Show me the money: Applying the evidence for electrophysical agents to clinical practice

Preconference course at 2014 CSM meeting in Las Vegas, Nevada, USA

Description:
This course will present current international evidence for selected applications of electrophysical agents including ultrasound, pulsed diathermy, neuromuscular and functional electrical stimulation, and laser as these are applied to facilitate pain control, muscle strengthening, neuromotor control, tissue healing, and ultimately improved function. Since much of the evidence for electrophysical agents is generated internationally, the course brings thirteen highly respected researchers and educators from all over the world, leaders in the International Society for Electrophysical Agents in Physical Therapy (ISEAPT) of the WCPT, who will emphasize the relevance of the evidence in their focus areas to guide the participants toward selecting and applying electrophysical agents in the most effective manner. Additionally, participant educators will return to their classrooms prepared to integrate these evidence-supported approaches into their electrophysiology curricula.

Objectives:
1. Describe guidelines to evaluate the evidence base pertaining to electrophysical agents.
2. Apply selected applications of electrophysical agents to facilitate pain control, muscle strengthening, neuromotor control, tissue healing, and ultimately improved function.
3. Analyze current international evidence for these applications.
4. Incorporate the evidence to develop optimally effective treatment protocols, integrating appropriate electrophysical agents into comprehensive physical therapy plans of care.
5. Clarify the importance of dose-response patterns in the application of electrophysical agents.
6. Compare electrophysical agents to pharmacological agents for the management of inflammatory pain.

Location:
The Venetian hotel and Casino, Marco Polo room

Time: 08.00 am to 5.45 pm, Monday February 3rd, 2014
Outline and Schedule:
8:00 a.m.: Introduction to the Course and the ISEAPT of the WCPT – (Meryl Gersh, U.S.)

8:15 a.m.: Identification of dose-response patterns – The key to evidence-based practice with electrophysical agents in Physical Therapy (Jan M Bjordal, Norway)

8:45 a.m.: Choosing the “best” ultrasound settings to get the job done! (Ethne Nussbaum, Canada)

9:15 a.m.: Pulsed shortwave diathermy for the management of pain in osteoarthritis of the knee (Thiago Fukada, Brazil)

9:45 a.m.: What makes TENS work? Making sense of the clinical literature (Kathleen Sluka, US)
10:15-10:45 a.m. BREAK WITH EXHIBITORS
10:45 a.m.: The Evidence Base Mismatch: Why we choose to do what we choose to do? (Tim Watson, United Kingdom)

11:15 a.m.: Stimulating denervated muscle: Should we or shouldn’t we? (David Selkowitz, United States)

11:45 a.m.: Neuromuscular Electrical Stimulation to generate muscle force/endurance in musculoskeletal conditions: Importance of frequency (Oscar Ronzio, Argentina)
12:15–1:15 P.M. LUNCH
1:15 p.m.: Functional Electrical Stimulation following Stroke: What does the current evidence say? (Yocheved Laufer, Israel)

1:45 p.m.: Electrical stimulation for chronic wound healing: Evidence and Dosage (Luther Kloth, United States)

2:15 p.m.: Mechanisms of laser therapy (1): A review of experimental laboratory studies with cell cultures, peripheral nerves and wound healing (David Baxter, New Zealand)

2:45 p.m.: Mechanisms of laser therapy (2): Comparison of the anti-inflammatory effects of laser therapy and pharmacological agents in experimental laboratory studies (Jan M Bjordal, Norway)
3:15 – 3:45 p.m.: BREAK WITH EXHIBITORS
3:45 p.m.: Effects of laser therapy on skeletal muscle fatigue development and post-exercise lactate removal and recovery (Ernesto Leal Jr., Brazil)

4:15 p.m.: The clinical evidence for laser therapy in neck, back and muscle pain (Liisa Laakso, Australia)

4:45 p.m.: Laser therapy as an alternative to pharmacological agents: a comparative clinical review of laser therapy and pharmacological agents in osteoarthritis and tendinopathies (Jon Joensen)

