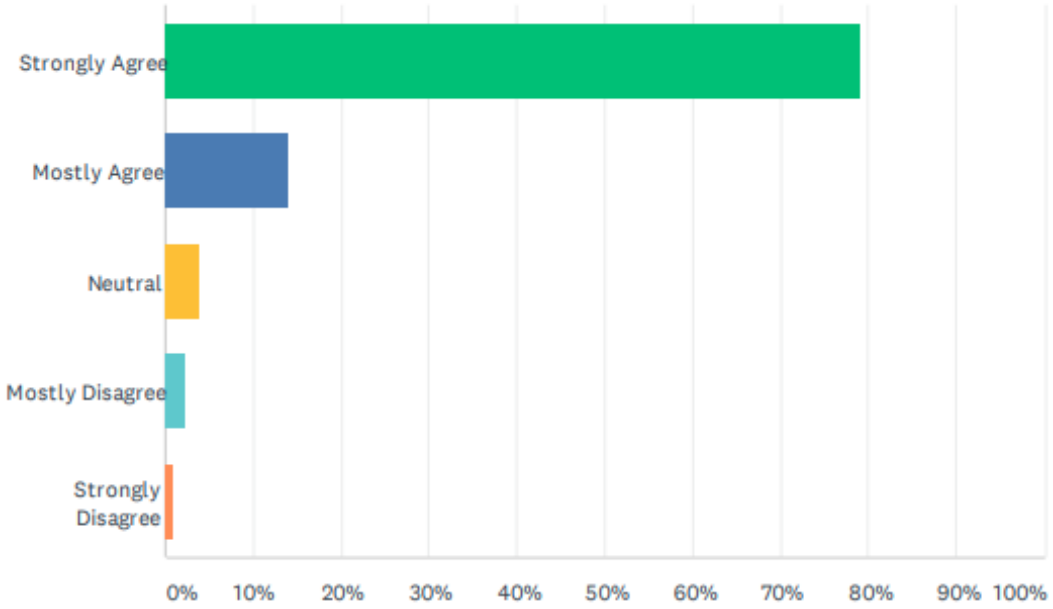
Answered: 4,138 Skipped: 162



ANSWER CHOICES	RESPONSES	
I do NOT take radiographs in my clinic, I refer patients out to another facility.	24.72%	1,023
I DO have an x-ray machine in my practice, but I still refer patients out to another facility for the majority of my spinal radiographs.	2.05%	85
I have a plain film x-ray system in my practice and use it for the majority of my radiographs.	16.02%	663
I have a DR digital x-ray system in my practice and use it for the majority of my radiographs.	47.68%	1,973
I have a CR digital x-ray system in my practice and use it for the majority of my radiographs. (CR digital requires the cassette to be placed into an image processor to process images.)	9.52%	394
TOTAL		4,138

Q9 What is your level of agreement/disagreement with the following statement: In my clinical experience, sharing chiropractic clinical findings from radiographic studies with the patient is beneficial to their clinical outcome.

