

Title: Upper Cervical Forum 2024: Connecting to the Brain

Instructors: Cameron Bearder, DC, FABVR-c, FACFN-c; Stan Pierce, DC; Gordon Elder, DC, DCCJP, FICPA; Jonathan Chung, DC; Jeffrey Scholten, DC, FCCJP, FICA ; Frank Scali, MD, DC; Robert Kessinger, DC; Jack Carleton, MD; Scott Rosa, DC, FCCJP; and Sandlin Lowe, MD

Course Objectives: The courses/programs in this event provide an integrated education for the Doctor of Chiropractic in the scientific knowledge of the upper cervical subluxation. The presentations will address:

- The connections between the craniocervical junction (CCJ) and the neurovisual system. An exploration of how the CCJ can impact the neurovisual system, specifically focusing on the accuracy of eye movements called saccades.
- Establishing an effective research agenda for presentations and publications. Review the key components of an effective research agenda to help establish a platform for instigating more research submissions and publications from the field of chiropractic
- Chiropractic research paper presentations. Presentations address:
 - EPIC spinal procedure with sound wave technology
 - Prevalence and magnitude of radiometric rotation between atlas vertebra and axis vertebra (C1 and C2) in a migraine population compared to controls
 - Prevalence of styloid elongation-stylohyoid calcification in relation to atlas transverse process
 - Examining clinical opinion and experience regarding utilization of Plain Radiography of the Spine (PROTS)
 - Improvement of dizziness following an upper cervical chiropractic technique and individualized vestibular rehabilitation program
 - Prevalence of craniocervical and cervical zygapophyseal articular misalignment patterns in a Blair upper cervical chiropractic practice
- The neuroscience of Nocebos. In this course, attendees will be able to reflect and update patient communication to prevent poor outcomes for patients prone to psychogenic/functional disorders
- Blood pressure and blood flow in Chiropractic care of the CCJ. Attendees will be introduced to the physiology and health consequences of various states of blood pressure, cranial blood drainage, the clinical relationships with headache, and the current research regarding hypertension in the chiropractic field
- The posterior Atlantooccipital Membrane and its implications in a clinical setting. In 2011, the presenter reported a novel anatomical finding – the myodural bridge of the atlantoaxial interspace. The presentation focuses on the functional role of this anatomical structure - anchoring the spinal cord during passive and active cervical spinal movements
- Clinical aspects of the glymphatic system. The presentation provides an overview of the glymphatic system and details clinically relevant factors impacting healthy glymphatic function
- Follow-up care for neck injury patients: An Emergency Physician’s recommendation. Addresses the treatment of long-term sequel from neck injury is important for all who are in follow up care.
- Craniocervical instability and its ill effects: This presentation will provide the attendee with specific understanding of “cranio-cervical instability” and the sequelae of structural issues that can lead to significant constellation of symptoms
- A primer on alternative methods to evaluate traumatic brain injuries: Single Photon Emission Computed Tomography (SPECT) Brain Imaging and Quantitative Electroencephalography (QEEG) Traumatic Brain Injury Discriminate Analysis. The main goal of this presentation is to understand how SPECT brain imaging and QEEG analysis can be used to evaluate traumatic brain injuries

Dates: June 14– June 15, 2024

Location: DoubleTree by Hilton, 60 S Ivanhoe Blvd, Orlando, FL 32804

Total CE Hours: 13

Friday June 14th

9:15–10:15AM: The Connections Between the Craniocervical Junction and the Neurovisual System

- Attendees will be presented with an enhanced view of brain(stem) anatomy and physiology relating to saccadic eye movement in the horizontal plane
- Attendees will understand how the neuro-musculoskeletal structures that make up the craniocervical junction communicate through specific pathways and regional brain structures
- Attendees will be presented with a hypothesis on how their intervention at the craniocervical junction can improve saccadic accuracy, with verifiable pre-post treatment case studies

1 Hr. CE, Lecture, Anatomy,

Cameron Bearder, DC

10:20-11:20AM Establishing an Effective Research Agenda

- How to establish a “publishing identity”
- How to publish with a purpose to tell a story that actually matters
- Creating co-authoring collaboration for strengthening publication leverage
- Discussing methods of data collection for optimizing the potency and volume of study submission
- Considerations for journal selection and managing publication fees