5:15 – 5:45 p.m.: Panel Discussion and Wrap-Up (Gersh and Speakers)
Speakers with degrees, institutions, city, state, country

Speakers:
Meryl Roth Gersh, PT, PhD, Eastern Washington University, Spokane, WA, USA
Jan M Bjordal, PT, PhD, University of Bergen, Bergen, Norway
Ethne Nussbaum, PT, PhD, M.Ed., University of Toronto, Ontario, Canada
Thiago Yukio Fukuda, PT, PhD, Irmandade da Santa Casa de São Paulo, São Paulo, Brazil
Kathleen A. Sluka, PT, PhD, University of Iowa, Iowa City, Iowa
Tim Watson, PhD, BSc (Hons), MCSP, University of Hertfordshire, Hertfordshire, UK
David M. Selkowitz, PT, PhD, OCS, DAAPM, Western University of Health Sciences, Pomona, CA
Oscar Ariel Ronzio, Lic PT, Doctoral Candidate in Health Sciences (D.H.Sc), Universidad Maimónides, Universidad Favaloro, Universidad, Barceló, Buenos Aires, Argentina
Yocheved Laufer, PT, D.Sc, University of Haifa, Haifa, Israel
Luther Kloth, PT, MS, FAPTA, CWS, FACCWS, Marquette University, Milwaukee, WI
George David Baxter, TD, BSc (Hons), DPhil, MBA, University of Otago, Dunedin, New Zealand
Jon Joensen, PT, PhD, Bergen University College, Bergen, Norway
Ernesto Leal Jr, PT, PhD, University Nove de Julho, São Paulo, Brazil
Liisa Laasko, BPhty, PhD, GCMgmt(QH), Griffith University, Gold Coast, Queensland, Australia

Speaker Biographical Information:
Meryl Roth Gersh, PT, PhD, is Professor and Chair of the Department of Physical Therapy at Eastern Washington University in Spokane, WA. Dr. Gersh has served as vice president of the Section on Clinical Electrophysiology of the American Physical Therapy Association (APTA), and in various Board roles for the Physical Therapy Association of Washington. She also serves on the Electrotherapy Issues Special Interest Group and the Curriculum Guidelines Task Force for the Section on Clinical Electrophysiology. She has spoken extensively and provides clinical consultation on the topics of electrophysiology, electrotherapy, and pain management, and is the author of numerous articles on these subjects, as well as the editor of the text, Electrotherapy in Rehabilitation, published by F.A. Davis Company. Dr. Gersh has received recognition for her professional and academic service, including the Award for Excellence from the Section on Clinical Electrophysiology and Wound Management, the Lucy Blair Service Award from the APTA and the Trustees' Medal from Eastern Washington University.

Professor Jan M. Bjordal is a Physical Therapist, PhD from University of Bergen (2003) and a clinical specialist in orthopaedic and rheumatological rehabilitation. He is currently President of International Society for ElectroPhysical Agents in Physiotherapy, a subgroup of World Confederation for Physial Therapy. He is also Scientific Secretary to World Association for Laser Therapy (WALT), and has been leading WALT’s development of dosage
recommendations and clinical guidelines. He holds a position as Professor at the Section for Physiotherapy Science at University of Bergen, Norway and has since 2009 been a visiting professor at Leeds Metropolitan University, UK. He is a member of the American Pain Society and an Overseas Fellow of the Royal Society of Medicine. Professor Bjordal has authored and co-authored around 60 scientific PubMed publications, which have been cited more than 3000 times.

Dr. Ethne Nussbaum is an Associate Professor in the Department of Physical Therapy and a Member of the Graduate Department of Rehab Sciences at University of Toronto. She is a faculty member within the Masters of Clinical Science degree in the wound healing field at the University of Western Ontario and an Adjunct Scientist at Toronto Rehab, University Health Network. She has designed and instructs the physical therapy electrophysical agents curriculum at the University of Toronto. Her research activities focus on the biophysical interactions and effects of electrophysical agents and her work has been published in international journals. She is a frequent speaker on the topic of electrophysical agents and on management of chronic wounds. She has practiced for many years as a physical therapist at a University of Toronto teaching hospital.