Answered: 4,111 Skipped: 189

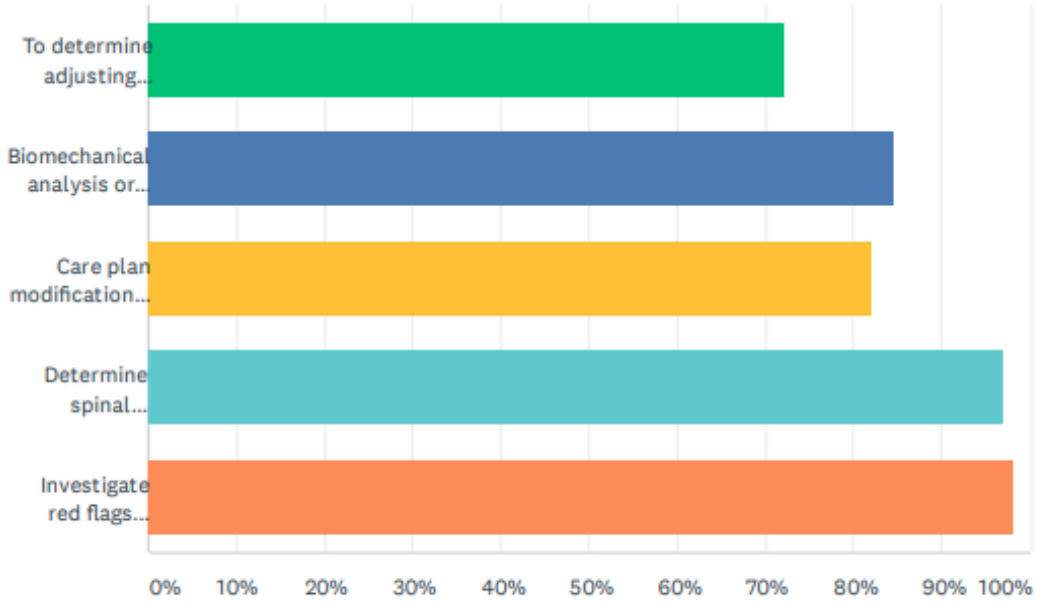


ANSWER CHOICES	RESPONSES	
Strongly Agree	79.13%	3,253
Mostly Agree	13.94%	573
Neutral	3.77%	155
Mostly Disagree	2.24%	92
Strongly Disagree	0.92%	38
TOTAL		4,111

Chiropractic Radiology Evidence-Based Practice Survey

Q10 Based on your clinical experience, which reasons are valid to obtain a spinal radiograph in the practice of chiropractic. (Choose all that apply).

Answered: 4,106 Skipped: 194



ANSWER CHOICES	RESPONSES	
To determine adjusting technique or vertebral levels to be adjusted.	72.11%	2,961
Biomechanical analysis or obtaining measurements of spinal alignment.	84.51%	3,470
Care plan modification considerations.	81.90%	3,363
Determine spinal complications such as degenerative changes, anomalies, or defects.	97.05%	3,985
Investigate red flags (fracture, neurologic deficits, suspected pathology).	98.15%	4,030
Total Respondents: 4,106		

Highlights of responses

Survey responses show that 73.3% of respondents utilize PROTS in practice
26.7% refer patients out for PROTS.

Survey responses show that, among US DCs,
91.9% indicate PROTS has value beyond identification of pathology,
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93.0% indicate that sharing clinical findings from PROTS studies with patients is beneficial to clinical outcomes.
The results of the study indicated that based on clinical experience, the majority of DCs find PROTS to be vital to practice and valuable beyond the identification of red flags.

Critics of our Study say:

That the sample size is too small, and it is only a small percentage of the profession

They say that it is bias as people who do not believe radiographs have value would likely not have completed the survey

My response:

When 82 – 98% of 4301 chiropractors believe something is valuable and essential, that is a relevant clinical opinion and regardless of the rest of the profession warrants further study and can not be dismissed

It does not matter why others did not complete the survey or what opinion they have on the topic

Overview of Conclusions:

Plain Radiography Of The Spine

This survey provides the most extensive insight into the clinical opinion of the US chiropractic profession regarding PROTS and suggests that the majority of the DCs consider utilization of PROTS to have value beyond the identification of pathology, to be vital to chiropractic practice and essential to biomechanical analysis.

The US DCs who utilized PROTS only to rule out pathology in the presence of red flags are, in fact, statistical outliers in this study and may represent a minority of US DCs. A majority of the DCs also consider the doctors' clinical experience and expertise, coupled with patient preferences, to be appropriate for recommending PROTS. Most DCs in this survey found that sharing spinal radiographic findings with the patient is beneficial for patient outcomes.

All participants in the survey believed that patient outcomes would benefit from continued research regarding appropriate utilization of PROTS. The results of this survey clearly indicate the value of PROTS reflected by DCs and demonstrate the need for continued research to help understand how this value can affect the quality of care, conservative correction of spinal alignment and patient health.

Future Optimal Procedure (Ops) Project

Pending Publications:

Plain Radiography: A Unique and Essential Component of Spinal Assessment and Predictive

The concepts of radiographic safety and how they apply to daily practice and life

Bi-Monthly Videos and emails: twice a month

Sign up today:

https://radevidence.org/share-content/free-research-article-summaries/

Future Opinion Studies Pending

The Rationale for PROTS and Biomechanical assessment is evident in the research

The chiropractic profession and students need to be made aware of the current research so we can move forward with more research within our profession.

The world needs chiropractic and
Our patients deserve our best

Why do so many practitioners feel this way?

Is there research to support this clinical opinion?

