

**JOURNAL PUBLICATIONS**  
**2008-2009 ACADEMIC YEAR to 2010-2011 ACADEMIC YEAR**

1. **Dougherty PE.** Chiropractic in the 21<sup>st</sup> Century: An Overview for Primary Care Physicians. Primary Care Reports 2008;14:1-12.

*Description: This manuscript is an overview of the current state of the art in chiropractic including: education, research and practice. The manuscript was designed to give a practicing primary care physician both an overview of what a chiropractor does but also very practical tips on how to chose a chiropractor to refer his/her patients to.*

2. **Murphy DR<sup>1</sup>** and Beres JL. Cervical myelopathy: a case report of a "near-miss" complication to cervical manipulation. J.Manipulative Physiol Ther. 2008;31:553-7.

*Description: A case is presented that describes and discusses the natural progression of cervical herniated disk to cervical myelopathy, independent of any provoking factor including spinal manipulation.*

3. **Murphy DR** and Beres JL. Is treatment in extension contraindicated in the presence of cervical spinal cord compression without myelopathy? A case report. Man.Ther. 2008;13:468-72.

*Description: A case is presented that describes and discusses the safety and effectiveness of a treatment regimen involving manual and self generated end range movements into extension. The patient presented with four disc herniations, two of which compressed the spinal cord, accompanied by radiculopathy and motor loss.*

4. Chou, R., Loeser, J. D., Owens, D. K., Rosenquist, R. W., Atlas, S. J., Baisden, J., Carragee, E. J., Grabois, M., **Murphy, D. R.**, Resnick, D. K., Stanos, S. P., Shaffer, W. O., and Wall, E. M. Interventional therapies, surgery, and interdisciplinary rehabilitation for low back pain: an evidence-based clinical practice guideline from the American Pain Society. Spine (Phila Pa 1976.) 2009;34:1066-77.

*Description: The article presents eight evidence-based recommendations for the use of invasive diagnostic tests, interventional therapies, surgery, and interdisciplinary rehabilitation for nonradicular low back pain, radiculopathy with herniated disc, and symptomatic spinal stenosis. The recommendations were based upon 161 randomized trials.*

5. **Dunn AS<sup>2</sup>**, Passmore SR, Burke J, and Chicoine D. A cross-sectional analysis of clinical outcomes following chiropractic care in veterans with and without post-traumatic stress disorder. Mil.Med 2009;174:578-83.

**Description:** *This cross-sectional research project addresses the potential impact of post-traumatic stress disorder on clinical outcomes of conservative forms of management for musculoskeletal disorders among veteran patients.*

6. **Dunn AS**, Baylis S, and Ryan D. Chiropractic management of mechanical low back pain secondary to multiple-level lumbar spondylolysis with spondylolisthesis in a United States Marine Corps veteran: a case report. *J Chiropr Med.* 2009;8:125-30.

**Description:** *Based upon the presentation of clinical features and management of a case, the authors describe that lumbar flexion/distraction may serve as a safe and effective component of conservative management of mechanical low back pain for some patients with spondylolysis and spondylolisthesis.*

7. **Koo TK**. Devices and methods for closed reduction of diaphyseal fracture. *Recent Patents Biomed. Eng.* 2009 2(2): 85-96.

**Description:** *This paper reviewed the advancements and patents in methods and apparatus developed to assist with closed reduction of diaphyseal fractures of long bones. Pros and cons of each approach as well as the current and future directions were also discussed.*

8. **Koo TK** and Papuga MO. A computer aided method for closed reduction of diaphyseal tibial fracture using projection images: A feasibility study. *Comput.Aided Surg.* 2009;14: 1-13.

**Description:** *This paper described the development and validation of a X-ray based computer-aided method for closed tibial shaft fracture reduction. The method relies on the measurements of 12 projection parameters from an anteroposterior radiograph, a lateral radiograph, and a transverse projection photograph to calculate the adjustment requirements of a custom-made unilateral external fixation device to execute the reduction.*

9. Li L, Tong KY, Hu XL, Hung LK, and **Koo TK**. Incorporating ultrasound-measured musculotendon parameters to subject-specific EMG-driven model to simulate voluntary elbow flexion for persons after stroke. *Clin.Biomech.(Bristol., Avon.)* 2009;24:101-9.

