

## Pain Medicine 2017



4<sup>th</sup> International Conference on

# PAIN MEDICINE

October 19-20, 2017 San Francisco, USA

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## Scientific Tracks & Abstracts

Day 1

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## The effects of radial extracorporeal shockwave therapy and dry needling on the pressure pain threshold of latent trigger points in the quadriceps

Richie Walsh<sup>1</sup>, Sharon Kinsella<sup>1</sup> and Johanson McEvoy<sup>2</sup><sup>1</sup>Institute of Technology Carlow, Ireland<sup>2</sup>United Physiotherapy, Ireland

**Statement of the Problem:** Trigger points (TrPs) can alter activation pattern and can become painful. Trigger points in the lower quarter are under-investigated. Latent TrPs in the vastus lateralis (VL) and vastus medialis (VM) may modify knee kinematics possibly resulting in pathologies such as patellofemoral pain syndrome or knee osteoarthritis. Active TrPs in the VL and VM may refer pain to the knee. The sensitivity of TrPs is measured with the pressure pain threshold (PPT) and has been found to be reliable. Dry needling (DN) is a recommended treatment for TrPs. Post-treatment soreness lasting up to three days has been reported. Radial extracorporeal shockwave therapy (rESWT) is a relatively new treatment for TrPs. The aim of this study is to compare the short-term effects of DN and rESWT on the PPT of latent TrPs in the VL and VM.

**Methodology & Theoretical Orientation:** A pilot randomized control study, with three groups DN, rESWT, and control, was conducted. The treatment sessions were undertaken over a week was the PPT and was recorded before treatment. Moreover, two follow-up sessions occurred which was PPT which was also recorded.

**Findings:** DN and rESWT both improve the PPT in the VL and VM. DN showed a greater improvement one week after treatment, but there was an increase in TrP sensitivity during treatment, possibly due to post-treatment soreness ( $p < 0.01$ ). rESWT, on the other hand, has less of an improvement than DN but did not demonstrate any transient adverse effects ( $p < 0.01$ ).

**Conclusion & Significance:** DN and rESWT can improve the sensitivity of TrPs in the thigh. However, rESWT does not cause any post treatment soreness. Further investigation is needed to determine the medium-term effects of DN and rESWT on the PPT in the VL and VM, as well as other muscles responsible for stabilizing the knee..

### Biography

Richie Walsh is pursuing his MSc from Institute of Technology, Carlow. He is preparing to enroll on a PhD from Institute of Technology Carlow. He has published two papers in reputable journals and is serving as Vice Secretary and Chair Person of the Education Committee of Athletic Rehabilitation Therapy Ireland.

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## Novel approach: Ultrasound 3D/4D-guided procedures in interventional pain management

**Ernesto Delgado Cidranes**  
Advanced Pain Management Center

**Objective:** To determine the effectiveness of advanced interventional ultrasound in the management of chronic pain (elastography, 3D/4D volumetric analysis and strain/strain rate).

**Methods:** We examined 113 patients which were performed advanced ultrasound-guided interventional techniques. High performance ultrasound to assess injuries and anatomy were used; as well as during and after interventional technique in the operating room. Two anesthesiologists with over fifteen years of experience made techniques.

**Results:** All interventional techniques could be performed on an ultrasound-guided and tested in volumetric studies. The largest group was lumbar facet syndrome with a prevalence of 45%. High specificity and sensitivity was found in our study. Improved visualization x-rays compared to 85% of cases.

**Conclusions:** Three-dimensional ultrasound is a new and powerful tool that ensures safety and good results in addressing the treatment of pain..

### Biography

Ernesto Delgado Cidranes is Spanish Anesthesiologist, Director, CEO, and Editorial Board Member of *Journal of Pain Management and Therapy*. He is also AIUM Member, Reviewer and Advisor of *Journal of Ultrasound in Medicine*, American Institute, USA; Chairman of Department of Anesthesia and Pain Medicine, Spanish University Health Ministry; Professor of *Advanced Ultrasound* and Founder at Advanced Pain Management Center Madrid. He has an integrative and interdisciplinary concept in the treatment of pain.

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## Probing the mechanism of sciatica pain with novel imaging approaches