Plain Radiography: A Unique and Essential Component of Spinal Assessment and Predictive Health

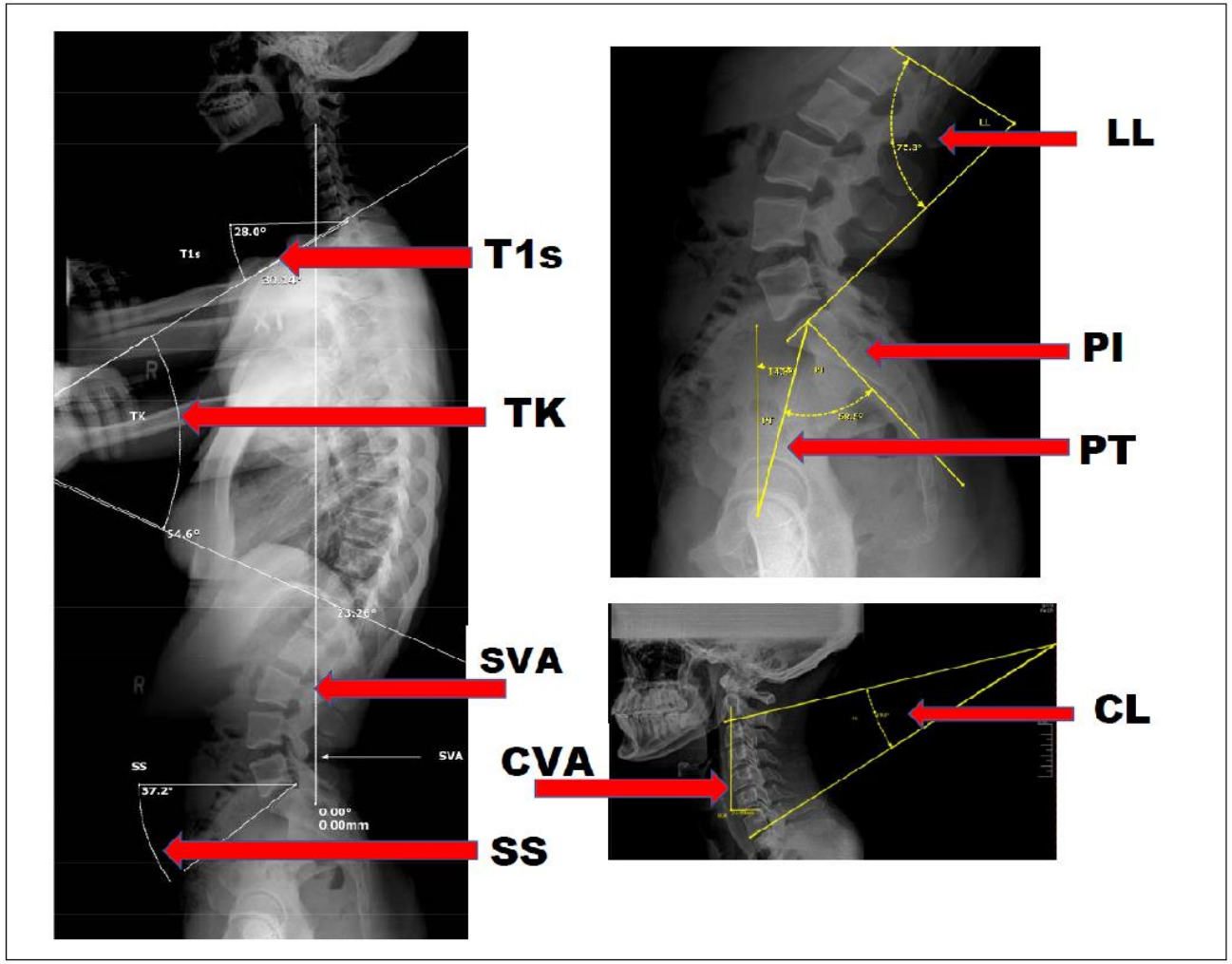
Abstract

Objective. An overview of 450 research articles that support measuring biomechanical alignment of the spine utilizing plain radiography for prognosis and treatment; however, there are contrasting models of radiographic utilization supporting both the expansion and reduction of plain radiography within the conservative research. This review examines the following primary outcomes: (1) quantitative results concerning radiographic evaluation of the spine; (2) method and quality of radiographic measurement; (3) method and quality of non-radiographic measurement.

Materials and Methods. Using three research databases, the authors examined 150 articles that met the study criteria. These articles were reviewed, summarized, and categorized into one of several relevant categories.