**Description:** *This paper addressed the feasibility of using EMG-driven musculoskeletal modeling combined with in-vivo ultrasound measurement of musculotendon parameters for the prediction of voluntary elbow movement in subjects with stroke. Our simulation demonstrated that the use of in vivo subject-specific musculotendon parameters would result in better prediction as compared with the use of cadaveric data extracted from the literature.*

10. **Murphy DR**, Coulis CM, and Gerrard JK. Cervical spondylosis with spinal cord encroachment: should preventive surgery be recommended? *Chiropr.Osteopat.* 2009;17:8.

**Description:** Based upon this review of literature, there is no definite evidence that indicates increased risk of trauma-induced myelopathy or spinal cord injury in individuals who have spondylotic encroachment on the cervical spinal cord without myelopathy. Population-based case-control or, preferably, prospective cohort studies are needed to provide an evidence-based recommendation for prophylactic decompression surgery in patients with spondylotic encroachment on the cervical spinal cord in the absence of frank myelopathy.

11. **Murphy DR**, Hurwitz EL, Gerrard JK, and Clary R. Pain patterns and descriptions in patients with radicular pain: Does the pain necessarily follow a specific dermatome? *Chiropr.Osteopat.* 2009;17:9.

**Description:** Based upon retrospective chart review of 226 nerve roots in 169 consecutive patients diagnosed with cervical or lumbar nerve root pain, the sensitivity (SE) and specificity (SP) for dermatomal pattern of pain are low with the exception of the C4 level (Se 0.60, Sp 0.72, n = 5) and the S1 level (Se 0.65, Sp 0.80, n = 37).

12. **Murphy DR**, Hurwitz EL, and McGovern EE. A nonsurgical approach to the management of patients with lumbar radiculopathy secondary to herniated disk: a prospective observational cohort study with follow-up. *J.Manipulative Physiol Ther.* 2009;32:723-33.

**Description:** The article describes the treatment outcomes of 49 patients with lumbar radiculopathy secondary to disk herniation using a prospective observational cohort study design with follow-up. The follow-up period was on average 14.5 months. Using a diagnosis-based clinical decision rule, diagnostic and management algorithms were followed with clinically meaningful improvements in pain and disability occurring in 70% to 79% of the patients immediately post-treatment and at follow-up.

13. **Murphy DR**, Hurwitz EL, and McGovern EE. Outcome of pregnancy-related lumbopelvic pain treated according to a diagnosis-based decision rule: a prospective observational cohort study. *J.Manipulative Physiol Ther.* 2009;32:616-24.

**Description:** The article describes the treatment outcomes of 78 patients with pregnancy-related lumbopelvic pain (PRLP) using a prospective observational cohort study design. Using a diagnosis-based clinical decision rule, diagnostic and management algorithms were followed with clinically meaningful improvements in pain and disability occurring in 82% and 72% of the patients immediately post-treatment, respectively.

14. **Passmore SR<sup>3</sup>** and Dunn AS. Positive patient outcome after spinal manipulation in a case of cervical angina. *Man.Ther.* 2009.

**Description:** This case report details the identification, and management of a female patient with the underdiagnosed clinical presentation of cervical angina. This patient responded favourably to cervicothoracic, and costotransverse joint manipulation. Anecdotally, this was the first case report published by chiropractors who delivered care to a patient within the United States Veterans Health Administration.

15. Reynolds DG, Shaikh S, **Papuga M**, Lerner AL, O'Keefe RJ, Schwarz EM, and Awad HA. MicroCT-based measurement of cortical bone graft-to-host union. *J.Bone Miner.Res.* 2009;24:899-907.

***Description:** This study introduces a novel means by which to quantify bone healing in a mouse model of bone grafts. The ability of two types of bone grafts, Allografts and Autografts are investigated by means of Micro-CT imaging and 3D reconstruction of the bone-grate interfaces.*

16. **Walker RA**, Lovejoy CO, and Cordes R. Histomorphological Variation in the Appendicular Skeleton. *The Open Anthropology Journal* 2009;2:1-35.

