



University of Pittsburgh

*School of Health and Rehabilitation Sciences
Department of Physical Therapy*

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Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA

Leon Chaitow DO, ND: Application of soft tissue therapies for musculoskeletal pain

Dr. Chaitow is an Honorary Fellow, University of Westminster, London, and is Editor-in-Chief of the Journal of Bodywork & Movement Therapies (Elsevier). He is also a Consultant Osteopath and Naturopath, Marylebone Health Centre, London, England. He has published over 70 books including; Positional Release Techniques, Modern Neuromuscular Techniques, Muscle Energy Techniques, Clinical Applications of NeuroMuscular Technique, and Fibromyalgia Syndrome: A Practitioner's Guide to Treatment.

Dr. Chaitow will present an overview of the importance of including soft tissue manipulation techniques into the manual therapist's clinical repertoire. While high velocity low amplitude (HVLA) thrust manipulation has been shown to be an effective and safe method for restoring joint motion, there are many other non-thrust techniques that restore joint motion by affecting the myofascial tissues associated with joint dysfunction. Dr. Chaitow will review some of the traditional osteopathic approaches to joint mobilization, including Muscle Energy Technique (MET) which utilizes variations of isometric contractions of the muscles associated with joint restriction, as well as Strain/Counterstrain (SCS) Technique, a positional release method that disengages from the restriction barrier and is believed to invoke neural responses that lead to spontaneous release of joint restriction. Current research that offers alternative explanations for the efficacy of SCS and MET, will be reported. He will also discuss the various myofascial release and fascial manipulation methods that are popular with manual therapists and body workers, and review the rapidly growing clinical research evidence that helps explain the mechanisms involved in the use of these soft tissue manipulation methods, either as alternatives to HVLA use, or as preparatory approaches to HVLA application.

Siegfried Mense MD: Peripheral and central mechanisms of myofascial pain

Dr. Mense is a professor in the department of neuroanatomy at Heidelberg University, Mannheim, Germany. He is considered a world authority on the neuroanatomy and neurophysiology of muscle pain, and has published over 180 scientific articles and book contributions on these topics. He is the primary author of the textbook "Muscle Pain" which is a definitive resource on the principles of the diagnosis and treatment of muscle pain syndromes.

Dr. Mense's presentation will include four sets of data which lead to four main conclusions: 1) that excitation of muscle nociceptors and hence the occurrence of muscle pain depends on the balance of sensitizing and desensitizing chemical factors in the muscle; 2) for central sensitization to occur, sub-threshold synaptic potentials are sufficient; 3) spinal glial cells are important factors for muscle pain

and hyperalgesia; 4) many cases of unspecific LBP may be due to input from the thoraco-lumbar fascia rather than from input from muscles of the low back. The results were obtained from anesthetized rats by recording the impulse activity of unmyelinated muscle afferents and dorsal horn neurons. Additional data were obtained in behavioral experiments on rats. The work was supported by grants from the German Research Association and the Federal Ministry for Education and Research.

Jay Shah MD: New Frontiers in the Pathophysiology of Myofascial Pain: Enter the Matrix

Dr. Shah is the Director of the Medical Rehabilitation Training Program and Senior Staff Physiatrist within the Rehabilitation Medicine Department at the National Institutes of Health in Bethesda, MD. His areas of research interest and publication have included a novel application of ultrasound technology to visualize myofascial trigger points and taut bands, as well as the use of microdialysis techniques to study the biochemicals associated with pain and inflammation in trigger point sites.

During this presentation, Dr. Shah will facilitate an informative session on how to evaluate and identify common myofascial trigger points (MTrPs) and their referral patterns of pain; discuss the unique neurobiology of muscle pain; understand the roles of sensitization and neuroplasticity in generating, amplifying and perpetuating chronic musculoskeletal pain; demonstrate that active myofascial trigger points have elevated levels of biochemicals (e.g., inflammatory mediators, neuropeptides, catecholamines, cytokines, etc.) known to be associated with persistent pain states, sensitization and inflammation; and introduce novel applications of ultrasound techniques to visualize MTrPs, measure their stiffness properties and local blood flow.

Terry Loghmani PT, PhD(c): Instrument-Assisted Soft Tissue Mobilization: A Conservative Treatment Alternative to Enhance Connective Tissue Healing

Terry Loghmani is an Associate Clinical Professor at Indiana University Dept. of Physical Therapy and a doctoral candidate in Anatomy & Cell Biology at the Indiana University School of Medicine. She has published numerous articles and textbook chapters on the use of instrument-assisted soft tissue mobilization methods. Many of her publications are based upon original basic science research in which she studied the effects of cross fiber massage on the biomechanical and histological properties of the healing of medial collateral ligaments in a rat model.

Terry will discuss how musculoskeletal injuries involving the connective tissue are common clinical conditions that can lead to functional limitations, disability and disease. There is a need for conservative treatment alternatives that either accelerate or augment connective tissue healing. Manual therapy interventions such as soft tissue mobilization (STM) are often used by clinicians in the management of connective tissue disorders. Instrument-assisted soft tissue mobilization (IASTM) is a type of STM that uses rigid devices to help manipulate the soft tissue. Since connective tissue cells are mechano-sensitive to their environment, the mechanical stimulation provided by IASTM has the potential to directly influence connective tissue healing. Preliminary evidence suggesting IASTM enhances tendon and ligament healing is presented. The effects of IASTM on biomechanical, histological and vascular properties in connective tissue are discussed. Mechano-transduction is introduced as a mechanism for the therapeutic effects of IASTM. IASTM offers a cost-effective and readily available manual therapy that may be used to promote optimal therapeutic outcomes.