1 Hr. CE, Lecture, Principles of Practice

Stan Pierce, DC

11:35AM-12:35PM Research Paper Presentations- Hour 1 – Papers 1-3

Paper 1 Outline: EPIC Spinal Procedure with Sound Wave Technology Induces Biomechanical Alignment Putatively Influencing Pain Response: Author: Stan Pierce, DC

- Correlation of recent studies demonstrating the ability of sound waves to carry mass, how the EPIC technique spinal procedure uses a sound wave impulse to create measurable changes in spinal alignment, and the clinical safety and efficacy of this approach.

Paper 2 Outline: Prevalence and magnitude of radiometric rotation between Atlas Vertebra and Axis Vertebra (C1 and C2) in a migraine population compared to controls: A Case Controlled Observational Study: Author: Ben Kuhn, DC, DCCJP

- Net rotation between C1 and C2 within the migraine group had a mean of 3.77°, while net rotation within the control group had a mean of 2.15°.
- A strong correlation was found in this study between the presence of migraines and a radiographic measurement of rotation between C1 and C2 on a vertex projection. Every degree of increased rotation measured correlates to a 43% increase in the likelihood of the case having migraines.

Paper 3 Outline: Prevalence of Styloid Elongation-Stylohyoid Calcification in Relation to Atlas Transverse Process: Author: Christine Theodossis, DC, DCCJP

- The styloid process, due to its proximity to various neurological and vascular structures, may compress and compromise those structures if sufficiently elongated or if calcification of the stylohyoid ligament is present. However, proximity to the C1 transverse process may provide a more valid clinical determination of elongation and yield more clinically relevant information
- Styloid elongation/stylohyoid calcification to the level of the C1 transverse processes was found to be far more prevalent than elongated styloids using the current >30mm standard and offers a potentially more clinically significant evaluation.

1 Hr. CE, Lecture, Evidence based outcomes

Moderator: Gordon Elder, DC, DCCJP, FICPA

Lunch Break – 12:40 pm – 2:30 pm – NO CE

2:30-3:30PM The Neuroscience of Nocebos: How Bad Messaging Can Sabotage Our Clinical Outcomes

- Introduce the concept of nocebo
- Compare and contrast placebo effect and nocebo effect
- Describe neurological structures associated with placebo and nocebo effect
- Anterior cingulate, amygdala, limbic system, basal ganglia, autonomic nervous system
- Discuss functional neurological disorders
- Overview of common nocebic language in chiropractic communication
- Conclude with strategies to identify patients with high susceptibility to nocebic effects and communication strategies to mitigate nocebic beliefs

1 Hr. CE, Lecture, Neurology

Jonathan Chung, DC

3:35-4:35PM Blood Pressure and Blood Flow in Chiropractic Care of the Craniocervical Junction

- Review hypertension and pulse pressure considerations in health
- Discuss physiologic influences on blood pressure (hypo/hyper).
- Review research published on this topic (Bakris, Goertz, Kessinger, etc.)
- Explore blood circulation – highlighting blood drainage (IVVP and IVJs)
- Explore the concept of intracranial pressure and cranial capacity/compliance

1 Hr. CE, Lecture, Evidence based outcomes

Jeffrey Scholten, DC, FCCJP

Vendor Break – 4:35 pm – 4:55 pm - NO CE

5:00-6:00PM The Discovery of the Posterior Atlantooccipital Membrane and its Implications in a Clinical Setting

- How and why Dr. Scali began his work studying the craniocervical junction
- Previous publications, his work describing the myodural bridge, and the history of myodural bridge research
- Plastination technique for specimen preparation and the novel dissection approach for distinguishing tissue layers in the meningovertebral structures
- Clinical application in both surgical and manual therapy approaches