***Description:** Bone responds to the forces that are imposed upon it. This is commonly referred to as "Wolff's Law." While bone is a highly plastic tissue, responding to the environment by which it is surrounded, a great deal of the form and architecture of bone is genetically predetermined, and "Wolff's Law" can only apply within reasonably strict limits. In this article, we demonstrate this through the study of the histology of multiple bones in human and other vertebrate skeletal material.*

17. **Zhang Q**, Chen Y, Li H, Zheng X, and Fang Wang T. Thinking on growing up of complementary and alternative medicine in North America health care system. *Journal of Beijing University of Traditional Chinese Medicine.* 2009;16:38-41.

***Description:** There are two distinct healthcare systems in China, Western Medicine and Chinese Medicine. In addition to the Western/Mainstream Medicine, health care in North America (USA & Canada) also includes some form Alternative/Complementary Medicine, which includes Naturopathic Medicine, Chiropractic, Homeopath, Chinese Medicine and Ayurvedic Medicine, etc. The rapid development in modern science and technology has led to great change in public health awareness in North America. Going back to nature and seeking help from the nature has lately become the fashion. The present article intends to introduce the status of Alternative/Complementary Medicine in North American Healthcare system, analysis its characteristics, explore the reasons behind change and its future prospect.*

18. Chen Y, Li H, Zheng X, **Zhang Q**, and Want T. Analysis of the Rise of "Acupuncture Fever" and Sustainable Development of Acupuncture in the United States with Health Believe Model. *Journal of Beijing University of Traditional Chinese Medicine (Clinical Medicine).* 2010: 16(6)::6-11.

***Description:** Based on reviewing literature and survey data, the authors used Health Believe Model (HBM) to analyze the social-psychological factor of Acupuncture Fever in the US. Authors also introduce some strategies to promote sustainable development of acupuncture in the US, including promote public perception of benefit, possibility of action*

and self-efficacy, increase influence to people with different classes, races and education received, as well as decrease public perception of barriers.

19. Chen Y, Li H, Zheng X, **Zhang Q**, and Wang T. Research on meridian differentiation and classification for whiplash injury based on meridian sinew theory. Journal of Beijing University of Traditional Chinese Medicine. 2010;33(8):517-20.

**Description:** Whiplash injury is a common condition in general acupuncture practice in the United States. By reviewing the Sinew Channel Theory from Nei Jing (The Inner Classic of the Yellow Emperor), analyzing the mechanism of whiplash injury and the nature of corresponding symptoms and signs, the authors categorized four common patterns of whiplash injury as Taiyang, Yangming, Shaoyang and Shaoyin. Recognizing these patterns will help practitioners to enhance their clinical therapeutic effects.

20. Descarreaux M, **Passmore SR**, and Cantin V. Head movement kinematics during rapid aiming task performance in healthy and neck-pain participants: the importance of optimal task difficulty. Man.Ther. 2010;15:445-50.

**Description:** Head repositioning tasks have been used in different experimental and clinical contexts but have yet to offer insight as to the task performance strategy. The purpose of this study was to explore the kinematics from a head aiming task that encompasses a Fitt's task in neck pain patients and healthy control subjects. Decreased motor performance was observed in chronic neck pain patients during the most challenging cervical pointing task condition. These results may imply that in order for a performance based outcome measure to yield observable differences conditions that meet or exceed the optimum challenge point of the population tested should be employed.

21. **Dougherty P**, Salsbury Lyons S, Everett C, Weiner D. Chronic Lower Back Pain with Stenosis in an Older Adult Male. Topics in Integrative Health Care. 2010;1:1-15.

**Description:** Presented in the framework of a case study, this is a multidisciplinary perspective on the management of spinal stenosis. The authors present the perspectives of: Geriatrician, Physiatrist, Geriatric Nurse and Chiropractor.

22. **Ebbets JR**. Children and Sport. Journal of Clinical Chiropractic Pediatrics. 2010;11:707-12.