Dr. Thiago Yukio Fukuda, PhD, is a Physical Therapist from Santa Casa de São Paulo - Brazil and physical therapist for the Brazilian National Women’s Soccer Team. He has more than 40 papers published in Knee, Hip, and Sports Rehabilitation, as well as in Electro Physical Agents (laser, NMES, short waves, and combined therapy).

Dr. Sluka is a professor in the Department of Physical Therapy and Rehabilitation Science at the University of Iowa. She received a physical therapy degree from Georgia State University and practiced physical therapy pain management before obtaining a PhD in Anatomy from the University of Texas Medical Branch in Galveston. After a postdoctoral fellowship with Dr. William D. Willis, she joined the faculty at the University of Iowa. Dr. Sluka’s research focuses on the neurobiology of musculoskeletal pain as well as the mechanisms and effectiveness of non-pharmacological pain treatments commonly used by physical therapists. She has published over 150 peer-reviewed manuscripts, numerous book chapters, and a textbook on Pain Mechanisms and Management for the Physical Therapist. She has received numerous awards including the Marian Williams Award for Research in Physical Therapy, is a Catherine Worthingham Fellow of the American Physical Therapy Association, and received the Frederick W.L. Kerr Basic Science Research Award from the American Pain Society. She is actively involved in the International Association for the Study of Pain, the American Pain Society, and the American Physical Therapy Association serving on committees, task forces and society boards.

Dr. Tim Watson trained as a physiotherapist in London, UK, qualifying in 1979. After spending some years in the National Health Service (mainly musculoskeletal orthopedics and rheumatology), and with various sports clubs and National Teams, he took up a lecturing role. He undertook a degree in Biomedical Sciences followed by a PhD from the Biomedical Engineering Department at the University of Surrey in 1994. His PhD thesis was ‘The Bioelectric Correlates of Musculoskeletal Injury and Repair’. He researches in several fields associated primarily with electrotherapy and tissue repair and is currently Professor of Physiotherapy, School of Health & Social Work at the University of Hertfordshire, UK. He has
published many papers, is editor of a core text on electrotherapy and has contributed several chapters to other edited texts. He is a reviewer for more than 25 journals and grant authorities and has presented more than 800 professional lectures, short courses and conference papers.

Dr. David Selkowtiz is currently Professor, Dept. of Physical Therapy Education, Western Univ. of Health Sciences, Pomona, CA. He has been on university faculty for over 20 years, having taught electrotherapy, evaluation and management of musculoskeletal dysfunction, and research. His clinical experience in orthopedic physical therapy spans more than 30 years. Dr. Selkowitz has presented at numerous professional conferences, workshops, and continuing education courses, from local to international venues, and has published articles in peer-reviewed journals, on electrotherapy, and musculoskeletal function and dysfunction. He also authored a book chapter on electrotherapy. Dr. Selkowitz also serves on several state and international boards and committees, and has been honored with the Clarence Hultgren Service Award of the California Physical Therapy Association (CPTA), and the Best Research Platform Presentation Award at the CPTA annual conference.

Oscar Ronzio, Professor of Electrophysical Agents at Universidad Maimónides and Universidad Favaloro Professor of Research Methodology at Univeridad Barceló, also serves as Vice President of the International Society of Electrophysical Agents in Physical Therapy. He is the author of many studies on electrophysical agents. Dr. Ronzio services in a variety of international leadership roles as President of Grupo de Estudio en Agentes Físicos, Secretary of Centro Latinoamericano de Desarrollo en Fisioterapia y Kinesiología, amd Secretary of Asociación Argentina de Kinesiología.