Factors that can only be measured by plain radiography

CVA
CL
T1 Slope
T1A
PT
SS
PIA
SVA



The Spine Journal (2013)

Factors determining cervical spine sagittal balance in asymptomatic adults: correlation with spinopelvic balance and thoracic inlet alignment

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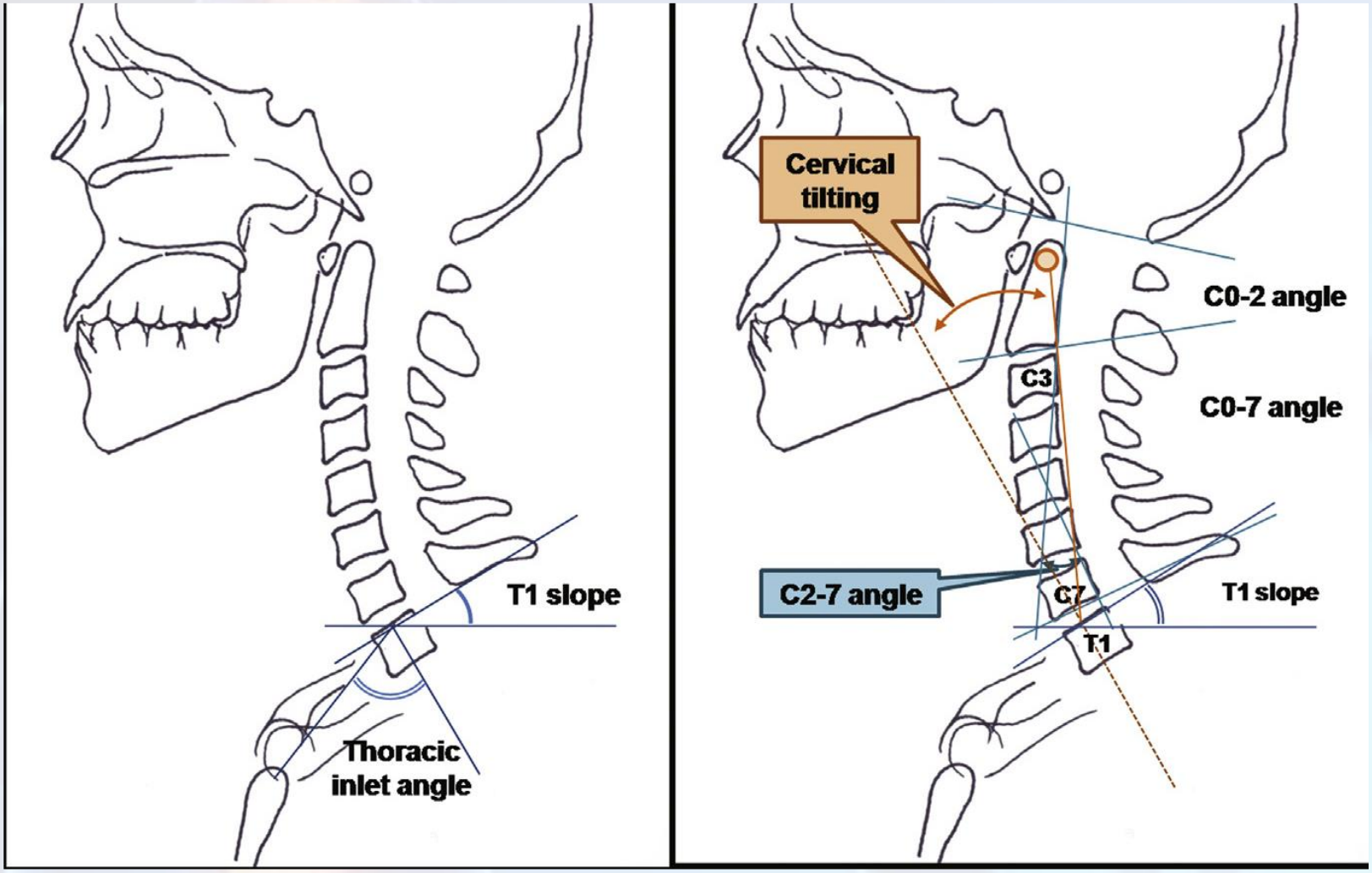
CONCLUSIONS:

T1 slope was a key factor determining cervical spine sagittal balance. Both spinopelvic balance and TI alignment have a significant influence on cervical spine sagittal balance via T1 slope, but TIA had a stronger effect than TK. An individual with large T1 slope required large CL to preserve physiologic sagittal balance of the cervical spine. The results of the present study could serve as baseline data for further studies on the cervical spine sagittal balance in various clinical conditions including the surgical reconstruction of lordosis.