**Description:** The manuscript addressed the ongoing dilemma of training and competition versus the growth and development in children. Discussed was the importance of considering child developmental stages when introducing sports activities to youth. Central themes included the fact that children should not be trained as "little adults" and that children, like all things only grow and mature once, which underscores the importance of a plan for development. Subtopics included age of specialization, volume versus intensity of training, role of winning and fatigue syndromes.

23. **Ergil K** and Wright J. How Do Food and Drug Administration CGMPs for Dietary Supplements Affect Oriental Medicine Practitioners? *The American Acupuncturist* 2010;51:28-31.

**Description:** *This article is designed to briefly address the history and regulatory impacts of recently adopted rules governing the manufacture of dietary supplements. Both the large scale manufacture of herbal products (and other supplements) and the compounding of individualized herbal formulations in small dispensary settings are covered by its regulations. Included in this article is the history of the regulation, a description of the concept of GMP or good manufacturing practice, an examination of what the Food and Drug Administration (FDA) regulates, and a brief discussion of the new regulation and how this impacts Oriental medicine practitioners.*

24. **Ergil K** and Wright J. Prepared Medicines in Relation to FDA CGMPs for Dietary Supplements. *The American Acupuncturist* 2010;53:27-9.

**Description:** *This article addresses issues regarding the recommendation and sale of prepared forms of Chinese medicines or “patent” medicines that are now available as dietary supplements. We will discuss several points that may be important to practitioners whose practice includes the dispensing or sale of dietary supplements. These are: the lack of a good conceptual fit between Chinese prepared medicines or “patents” and dietary supplements, the Food and Drug Administration provisions exempting retailers from the provisions of the Current Good Manufacturing Practice (CGMP), and the basis for and approach to practitioner “due diligence” with regard to sourcing CGMP compliant products. This article will not discuss compounding (preparing formulas from loose herbs or granules) in the office setting. This topic will be addressed in a later publication.*

25. Hawk C, Schneider M, **Dougherty P**, Gleberzon BJ, Killinger LZ. Best practices recommendations for chiropractic care for older adults: results of a consensus process. *J Manipulative Physiol Ther.* 2010;33:464-73.

**Description:** *This manuscript presents the results of a Delphi process for recommendations on best practices for the management of older adults. Practical recommendations are presented for both the practicing chiropractor, but also for the educator teaching in a geriatric class.*

26. Judge LW and **Burke JR**. The Effect of Recovery Time on Strength Performance Following a High-Intensity Bench Press Workout in Males and Females. *International Journal of Sports Physiology and Performance* 2010;5:184-96.

**Description:** *The female advantage in fatigue resistance may impact strength development. The study addressed strength recovery patterns as a function of gender and training background with implications for designing exercise training programs to optimize*

strength development in males and females.

27. Kamerath J and **Morgan WE<sup>4</sup>**. Absent Inferior Vena Cava Resulting in Exercise-Induced Epidural Venous Plexus Congestion and Lower Extremity Numbness. Spine 2010;35:E924-E927.

**Description:** *The clinical features of a case with exercise-induced lower extremity numbness and weakness as well as cauda equina symptoms in a patient with infrarenal inferior vena cava (IVC) agenesis and a review of literature are discussed.*

28. Ladas EJ, Rooney D, **Taromina K**, Ndao DH, and Kelly KM. The safety of acupuncture in children and adolescents with cancer therapy-related thrombocytopenia. Support.Care Cancer 2010;18:1487-90.

**Description:** *Acupuncture is frequently used to manage the side effects associated with cancer therapy. In acupuncture practice, the presence of thrombocytopenia is a relative contraindication to acupuncture use among patients with cancer. However, the safety of acupuncture in patients with cancer treatment-related thrombocytopenia has not been previously investigated. This retrospective case series provides descriptive data on the safety of acupuncture in patients with cancer with and without thrombocytopenia.*

29. Li H, Zheng X, **Zhang Q**, Yemeng C, and Fang Wang T. The Leading Role of Channel Pattern Differentiation in Acupuncture Practice. Journal of Acupuncture Research 2010;35:142-5.