Dr. Yocheved Laufer received a B.Sc. degree in Physical Therapy in 1971 from Columbia University, NY; an M.Sc degree in Physical and Health Education in 1981 from Texas A&M and Baylor School of Medicine; and a D.Sc in Neurophysiology in 1995 from the Medical School at the Technion, Israel. Between the years 1971 and 2000 Dr. Laufer practiced as a physical therapy clinician and manager both in Israel and the US focusing primarily on neurological and geriatric rehabilitation. In 1998 Dr. Laufer was invited by the University of Haifa to develop a new four year Bachelor degree program in physical therapy. The program was launched in 2000, and for 7 years, Dr. Laufer served as its chair. Between 2007 and 2012 she served the Editor-in-Chief of the Journal of the Israeli Physical Therapy Society. Since joining academia Dr. Laufer has shifted her focus to research and education. In the past thirteen years she has published over 50 papers in leading scientific journals and has presented her research in numerous international conferences.

Professor Luther Kloth is a Catherine Worthingham Fellow of the APTA and Emeritus Professor of Physical Therapy at Marquette University, Milwaukee, Wisconsin. His research and numerous publications have focused on studying the effects of biophysical technologies such as electrical stimulation, low frequency ultrasound and normothermia on wound healing and evaluating the effects of antiseptic agents on wound pathogens and human fibroblasts. He has been a member of APTA for 51 years. He is a Board Certified Wound Specialist and Fellow of the American College of Certified Wound Specialists. He is also a member of the Editorial Advisory Board of Advances in Skin and Wound Care and a founding member of the Association for the Advancement of Wound Care. He is co-editor and author of

Dr. David Baxter is Professor and Dean at the Centre for Physiotherapy Research, School of Physiotherapy, University of Otago, New Zealand. David is a physical therapist and an experienced researcher, having authored or co-authored over 170 peer-reviewed publications, books and book chapters, supervised over 50 research students to successful completion, and been a keynote speaker at numerous international conferences. David’s current research interests include physical activity in clinical populations, and electrophysical agents, including photobiomodulation of tissue repair. David has been the recipient of several prestigious research awards.

Dr. Jon Joensen, is from the Faroe islands and graduated with a bachelors degree in physical therapy from Aarhus, Denmark. He graduated with a masters degree in Physiotherapy Science in 2004 at University of Bergen, Norway in 2004 and a PhD in 2013. He has worked as a specialist in musculoskeletal rehabilitation at Haukeland University Hospital, Norway and as an associate professor at Bergen University College, Norway. He was member of the scientific committee at the 8th congress of the World Association for Laser Therapy. He has authored 9 scientific publications in PubMed, mostly about the skin penetration and effects of laser and narrow-band light therapies.

Dr. Ernesto Leal Junior graduated with a Masters degree in Physical Therapy from University of Vale do Paraiba, Brazil in 2005 and a PhD from University of Bergen, Norway in 2009. He has authored 27 scientific publications, and is an authoritative researcher into the effects of laser and narrow-band light therapies on skeletal muscles.

Professor Laakso is Head of Physiotherapy and Deputy Head of the School of Rehabilitation Sciences at Griffith University, Gold Coast, Australia. Dr Laakso’s research interests include using EPAs for symptom management in people with cancer, and acute and chronic pain in particular low level laser therapy (LLLT) for pain management, tissue healing, and inflammation in non-malignant and malignant models; and TENS for cancer-related bone pain. A/Prof Laakso is on the Board of the International Society for Electrophysical Agents in Physical Therapy (WCPT); Vice-President of the Australian Medical Laser Association (AMLA); and President of the World Association for Laser Therapy (WALT).

Keywords:
Electrotherapy, physical modalities, evidence-based practice

Teaching and Evaluation Methods:
Presentation/discussion with 25 objective post-test questions provided.

Recommended participant level: Multi
References:


Effect of high voltage monophasic stimulation on pressure ulcer healing: results from a randomized controlled trial. Wounds 2011;23 (1): 15.