Tom Findley MD, PhD: Fascinating Findings from the Fascia Research Congress 2007 & 2009

Dr. Thomas Findley is the Executive Director of the International Fascia Research Congress which was held in 2007 at the Conference Center, Harvard Medical School, in 2009 at Faculty of Movement Sciences, Vrije Universiteit, Amsterdam, and is planned for Vancouver in 2012. He is an active clinician (Certified Advanced Rolfer™) as well as a researcher and is the recipient of the prestigious 2009 Northup Award from the American Osteopathic Association for his paper Three-Dimensional Mathematical Model for Deformation of Human Fasciae in Manual Therapy. He will present key findings from both fascia research congresses, which form a broad base for both scientific and clinical investigations. These findings span the effects of physical forces on fascial cellular structure to laboratory models of acupuncture and of repetitive strain and subsequent myofascial treatment and their effects on fibroblast cells. They also cover fascial anatomy and biomechanics and transmission of mechanical forces through the fascial network in lieu of conduction down the more traditional muscular pathways, as well as direct mechanical coupling of the muscle and local blood vessels through the extracellular matrix. Dr Findley will take you through highlights of both congresses, including his keynote address, and encourages you to explore full text articles in the program book and the keynote addresses on DVD from both congresses, available from www.fasciacongress.org.

Mike Schneider DC, PhD: Systematic reviews of the myofascial pain and fibromyalgia literature

Dr. Schneider is an Assistant Professor in the School of Health & Rehabilitation Sciences at the University of Pittsburgh. He served as the chairman of the soft tissue committee of the Council on Chiropractic Guidelines and Practice Parameters (CCGPP). He managed a team of reviewers who evaluated and rated all of the literature related to chiropractic management of myofascial pain and fibromyalgia through 2006. He has published the results of these systematic reviews in the Journal of Manipulative and Physiological Therapeutics (JMPT).

Dr. Schneider will give overviews of the salient results from his published systematic reviews of the literature, and discuss the evidence rating tables for both conditions and focus on what conservative therapies have the most evidence based support from the literature. He will also discuss the emerging concept of central sensitization and the idea of several subsets of fibromyalgia patients, with the need for matching them with different treatment approaches. Dr. Schneider will outline some of his thoughts regarding the research directions he believes are necessary for soft tissue therapies to achieve more recognition in the fields of physical medicine, chiropractic and physical therapy.

Workshop presentations (2 hours each):

Michael Leahy DC: Active Release Technique

Tom Hyde DC, DACBSP: Graston Technique and FAKTR-PM

Graston Technique is an instrument-assisted soft tissue method (IASTM) that uses stainless steel instruments to detect and treat musculoskeletal and fascial disorders. The technique consists of 7 different strokes applied at various angles and depths of penetration, depending on the type of soft tissue lesion being treated. Treatment is not only rendered over areas of local pain, but also at other related soft tissue locations and sites within the kinetic chain.

There are a number of relative and absolute contraindications to the use of IASTM which will be discussed; as well as the appropriate indications for their clinical use. Early animal studies have indicated that by using IASTM over an area of suspected adhesions within the soft tissue, that there is evidence to support breaking down those adhesions and influencing new fibroblastic activity. The amount of pressure exerted by the instruments also appears to be proportional to the increase of infiltration of plasma cells, phagocytes, and mast cells. There remains many unanswered questions about how IASTM actually works suggesting a need for further research. During this workshop, the clinical application and use of Graston instruments and IASTM will be demonstrated.

Aaron Mattes MS, LMT: Active Isolated Stretching Protocols for the Shoulder, Wrist and Hand

The Mattes Method of Active Isolated Stretching is a system of fascial release which provides effective dynamic facilitated stretch of major muscle groups, but equally important functional and physiological restoration of superficial and deep fascial planes. The Mattes Method consists of performing an active isolated stretch of no greater than 1.5 seconds. This allows the target muscle to optimally lengthen without triggering the protective stretch reflex and subsequent reciprocal muscle contraction. As the isolated muscle and fascia achieves a state of relaxation, maximal beneficial stretch can be accomplished without opposing tension or resulting trauma. Attendees will participate by seeing live demonstrations and hands-on techniques applied to the shoulder, wrist and hand regions.

Julie Ann Day PT: An Introduction to Fascial Manipulation

Julie Ann Day is a physiotherapist who has worked most of her career in the orthopaedic field, specializing in connective tissue massage. She is currently part of the staff of the Physiotherapy Department of the Ospedale dei Colli, Ulss 16 in Padova, Italy. Julie supervises a number of 3rd year Physiotherapy students from the University of Padova during their Orthopaedic clinical practice. Since 1999, she has been involved in Fascial Manipulation, as taught by Luigi Stecco, and from 2002 is a part of the authorised teaching group.

Julie will present a workshop on The Fascial Manipulation© technique, which is based on the concept of Myofascial Units united in Myofascial Sequences, and involves manual friction over specific points on the deep muscular fascia. Localised friction causes hyperaemia and it is hypothesised that this could modify the extracellular matrix, restoring gliding between endofascial fibres and intrafascial planes. Any impediment to gliding could cause anomalous tension on mechanoreceptors embedded within fascia, generating uncoordinated joint movements due to altered proprioceptive afferents. This underlying rationale and the resultant analytical process guide practitioners in selecting the combination of points to be treated. The types of musculoskeletal disorders commonly treated include low back pain, tendinitis, ligament sprains, peripheral nerve compressions, and cervicoccephalgia.

The objective of this workshop is to inform participants about this new biomechanical model and to stimulate reflections and discussion as to its implications, as well as providing an opportunity to observe an application of the Fascial Manipulation© technique.