technique (SDT), could be used in coordination with a common orthopedic/neurologic test, the straight leg raise (SLR). **Case Series:** A retrospective study of 30 sequential patients treated at 1 practitioner's office who, following assessment and evaluation, were determined to have a positive SLR bilaterally, were adjusted with the SDT, and then reassessed utilizing the SLR (measured with a flexometer). To qualify for the study all 30 patients had to have similar SLR findings on both leg lifts, pain in the lumbosacral area with some pelvic area pain, unilateral lower extremity pain but not below the knee, and pain localizing to the leg contralateral to their antalgic lean. **Results:** Improvement immediately followed care in 27 of 30 cases with the least improvement by 4 patients at 5°and the maximum at 35° by 1 patient with the majority showing improvement between 10–25°. **Conclusion:** The SLR appeared to be a helpful method to monitor the functional improvement of the lumbar spine after successful SDT adjustments. The SLR also appeared to parallel positive symptomatic changes that accompanied lumbar spine improvement following the SDT applications. (This is an abstract from a conference presentation only and does not represent a full work that has been peer-reviewed and accepted for publication.)

Identification of suspicious skin lesions in chiropractic practice: a cross sectional study

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Introduction: Education and early detection are recommended to arrest the increasing incidence of skin cancer in the UK. Chiropractors are ideally placed to play a part in these programs. This study aimed to gather information on the incidence, detection, and referral patterns of suspicious skin lesions. **Methods:** Following ethical approval, a cross-sectional study was used to gather data on the accuracy of detecting suspicious skin lesions from clinical images and subsequent referral patterns amongst a sample of UK final-year chiropractic interns and registered chiropractors. The study also identified any further training needs. **Results:** A total of 125 surveys was collected and the majority (78%) agreed that screening for suspicious skin lesions was part of their role. On identification of lesions, 75% labeled malignant melanoma and squamous cell carcinoma as suspicious, <45% did so for basal cell carcinoma and actinic keratosis. While 74% had received some related training, 78% would be interested in receiving more. **Conclusion:** Overall, all groups agreed that screening patients for suspicious skin lesions was part of their role. There was no difference between interns and chiropractors identifying suspicious skin lesions. The level of knowledge in identifying suspicious lesions was low, identifying a training need. (This is an abstract from a conference presentation only and does not represent a full work that has been peer-reviewed and accepted for publication.)

Avulsion fracture of the iliac crest apophysis in a 15-year-old football player

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Introduction: This is a diagnosis that is considered rare in the literature and that we feel we were able to co-manage successfully, but which presented some pitfalls. **Methods:** The patient was treated and co-managed conservatively by chiropractic and orthopedic physicians in independent offices. Multiple imaging was obtained, verifying the diagnosis, and follow up was obtained later to vouch for the outcomes. **Results:** The patient's initial presentation was of a person in significant pain with antalgia and dysfunction due to a football injury. The imaging, computerized tomographic and radiographic, demonstrated apophyseal disruptions suggestive of a Salter-Harris type fracture. He was treated with laser therapy to the injured area and manipulation to other areas as indicated. He was also told to use crutches initially and not to participate until we re-evaluated and released him for such activity. **Conclusion:** Avulsion fractures, including those affecting the iliac crest may not be as rare as reported earlier. They could have significant consequences for young people if not properly diagnosed and treated. They should be evaluated by appropriate imaging, even in those who undergo minor trauma. (This is an abstract from a conference presentation only and does not represent a full work that has been peer-reviewed and accepted for publication.)

Evaluation of transcutaneous electrical nerve stimulation vs biofreeze in the treatment of back pain

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Introduction: One theory to explain how transcutaneous electrical nerve stimulation (TENS) decreases pain is the gate control theory, suggesting a gate mechanism is closed in the spinal cord, preventing pain-carrying messages from reaching the brain. Biofreeze (BF), a topical analgesic, is also thought to decrease pain by the gate control theory. **Methods:** The purpose was to evaluate the effect of BF on pain, fear avoidance, and disability in back pain compared to TENS. Participants were randomized into Funhab TENS or Funhab BF. Each group received Funhab plus treatment; TENS applied treatment 1 time per day for 15 minutes while BF applied treatment 3 times per day. Outcome measures included the visual analogue scale (VAS), Oswestry disability index (ODI), fear avoidance beliefs questionnaire physical activity subscale (FABQpa), and fear avoidance beliefs questionnaire work subscale (FABQW) pre- and post-study. **Results:** Twenty-two subjects completed the study (BF = 6, TENS = 16). The TENS group significantly declined in ODI and FABQ-PA scores ($p \leq 0.001$ and $p = 0.001$, respectively). The

BF group had significantly decreased FABQW scores ($p = 0.044$). Finally, both groups had significant declines in VAS ($p \leq 0.001$). Cost of BF was $15 per patient and TENS was $75 per patient. **Conclusion:** BF and TENS had statistically similar outcomes for pain, disability, and fear avoidance. Given the cost savings of BF, it would be a prudent choice to incorporate BF as a replacement for TENS. (This is an abstract from a conference presentation only and does not represent a full work that has been peer-reviewed and accepted for publication.)

