

Cervical Spine: Chiropractic, MRI and Care Protocols

James Demetrious, DC, FACO

Fellow, Academy of Chiropractic Orthopedists

Dr. James Demetrious achieved his doctorate at New York Chiropractic College in 1986. He is a board certified chiropractic orthopedist and Fellow of the Academy of Chiropractic Orthopedists. Dr. Demetrious is post-graduate faculty through NYCC. He has provided coursework on behalf of NYCC, Logan, Sherman and Palmer Colleges of Chiropractic. He is a Board member and managing editor of the Academy of Chiropractic Orthopedists. Dr. Demetrious has authored peer-reviewed journal articles that have appeared in JMPT, JNMS, JACA and JACO. His lectures heavily reference current mainstream indexed and peer-reviewed research while drawing from the experience of clinical practice of over twenty four years.

Course Description

Dr. Demetrious provides a case intensive, updated evidence based compilation of research, and images with plausible physiologic and biologic rationales related to chiropractic vertebral subluxation affecting the cervical spine. Course attendees will receive an advanced perspective utilizing clinically relevant MRI/CT findings with emphasis placed upon therapeutic decision making. Presentation of evaluative procedures and care protocols will provide instructive insight to common and complex patient presentations.

- Introduction and overview of course material:
 - Biologic and physiologic tenets related to the vertebral subluxation.
 - Cascade Failure and Structured Criticality
 - Utilization of advanced diagnostic imaging to assess the physiologic parameters of the vertebral subluxation.
- MRI:
 - Basic MRI Physics:
 - Understanding T1 and T2 weighted images:
 - Hypo-intense and Hyper-intense tissue values
 - Vertebral Artery Dissection Review
 - Upright Dynamic MRI
 - Bold fMRI Introduction

- Case Presentation – Central symptoms from cervicogenic causes
- Reviewing normal anatomy and physiologic states:
 - Developing, “MRI Vision”
 - Diffusion Rates
 - Disk Nutrition
 - Disc Mechanobiology
 - Modic Changes
 - High-Intensity Zone
- **Case Presentation - Modic Changes in MVC Case**
- WAD / Blunt Trauma
 - IVD – Rim Lesions
 - Ligament / Tendon Trauma - Sprain/Strain on MRI
 - Reviewing How Connective Tissues Heal:
 - Review of Salter’s premises related to tendon, ligament and cartilage response to injury and movement.
- **Case Presentation - Trauma Induced CO/C1/C2 VSC.**
- Evaluating pathophysiology through MRI while defining the chiropractic subluxation and subluxation degenerative sequelae.
- Review disk herniation nomenclature from American Society of Neuroradiologists
- **Case Presentation – Radiculopathy**
- Zygapophyseal Joints
 - Capsular / Facet microanatomy
 - Capsular Neurology
 - Hydrostatic Pressure / Drainage Phenomena
- **Case Presentation – Torticollis**
- DJD/ Spinal Stenosis:
 - Central Canal
- **Case Presentation – Head and C-Spine Postures and ADLs**
 - Foraminal Issues
- **Case Presentation -**
- Core Musculature
 - Primary injury
 - Compensatory patterns
 - Myofascial referral patterns
- **Case Presentation – Subclavius, Levator Scapulae, Pec Maj.**
- Paraspinal Atrophy on MRI
- Exercise Rehabilitation

- Dynamic Comprehensive Approach
- Therapeutic Approaches
 - Chiropractic technique
 - Decompression / Traction
- Medical protocols:
 - Transforaminal injections, facet blocks and epidural injections
 - Surgical Approaches
 - Failed Surgery Syndrome:
 - Causes of failure
 - A chiropractic/rehabilitative approach
 - Post-surgical MRI findings
- **Case Presentations – Post-surgical adjacent segment cascade failure, Transforaminal injections**
- Diagnostic Challenges - Sneaker Mimickers:
- **Case Presentations – Metastatic disease, Epidural Abscess, Brachial neuritis**
- Systemic Issues:
- **Case Presentations – Ankylosing Spondylitis, RA**
- Summary
- Questions