**Yi Zhang**

Massachusetts General Hospital, USA

Low back pain is classified as axial back pain and radicular back pain, commonly referred to as sciatica. The incidence of radicular symptoms (sciatica) in patients with back pain has been reported from 12% to 40%. The mechanism of chronic sciatica pain is still not well understood. A fundamental question remains unanswered: Is sciatica pain produced by persistent inflammation in spinal structures along spinal nerve roots, or is it merely the result of a neuropathic state of the involved spinal nerves per se without overt inflammation? Nevertheless, this condition has been treated with epidural steroid injections, with varying success. The current literature regarding the effectiveness of epidural injections is inconclusive with highly variable outcomes based on the technique, outcome measures, patient selection, and methodology. Severe complications can occur with epidural steroid injections. There exists significant doubt in the medical community whether epidural is effective in treating chronic radicular pain and hence whether it should be used to treat such conditions. Given the known side effects of corticosteroid and potential serious procedural complications associated with epidural steroid injection, it would be desirable to identify patients with ongoing inflammation in the epidural space and provide epidural steroid injection in more selective subpopulations of radicular pain patients in order to improve success rate of epidural steroid injection and eliminate unnecessary injections. An image tool that can visualize inflammatory process in the spine in vivo will provide tremendous diagnostic value in the diagnosis of low back pain with or without sciatica. Availability of PET/MRI scanners offers now a unique opportunity to study the association between neuroinflammation and structural changes in this major medical problem. We will present our recent progresses in utilizing this novel technology in imaging of sciatica pain patients.

### Biography

Yi Zhang is a board certified pain management Specialist and Anesthesiologist practicing interventional pain management at the Center for Pain Medicine, Department of Anesthesia, Critical care and Pain Medicine at Massachusetts General Hospital, Harvard medical School in Boston MA USA. He is the Director of the MGH Inpatient Pain Services and Director of Mass General West Center for Pain Management. He obtained his MD degree from Peking Union Medical College, and he is trained in Anesthesiology Residency and Pain Medicine Fellowship at the Massachusetts General Hospital, Harvard Medical School. He also obtained a PhD degree in Neuroscience from Johns Hopkins School of Medicine and a Master's degree in Computer Science from Johns Hopkins Whiting School of Engineering. In addition to patient care and administration, he has also been developing novel technologies in diagnosing and treating pain. His recent research focuses on the development of novel imaging technologies in diagnosing sciatica pain, a common chronic pain condition with an immense socioeconomic impact..

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## How to report statistics in medicine?

**Michelle Secic**

Secic Statistical Consulting, Inc., USA

I suspect you do not have the time or desire to learn all the nuances, formulas and theories in statistical computations. You just want to know what tests/methods to use for your study and what needs to be reported. Whether you are reporting results to the FDA or in the medical literature or to upper management, etc. you will need to ensure you are reporting your results accurately, for your type of study. You can think of my guidelines as Cliff's notes for reporting statistics in medicine. This is just a small snapshot of the comprehensive guide. I will discuss the following three common study objectives: 1) group comparison, 2) performance goal and 3) identify risk factors. For each of the three common study objectives, I will first present examples accurately stating the objectives. Second, I will provide a comprehensive template for reporting the results from each of the three types of studies. The templates will include relevant medical examples, numeric results, statistical findings, tests/methods, etc. Finally, I will provide the full list of concepts covered in my guidelines.

### Biography

Michelle Secic has over 25 years of biostatistical experience. She has worked as a Biostatistician at the Cleveland Clinic Foundation (CCF) for 11 years and was Manager of the Research Section of the Transplant Center at CCF. She then became President of Secic Statistical Consulting, Inc. where she collaborates with researchers from hospitals, pharmaceutical companies, medical device companies and CROs around the world. She coauthored the book, '*How to Report Statistics in Medicine: Annotated Guidelines for Authors, Editors and Reviewers*' which was published by the American college of physicians (1st edition 1997, translation to Chinese 2002, 2nd edition 2006, translation into Japanese 2010, translation into Russian 2013). This book is referenced by the FDA in their guidance for industry document, statistical guidance on reporting results from studies evaluating diagnostic tests..

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## Applications on Graded Motor Imagery

**Lincoln Nguyen**  
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Our applications bring graded motor imagery and mirror therapy to virtual reality, allowing for clinician control over direction of mirroring, smoothness of movement, gain and activity levels. It is aimed at patients who suffer from: 1) Lower Back Pain 2) Sport injuries 3) Repetitive Stress Injuries 4) Cervical Pain (e.g., “whiplash”) 5) Stroke-Related Pain 6) Fibromyalgia 7) Complex Regional Pain Syndrome (CRPS) 8) Phantom Limb Pain.

Karuna’s analytics platform captures individual patients’ movements based on motion tracking technology. We run machine-learning algorithms on in order to personalize the therapy session. Motion is tracked with a Leap Motion camera affixed to an HTC Vive headset. The mirror therapy/guided imagery application is written in the Unity Framework.

### Biography

Lincoln completed his BS in psychobiology in the year 2007 from University of California, Los Angeles. In the year 2011, he completed his MS in bioinformatics from The Johns Hopkins University. He worked as a software engineer in Cisco. Currently, he is the CEO of Karuna labs.

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## The effectiveness of using Hypnosis Combined Therapy (HCT) for the treatment of chronic pain (CRPS, fibromyalgia, neuropathic pain, etc.)