T1 slope
Thoracic inlet angle
Cervical tilting
C0-2 angle
C3
C0-7 angle
C2-7 angle
C7
T1 slope
T1

Diagnostic Value of T1 Slope in Degenerative Cervical Spondylotic Myelopathy

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ABCDFG 1,2 **Na-Xin Fu,** BCE 1 **Hui Huang**
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Background: To explore the diagnostic value of sagittal measurement of thoracic inlet parameters for degenerative cervical spondylotic myelopathy (DCSM).

Results: All the enrolled patients in the study and control groups completed the follow-up, and the mean follow-up periods were 35.8 months in the study group and 36.3 months in the control group. The DCSM group had smaller T1 slope and TIA when compared with that of the control group (18.14±2.67° *vs.* 24.16±3.7°, p=0.00; 66.42±12.36° *vs.* 70.42±10.21°, p=0.01). Logistic regression analysis and receiver operating characteristic (ROC) curve revealed that preoperative T1 slope of less than 18.5° had significant diagnostic value for the incidence of DCSM (p<0.05).

Conclusions:

Patients with sagittal imbalance of thoracic inlet parameters have higher risk of DCSM, while T1 slope of less than 18.5° showed significant diagnostic value for the incidence of DCSM.

Degenerative cervical spondylotic myelopathy (DCSM), is the most common and serious neurological disorder in patients over 60 caused by chronic progressive compression or irritation of the spinal cord in the neck.

Full-text PDF: https://www.medscimonit.com/abstract/index/idArt/906417

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Association of Myelopathy Scores With Cervical Sagittal Balance and Normalized Spinal Cord Volume

Analysis of 56 Preoperative Cases From the AOSpine North America Myelopathy Study

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CONCLUSION

CSM is the leading cause of spinal cord dysfunction worldwide.

To date, the correlations between cervical alignment, sagittal balance, and myelopathy have not been well characterized.

This study is the first to correlate cervical sagittal balance (C2–C7 SVA) to myelopathy severity. It is interesting to note that that sagittal balance but not kyphosis is tied to myelopathy score. Although the cervical C2–C7 Cobb angle (lordosis/kyphosis) was not correlated to mJOA scores, we did find a moderate negative correlation in kyphotic patients