**Description:** *Channel Pattern Differentiation has played a leading role in acupuncture practice since the time of Nei Jing (The Inner Classic of the Yellow Emperor). For the past several decades, however, the clinical application of channel pattern differentiation has begun to diminish; there is even a trend that it will be replaced by Zang- Fu (Organ) pattern differentiation. The authors elaborate the importance of channel pattern differentiation by analyzing its theory from Nei Jing (The Inner Classic of the Yellow Emperor) and by summing up the methods, clinical significance and applications of the basic diagnostic tools--inquiry, observation, palpation, and measurement of imbalance using modern instruments (electrical, thermal, etc.) on channels and points.*

30. Li H, Zheng X, **Zhang Q**, Yemeng C, Fang Wang T. Preliminary Study on TCM Diagnosis and Treatment Strategies for Lyme Disease. Journal of Beijing University of Traditional Chinese Medicine (Clinical Medicine). 2010;17(5) 29-31.pages?

**Description:** *Lyme disease is caused by an invasive spirochetal bacterium. Generally, the patients in chronic stage do not respond well to long-term antibiotic treatment, and also likely suffer from sever side effects of the drug. Clinical research shows by using special Chinese herbs and acupuncture points would improve various symptoms of Lyme disease, especially in its chronic stages. This new approach is seen to be safe, effective and economical, especially for the chronic stage of Lyme disease.*

31. **Murphy DR.** Current understanding of the relationship between cervical manipulation and stroke: what does it mean for the chiropractic profession? *Chiropr.Osteopat.* 2010;18:22.

**Description:** *The commentary discusses the role of chiropractic physician in recognizing the patient who may be having vertebral artery dissection and stroke (VADS). The author presents the best current literature refuting the casual relationship between cervical manipulative therapy (CMT) and VADS. The author encourages the chiropractic profession to embrace the idea of a public health campaign to educate the public about the warning signs and symptoms of VADS, an uncommon but potentially devastating disorder.*

32. **Mussmann SE, Poirier JN.** Snowboarder's fracture caused by a wakeboarding injury: a case report. *Journal of Chiropractic Medicine.* 2010;9:174-8.

**Description:** *This article provides a retrospective case report and imaging of a patient who sustained a fracture of the lateral talar processes while wakeboarding along with a review of the etiology, diagnosis, and treatment of snowboarder's fractures.*

33. **Koo TK, Wong C, and Zheng Y.** Reliability of sonomyography for pectoralis major thickness measurement. *J.Manipulative Physiol Ther.* 2010;33:386-94.

**Description:** *Muscle thickness is a widely used parameter for quantifying muscle function in ultrasound imaging. However, current measurement techniques generally rely on manual digitization, which is subjective, time consuming, and prone to error. The primary purposes of this study were to develop an automated muscle boundary tracking algorithm to overcome these limitations and to report its intra-examiner reliability on pectoralis major muscle. Results demonstrated excellent intra-examiner reliability of the sonomyographic measurements.*

34. **Papuga, MO, Proulx ST, Kwok E, You Z, Rubery PT, Dougherty PE, Hilton MJ, Awad HA, and Schwarz EM.** Chronic axial compression of the mouse tail segment induces MRI bone marrow edema changes that correlate with increased marrow vasculature and cellularity. *J.Orthop.Res.* 2010;DOI 10.1002/jor.21103:1-9.

**Description:** *The article examines the cellular and molecular changes that occur in vertebral segments under chronic overload. The study incorporates in a mouse tail model the use of MRI to longitudinally assess both wild type and immune compromised genetically modified mice. This approach enables the investigators to look at the role of specific molecular pathways and their role in the development of degenerative changes in the spine, including the development of bone marrow edema. Using chronic compression the progression of degenerative changes due to external overloading of the spine is assessed. Micro-CT and histological investigation post-mortem help to paint a complete picture of the degenerative process. Translational research such as this helps to inform clinicians as to the true nature of the physiology that manifests in advanced imaging techniques.*

35. **Passmore SR**, Burke JR, Good C, Lyons JL, and Dunn AS. Spinal manipulation impacts cervical spine movement and Fitts' task performance: a single-blind randomized before-after trial. *J. Manipulative Physiol Ther.* 2010;33:189-92.