Association between heart rate variability and novel pulse rate variability methods

John Hart

Introduction: A neurologic component, which includes an autonomic component, is assumed to exist in the condition known as vertebral subluxation (VS). High-tech methods of autonomic assessment (e.g., heart rate variability) are typically used only periodically (e.g., every 6 or 12 visits). As an additional option for autonomic assessment at all patient visits, this study introduced a new and potentially valid method of autonomic assessment that uses radial pulse variability. **Methods:** The study was approved by the Sherman College institutional review board. Thirty-two participants were examined with (1) regular heart rate variability (using the standard deviation of normal to normal [SDNN] value) and (2) novel pulse rate variability procedures. The novel methods are based on 4 manually palpated radial pulse measurements taken within a 2-minute period. **Results:** Two predictors emerged as having the strongest association with SDNN in this study: pulse rate mean and (novel) pulse rate mean minus the difference between maximum and minimum pulse rates. **Conclusion:** Chiropractors may have a new option for assessing autonomic function on every patient visit in the form of low-tech radial pulse rate variability. Further outcomes research with a random sample of patients is indicated as a next step in this study. (This is an abstract from a conference presentation only and does not represent a full work that has been peer-reviewed and accepted for publication.)

Is collaborative practice a feature of chiropractic education: a baseline survey

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Introduction and Background: Collaborative practice is considered best practice in terms of the benefits to patients, practitioners, optimizing health services, strengthening the health system, and improving health outcomes. Mainstream medical and allied health industries are implementing collaborative practice into their education programs by ways of interprofessional education (IPE) and interprofessional learning. **Objective:** The aim of this study is to investigate incidence of IPE/collaborative practice in chiropractic education programs. **Methods:** Investigate use of collaborative practice in chiropractic clinical education through published literature and open web search utilizing key terms by method of content analysis. **Results:** Evidence suggests some chiropractic institutions are engaging in collaborative practice. More institutions make use of terms indicating this practice on their publicly accessible web sites compared to that found in the literature. North American institutions were more frequently represented. **Conclusion:** This paper describes the results of a baseline investigation into the extent of collaborative learning present in chiropractic education programs. The findings indicated a low level of engagement, and the possible explanations to account for this were raised. (This is an abstract from a conference presentation only and does not represent a full work that has been peer-reviewed and accepted for publication.)

Prevalence of non-musculoskeletal vs musculoskeletal cases in a chiropractic student clinic

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Purpose: This study sought to identify the percentage of non-musculoskeletal and musculoskeletal conditions treated by interns in the National University of Health Sciences (NUHS) Student Clinic compared to chiropractic and allopathic health care professionals to help evaluate if NUHS student interns were being trained as primary care physicians. **Methods:** The information gathered was taken from the charts of patients treated from September 12, 2011 through December 9, 2011. The data included ICD codes for the conditions treated, the number of patient visits, patient age, and patient gender. **Results:** Of the 113 eligible patients 56% were women, the mean patient age was 28 years, they had an average of 3 treated diagnoses, and they had a mean of 7 treatments. Those treated for only musculoskeletal conditions totaled 52% of the patients; 48% of the patients were treated for non-musculoskeletal conditions or both musculoskeletal and non-musculoskeletal conditions. **Conclusion:** The NUHS Student Clinic interns were treating a greater percentage of non-musculoskeletal conditions and a lesser percentage of musculoskeletal conditions than practicing chiropractic physicians. The student interns treated a lesser percentage of non-musculoskeletal and a greater percentage of musculoskeletal than allopathic practitioners. This comparison suggests that NUHS is nearing its institutional goal of training student interns as primary care physicians. (This is an abstract from a conference presentation only and does not represent a full work that has been peer-reviewed and accepted for publication.)

Case report: a patient with low back pain and somatic referred pain concomitant with intermittent claudication in a chiropractic practice

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