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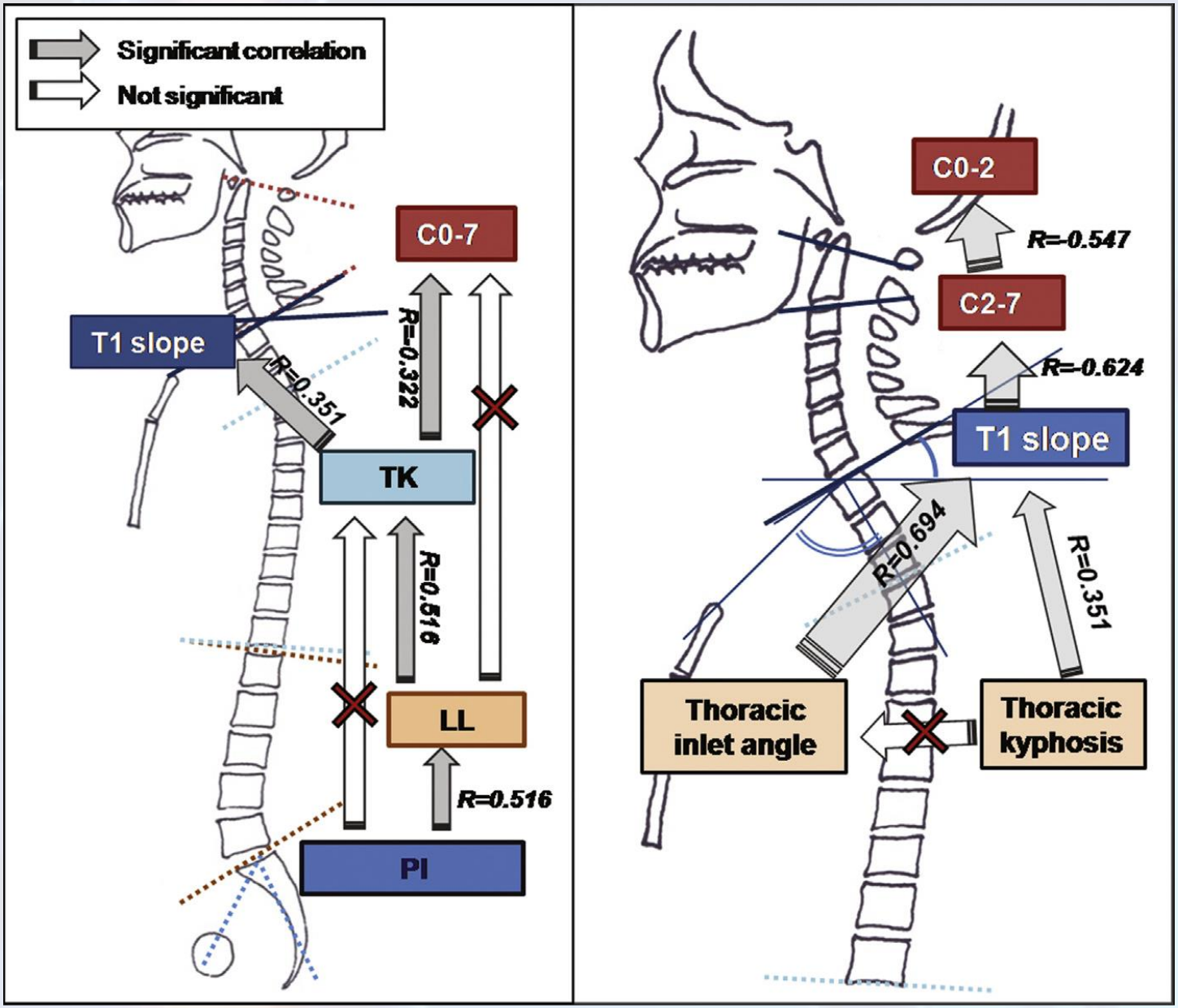
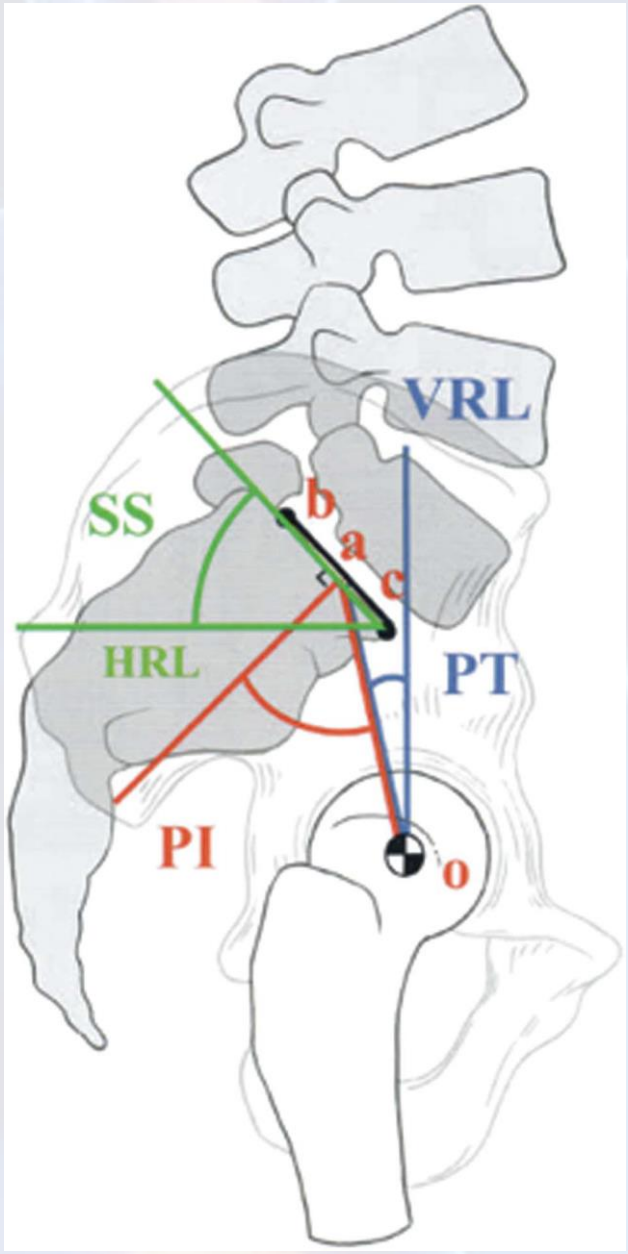
REVIEW

Which parameters are relevant in sagittal balance analysis of the cervical spine? A literature review