1 Hr. CE, Lecture, Evidence based outcomes

Frank Scali, MD, DC

Saturday, June 15th Agenda

9:00-10:00AM Clinical Aspects of the Glymphatic System

- Glymphatics overview
- Astrocytes/aquaporin 4 system
- Autophagy
- Factors that impact.
- Amyloid precursor protein
- Metabolic issues
- Clinically relevant influencing factors

1 Hr. CE, Lecture, Nutrition

Robert Kessinger, DC

10:05-11:05AM Research Paper Presentations– Papers 4-6

Paper 4 Outline: Examining Clinical Opinion and Experience Regarding Utilization of Plain Radiography of the Spine (PROTS): Evidence from Surveying the Chiropractic Profession: Author: Phil Arnone, DC, DCCJP

- 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.
- Discussion and breakdown of the survey finding that among respondent US DCs, 91.9% indicate PROTS has value beyond identification of pathology.

Paper 5 Outline: Improvement of Dizziness Following an Upper Cervical Chiropractic Technique and Individualized Vestibular Rehabilitation Program: A Retrospective Case Series. Author: Tyler Steward, DC

- Documentation of the favorable health outcomes of eight patients with dizziness following an Upper Cervical chiropractic technique and individualized vestibular rehabilitation program.
- 67.19% average dizziness handicap inventory (DHI) score improvement in the case series.

Paper 6 Outline: Prevalence of Craniocervical and Cervical Zygapophyseal Articular Misalignment Patterns in a Blair Upper Cervical Chiropractic Practice. Author: Jeffrey Hannah, DC

- A proper understanding of the orientation of articular misalignment is of critical importance in order to select and deliver an appropriate, vectored correction of the craniocervical junction and lower cervical spine.
- Percentage of neutral, anterior, posterior and rotational articular misalignments found with segmental correlation.

1 Hr. CE, Lecture, Evidence based outcomes

Gordon Elder, DC, DCCJP, FICPA

11:10AM-12:10PM Follow-up Care for Neck Injury Patients: An Emergency Physician's Recommendation

- Immediate post trauma intervention
- Long-term (after injury) Sequela treatment
- CCJ assessment and post stability follow-up care

1 Hr. CE, Lecture, Evidence based outcomes

Jack Carleton, MD

Lunch Break – 12:10 pm – 2:00 pm - NO CE

2:00-4:00PM Craniocervical Instability and its Ill Effects: Neuro-radiographically, Neurologically, Neuro-vascularly, Neuro-biomechanically and its profound effects on CSF flow

- An extensive review of clinical test results related to “Cranio-Cervical Instability.”
- The neurological consequences that occur resultant from “cranio-cervical instability.” And how misalignments at the cranio-cervical junction contribute to the neurological sequelae.
- How cranio-cervical instability can contribute to neuro-vascular compromises.
- The biomechanical consequences of “cranio-cervical instability” an Upper Cervical perspective”
- The cranio-cervical junction misalignment and its contribution to serving as a “choke point for cranio-cervical hydro dynamics.

2 Hr. CE, Lecture, Evidence based outcomes

Scott Rosa, DC, FCCJP

Vendor Presentations / Sponsored Break – 4:05 pm – 4:30 pm - NO CE

4:30-6:30PM A Brief Primer on Alternative Methods to Evaluate Traumatic Brain Injuries: Single Photon Emission Computed Tomography (SPECT) Brain Imaging and Quantitative Electroencephalography (QEEG) Traumatic Brain Injury Discriminate Analysis

- Traumatic brain injuries (TBI) and their consequences are often under-recognized in the United States.
- Most adults struggle to recall their head traumas accurately.
- Young children exhibit one of the highest rates of TBI-related emergency department visits across all age groups.
- TBI affects children differently than adults, potentially disrupting their developmental trajectory and limiting school and activity participation.
- Many TBIs may not be visible on CT scans or MRI scans.
- Functional brain imaging, such as SPECT scans assessing brain blood flow and function, and QEEG evaluating electromagnetic brain functioning, provides better results.
- SPECT scans and QEEG are effective in identifying TBIs.
- These imaging methods can also demonstrate improvements and benefits of upper cervical specific adjustments.

2 Hr. CE, Lecture, Evidence based outcomes

Sandlin Lowe, MD