**Description:** *The objective of this study was to determine if active cervical range of motion (ROM) and Fitts' task movement time differences occurred after high-velocity low-amplitude cervical spinal manipulation (SM) across various indexes of difficulty. A linear relationship between indexes of difficulty and movement time as predicted by Fitt's law was observed. Significant group effects indicate that SM not only increases cervical active ROM but also facilitates that performance of a cervical spine Fitts' task requiring rotation. This task may be used to quantify motor performance in clinically symptomatic populations with reduced ROM who are appropriate candidates for SM.*

36. **Passmore, SR**, Riva, JJ, and Goldsmith, CH. Chiropractors at McMaster's University: The formation and direction of a university-based multidisciplinary chiropractic working group. *The Journal of the Canadian Chiropractic Association.* 2010; 54(1) 11-13.

**Description:** *This workshop and group development process offers to act as a template for other university-based working groups. There are vast resources and opportunities within the publicly funded education system as evidenced by the chiropractic professions in other countries. This manuscript also offers to inform other chiropractors presently operating in isolation (as clinicians, scientists, clinician scientists or clinician scientists in training) within other publicly funded universities of the practical application of group formation and interdepartmental collaboration.*

37. Triano JJ, Goertz C, Weeks J, **Murphy DR**, Kranz KC, **McClelland GC**, Kopansky-Giles D, **Morgan W**, and Nelson CF. Chiropractic in North America: toward a strategic plan for professional renewal--outcomes from the 2006 Chiropractic Strategic Planning Conference. *J Manipulative Physiol Ther.* 2010;33:395-405.

**Description:** *The report describes the process, participation, and recommendations of a set of consensus conferences on strategy for professional growth within five key domains. The five domains were education, research, regulation, workplace, and leadership. The overall goal was further development of public trust, better alignment between the chiropractic profession and its stakeholder and strengthening chiropractic's role in health care.*

38. **Zhang Q**, Chen Y, Li H, and Zheng XWF. A comparative study of diagnostic characteristics of the homeopathic medicine and Chinese Medicine. *International Journal of Traditional Chinese Medicine* 2010;32:446-7.

**Description:** *Homeopathy is a relatively independent therapeutic system that is very popular in Europe and the United States. Although homeopathic medicine and Chinese medicine belongs to two different medical systems stemmed from two distinct cultural backgrounds, they do share similar philosophies, holistic treatment principles, and more importantly diagnostic approaches. This study focuses on homeopathic diagnosis and discusses its diagnostic strategies, laws and clinic practice characteristics. Through the*

*comparison of homeopathic and Chinese medicine diagnosis to learn the essence of homeopathic diagnosis, enrich Chinese medicine diagnostic theory and improve its quality of diagnosis and treatment.*

39. Zheng X and **Zhang Q**. Application of palpation in various acupuncture schools of the United States: current status and considerations. Chinese Acupuncture and Moxibustion. 2010;30:591-4.

**Description:** *Palpation is a common diagnostic method in Chinese medicine. By examining the current status and features of various palpations in different acupuncture schools in the United States, the authors concluded that the palpation feedback examination is not only the manifestation of people oriented individualized treatment both physically and psychologically in America, but also a kind of inheritance and development of diagnosis and treatment in the modernization of TCM.*

40. Zheng X, **Zhang Q**, Chen Y, Li H, and Fang Wang T. Discussion the diagnosis and treatment methods of other Acupuncture Schools in United States. Journal of Traditional Chinese Medicine 2010;30:180-3.

**Description:** *The multi-cultural character of the United States supports a variety of acupuncture styles. This article traces the background and analyzes the current developmental stage of 3 acupuncture styles: Five Element Constitutional Acupuncture; Japanese Kiiko Acupuncture; American trigger point Acupuncture by comparing the similarities and differences of diagnostic methods, pattern differentiation, and treatment.*

41. Beattie PF, Nelson R, and **Murphy DR**. Development and preliminary validation of the MedRisk instrument to measure patient satisfaction with chiropractic care. J Manipulative Physiol Ther. 2011;34:23-9.