Fong Poh Ling1 · T. Chevillotte1 · A. leglise1 · W. Thompson1 · C. Bouthors1 · Jean-Charles Le Huec2 Received: 22 October 2017 / Revised: 31 December 2017 / Accepted: 4 January 2018

Conclusion The most important parameters to analyse the cervical sagittal balance according to the literature available today for good clinical outcomes are the following: C7 or T1 slope, average value 20°, must not be higher than 40°. cSVA must not be less than 40°C (mean value 20 mm). SCA (spine cranial angle) must stay in a norm (83° ± 9°). Future studies should focus on those three parameters to analyse and compare pre and post op data and to correlate the results with the quality of life improvement.


Significant correlation
Not significant
C0-7
T1 slope
R=0.322
R=0.351
TK
R=0.516
LL
R=0.516
PI
C0-2
R=-0.547
C2-7
R=-0.624
T1 slope
R=0.694
R=0.351
Thoracic inlet angle
Thoracic kyphosis


VRL
SS
b
a
c
HRL
PT
PI
o

Neurospine 2020;17(3):497-504

Surgical Impact on Global Sagittal Alignment and Health-Related Quality of Life Following Cervical Kyphosis Correction Surgery: Systematic Review

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Department of Neurosurgery, Spine Center, Seoul National University Bundang Hospital, Seoul National University College of Medicine, Seongnam, Korea

CONCLUSION

Compensation in primary cervical kyphosis is via posterior shifting of C7 SVA, small TS, and large LL. These compensatory mechanisms resolve reciprocally in a different fashion following cervical correction surgery according to compensation ability in the thoracolumbar spine. The goal of cervical reconstruction surgery would be to achieve sagittal balance regarding position of the head and GSA including the pelvis and lower extremities.

JB & JS Reviews
AUGUST 2020 · VOLUME 8, ISSUE 8 · e19.00100

Surgical Restoration of Sagittal Alignment of the Spine: Correlation with Improved Patient-Reported Outcomes; A Systematic Review and Meta-Analysis

Conclusions:

On the basis of the current literature, lower PT was significantly correlated with improved ODI (Oswetry disability Index) and VAS (Visual Analogue Scale) pain in patients with sagittal malalignment caused by lumbar degenerative disorders that were treated with surgical correction of the sagittal balance.

J Orthop Sci (2007) 12:207–213
DOI 10.1007/s00776-007-1122-5

Anterolisthesis and retrolisthesis of the cervical spine in cervical spondylotic myelopathy in the elderly

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Conclusions. Degenerative spondylolisthesis is not a rare radiographic finding in elderly patients with CSM, which tends to cause intense cord compression that is seen on MRI scans. Greater mobility of the upper cervical segments may be a compensatory reaction for advanced disc degeneration of the lower cervical segments, leading to the development of degenerative spondylolisthesis. With a similar degree of displacement, anterolisthesis tends to have a greater impact on the development of CSM than retrolisthesis.

Despite this, we are taught that DJD is not a relevant finding because in many cases it does not yield pain

Correlations between the sagittal plane parameters of the spine and pelvis and lumbar disc degeneration

Xu Wei, Li Gengwu, Chen Chao, Li Yifan, Sang Shang, Hu Ruixi, Ji Yunhan, Zhu Xiaodong & Li Zhikun