**Traci Patterson**

Advanced Pathways Hypnosis, USA

**Introduction:** Chronic pain is currently affecting more than 100 million people in the US alone, and the figures continue to grow exponentially. Chronic pain conditions can include CRPS, Fibromyalgia, neuropathic pain, and chronic migraines. Researchers have shown that chronic pain affects the way your brain processes pain signals through the limbic system. Objective: The objective is to discuss the effectiveness of Hypnosis Combined Therapy (HCT), by having chronic pain patients complete a week long intensive.

**Aim:** The aim is to establish the efficacy of HCT in the treatment of chronic pain. Case Studies: A) 51 year old female diagnosed with Fibromyalgia for 30 years. When she arrived her average pain level was 9/10 (10 being worst pain imaginable), sleep quality 9/10 (10 being worst) and quality of life 8/10 (10 being worst). She completed a week long intensive with HCT. At the conclusion of the week her pain levels were 0/10, sleep quality was 0/10 (10 being worst) and quality of life 1/10 (10 being worst). B) 27 year old female diagnosed with CRPS type 1. When she arrived her average pain level was 9/10 (10 being worst), sleep quality 7/10 (10 being worst) and quality of life 7/10 (10 being worst). At the conclusion of the week her pain levels were 0/10 (10 being worst), sleep quality 0/10 (10 being worst) and quality of life 1/10 (10 being worst).

**Conclusion:** HCT has proven to significantly decrease pain levels and improve the lives of chronic pain patients without the need for invasive procedures or medications.

### Biography

Traci A Patterson, Owner and Founder of Advanced Pathways Hypnosis, Irvine, CA, is an Instructor and Clinical Hypnotherapist, who specialized in chronic pain and PTSD. Her interests include: Complex Regional Pain Syndrome (CRPS), Fibromyalgia, neuropathic pain, cancer patients and PTSD. She holds her hypnosis/ hypnotherapy credentials through National Guild of Hypnotists and is internationally credentialed. She also holds a Doctorate degree from University California Irvine. She comes to the field from a perspective that few others have, as she was formerly diagnosed herself with CRPS, and spent the better part of the next seven years traveling the world, both literally and figuratively, in search of solutions for a disease which traditional medicine says has no cure.

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## Chronic pain, function and renewing of hope

**Henk van der Veen**

Chronic Pain Science Foundation, Netherlands

This presentation is about chronic pain that has no known substrate, which is a well-known major problem worldwide and for which there is no real solution. The condition is severely debilitating with major psychosocial and economic consequences. This is actually quite amazing considering the history has given indications, and sometimes even more than that, to further research a variety of hypotheses. Here is where science is cutting off its nose to spite its own face: Research and scientific discoveries are considered to be obsolete or "out of date" after two to five years. Regular evaluation of old studies never or hardly ever takes place in the "rat race" of premiers. This presentation is such an evaluation in a nutshell where the past, present and future is tied together briefly, because one hundred years of chronic pain has to be summarized in 20 minutes. There is still hope.

### Biography

Henk van der Veen graduated as a Medical Doctor at University of Groningen, the Netherlands in 1972. He worked as Family Physician in a practice with another physician until 1991. He worked as Pain Researcher since 1975. Since 1980, he has been pioneer in infrared thermography for conditions with chronic pain, in particular chronic pain without an identifiable substrate. He is now Occupational Physician since 1991.

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## Workshop

Day 2

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## *Richmond M Stace*

*Specialist Pain Physiotherapist & Pain Coach, UK*

### **A new vision: Understand pain and pain coaching to overcome pain and live a meaningful life**

Chronic pain is the number one global health burden. The costs to global society are enormous both financially and in terms of individual suffering. In Europe, it is estimated that at least 100 million people endure chronic pain. The figure is similar in America. Why is this such a big problem? One of the reasons is that pain is misunderstood in and by society. Pain is a social problem, and the answers lie in social change. Pain remains predominantly thought of as relating to an injury, a pathology or structural change in the body. This is not the case yet much of the thinking and the treatments are based on this model, the biomedical model. For many years we have known that pain is poorly related to these factors, instead being part of a state of protection of the whole person in the face of perceived threat. Understanding this fact changes everything, including unlocking each person's potential to get better and live life. My vision is a society that understands pain and knows how to relieve suffering by building upon wellness. There are a number of ways that we can do this, starting with making the choice to commit to the day to day practices that we know are key for being well. In this talk I will present the pinnacle of our understanding of pain before describing an approach that blends pain science with positive strengths based coaching. This is about getting the best from each individual as he or she taps into their potential and resources to live a healthy and happy life according to their picture of success.

### **Biography**

Richmond M Stace is a Chartered Physiotherapist, Pain Coach and social entrepreneur. My work focuses on delivering the knowledge and know how about overcoming pain to as many people across the globe. I have a background in pain science, which I bring to society in practical ways so that people can reach their potential to live well. This is built upon more than 20 years' experience in healthcare, three university degrees, a diploma in adult nursing and a passion for social change.

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