**Description:** *The report describes the development of a reliable and valid survey instrument (**MEDRISK**) to measure patient satisfaction with chiropractic care. The ability to capture various aspects of patient care that impact patient satisfaction is of great importance with respect to marketing, reimbursement, and treatment effectiveness. Thus, the development of survey instrument that is both practical to administer in a patient care setting with adequate psychometric properties to capture important aspects of the clinical encounter is a critical step towards understanding effective practice characteristics of chiropractic care in the real-world setting.*

42. Chen Y, Li H, Zheng X, **Zhang Q**, Wang T. Preliminary Study of Pattern Differentiation and Acupuncture Treatment for Whiplash Injuries. Chinese Acupuncture and Moxibustion. 2011;31(4):353-6.

**Description:** *Whiplash injury is a common condition in acupuncture practice in the United States. Based on analyzing the mechanism, clinical features of whiplash injuries from both of biomedicine and traditional Chinese medicine perspective, authors claimed the approach of pattern differentiation which including the consideration of the location and*

*stage of injury is seen to be effective for Whiplash injury. Considering the location of the injury, it can be classified as Taiyang, Yangming, Shaoyang and Shaoyin patterns. Considering the stage of the injury, Qi Stagnation and Blood Stasis patterns are classified in the acute stage and Phlegm Accumulation, Insufficiency of the Liver and kidney and Qi & Blood Deficiencies patterns classified during the chronic stage.*

43. **Dougherty PE**. Back Pain: Still More Questions than Answers. Journal of American Chiropractic Association. 2011;48:6-7.

**Description:** *This small article articulates that need to consider the psychosocial aspects in the management of chronic lower back pain.*

44. **Dougherty PE**, Engel RM, Vemulpad S, Burke J. Spinal manipulative therapy for elderly patients with chronic obstructive pulmonary disease: a case series. J Manipulative Physiol Ther. 2011;34:413-7.

**Description:** *This case series presents data collected in a small sample of older adults living in a long-term care center. This is an important step in documenting the safety of the use of spinal manipulative therapy in older adults. While there is a need for larger and more rigorous study on this topic, the data are encouraging that the use of spinal manipulation in older adults, even those with osteoporosis, may be safe.*

45. **Murphy DR**, Gay CW. Manual therapy and ear pain: a report of four cases. J Can Chiropr Assoc. 2011;55:40-6.

**Description:** *The report discusses the presentation of symptoms, differential diagnosis, manual therapy and exercise treatment plans and successful treatment outcomes of four patients with idiopathic ear pain referred for chiropractic care.*

46. **Papuga MO**, Burke JR. The reliability of the associate platinum digital foot scanner in measuring previously developed footprint characteristics: a technical note. J Manipulative Physiol Ther. 2011;34:114-8.

**Description:** *Investigates the reliability of the flatbed scanning technology. Images of the plantar surface of the foot recorded with an Associate Platinum digital foot scanner measuring the Staheli Index, Chippaux-Smirak Index, Arch Angle, and Arch index. ICC values were calculated to evaluate intra-rater, inter-day, and inter-clinician reliability. Scanning technology provides a reliable measure of footprint indices, as demonstrated by high ICC values.*

47. **Papuga MO**, Kwok E, You Z, Rubery PT, Dougherty PE, Pryhuber G, Beck CA, Hilton MJ, Awad HA, and Schwarz EM. TNF is required for the induction but not the maintenance of compression-induced BME signals in murine tail vertebrae: Limitations of anti-TNF therapy for degenerative disc disease. J Orthop Res. 2011;29:1367-74.

**Description:** Investigates the relationship between chronic compression and TNF signaling in compression induced BME utilizing a tail vertebrae compression model with WT, TNF-Tg and TNFR1&2-/- mice to evaluate: 1) healing following release of chronic compression, 2) induction of BME in the absence of TNFR, and 3) efficacy of anti-TNF therapy. Data demonstrates a critical role for TNF in the induction of chronic compression-induced BME, but not in its maintenance. Amelioration of BME is achieved through biomechanical stability, but is not affected by anti-TNF therapy.

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