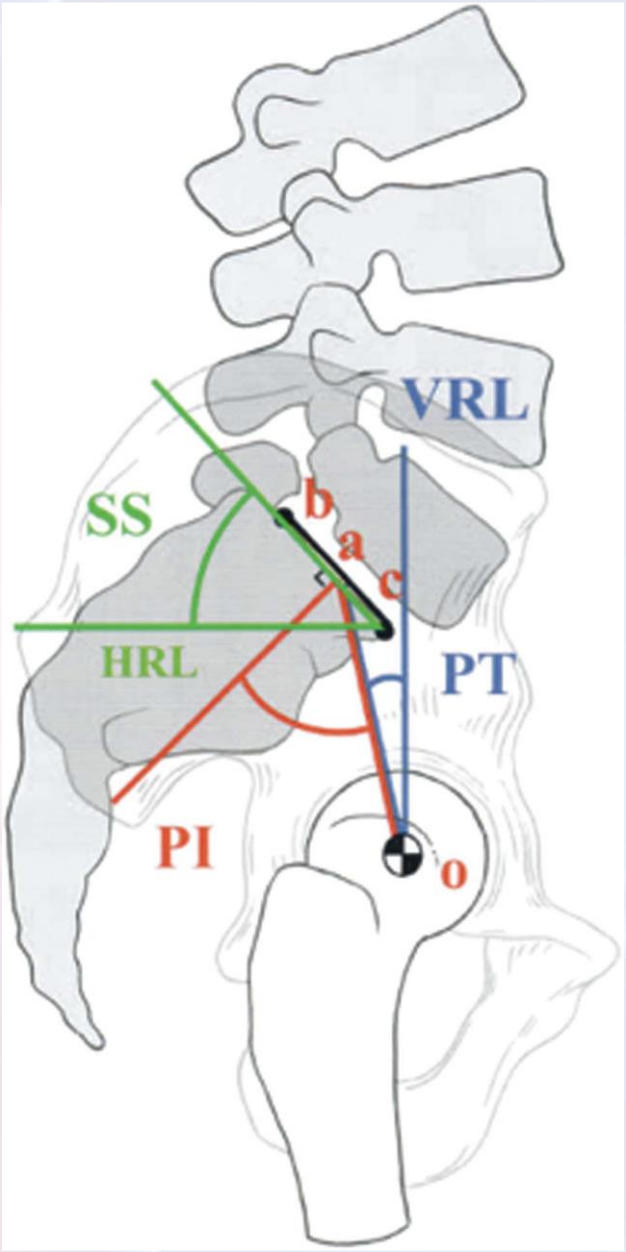
Journal of Orthopaedic Surgery and Research **volume 13**, Article number: 137 (2018)

Abstract

Studies have shown that lumbar disc herniation, degenerative lumbar instability, and other degenerative lumbar spinal diseases are often secondary to disc degeneration. By studying the intervertebral disc, researchers have clarified the pathological changes involved in intervertebral disc degeneration but have ignored the roles of biomechanical factors in the development of disc degeneration. This study aims to investigate the relationships among the location, scope, and extent of lumbar disc degeneration and sagittal spinal-pelvic parameters.

Conclusions

The location of lumbar intervertebral disc degeneration is affected by spinal-pelvic sagittal morphology. Populations with small PI values tend to exhibit degeneration at the L4/5 and L5/S1 discs, and populations with large PI values tend to exhibit degeneration at the L3/4 and L4/5 discs. The SVA value and the overall degree of lumbar disc degeneration are positively correlated.


VRL
SS
b
a
c
HRL
PT
PI
o

Beyond Pelvic Incidence–Lumbar Lordosis Mismatch: The Importance of Assessing the Entire Spine to Achieve Global Sagittal Alignment

Robert K. Merrill, BS1, Jun S. Kim, MD1, Dante M. Leven, DO1,
Joung Heon Kim, BS1, and Samuel K. Cho, MD1

Results:

We analyzed 52 patients with a mean age of 59+16 years. In patients with a postoperative SVA <5cm, a smaller TK was seen when PI-LL >10 than when PI-LL<10 (15.45 vs 33.04, P ¼ .0004). Additionally, PT was larger when PI-LL >10 than when PI-LL <10 (25.73 vs 19.07, P ¼ .006). SVA correlated better with ((PI-LL) PT þ TK) (R2 ¼ 0.51) than with PI-LL alone (R2 ¼ 0.33). Lastly, there was no significant correlation between change in pre- to postoperative SVA with change in TK for all cases (P ¼ .73), but in cases where change in PI-LL was <10, there was a significant correlation between change in TK and change in SVA (P ¼ .009).

Conclusion:

Our results demonstrate that PT and TK, and not just PI-LL, play an important role in maintaining sagittal balance when there is a PI-LL mismatch >10.

My question to all of you?

Does Clinical opinion indicate a high value to radiographic analysis?

Is there research to support the increased use of radiographic procedures?

Yes

It is the responsibility of our profession, colleagues and institutions to research and advance our understanding of these procedure

This may be what is seems like at times, but as you continue to change lives, you should all realize that this leads to …….

Create a Path to Better Health for patients to follow

You my colleagues are Galileo, Ford and Columbus

Be a Beacon of Light for health for patients to follow

JOIN OUR TEAM:
THE BALANCED BODY CENTER

WE ARE LOOKING FOR A 1ST TO 5TH QUARTER STUDENT THAT MAY BE INTERESTED IN PRACTICING IN BEAUTIFUL CHARLOTTE NC AFTER GRADUATION!

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