



SECTION ON Clinical Electrophysiology

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Newsletter of the
SCE of the
American Physical
Therapy Association

President's Message Summer 2003

The next generation...

As I enter my last year in office, I can reflect with satisfaction on the many accomplishments we have made on behalf of not only our members but also for all physical therapists. Through the hard work of active members we have been able to gain recognition of the value of physical therapists' roles in wound management. Our long history of excellent service in providing electrophysiological evaluation has been acknowledged by CMS in its decision to recognize physical therapists as providers of this service on par with physicians. The contributions to the APTA's "Hooked on Evidence" initiative and Guide to Physical Therapy Practice have helped to insure that practicing clinicians have ready access to the information they need to safely and effectively employ physical agents/electrotherapy to the benefit of those we serve. I am confident that the Section's active role in preserving and protecting our roles in wound management, ENMG evaluation, and use of physical agents will continue. The question that remains however is "Who will carry the Section's agenda forward?" Many of those who were the founders of this Section and who have ably lead the Section for over twenty-five years are nearing the end of long and distinguished careers. We are indebted to each and every one of these dedicated professionals who have so unselfishly given their time and talent. What concerns me however is that I am uncertain about from when and where the next generation of Section leaders and active participants will come. Given this concern, how do we proceed? One suggestion is to encourage each of our present and past active members to recruit one younger colleague and accompany them to the Combined Sections meeting in Nashville next February. Call that former student, that therapist who calls on a regular basis to solicit your advice or that faculty member at another program who has shown an interest in one or more of the practice areas we oversee. Mentor them at CSM 2004 and introduce them to your peers and our Section's active members with long service. I sincerely believe that if we can do this we can ignite some interest in our Section's initiatives and begin to develop the leaders of tomorrow. I would encourage each of you to begin this recruitment process now. Make the call to

a prospective Section recruit a priority on your summer "to do" list. Follow-up your initial contact in the early fall and encourage your recruit to take advantage of the early bird registration for CSM 2004. If you're one of our dedicated Section members who have consistently contributed, let the recruitment of the next generation become one of your capstone accomplishments of your career.

Section elections in 2003

The results of our elections for Section officers in 2003 were announced to our membership at PT 2004 in Washington, DC. Stephen Folger our current Vice President was re-elected to a second term. Michael LaPlante, SCE Secretary was also re-elected for another two years in office. Newly elected officers to the Section include Jeff Slear who will take on the responsibility of Section Treasurer from outgoing Treasurer Debra Donovan. In addition, Lisa Goodfriend was elected to serve on the Sections Nominating Committee. Congratulations and thanks to everyone and we look forward to working with each of you in order to advance the Section mission.

Section election in 2004

The following offices on the Section's Executive Committee will be up for election in 2004: President, Publications Chair, and Program Chair. One position will also be open on the Nominating Committee. For anyone interested in becoming a candidate for one of these offices, I would encourage you to contact any member of the Nominating Committee as soon as possible. Names and contact information for nominating Committee members are available in this issue of the Section Newsletter or on the Section web site (www.aptasce.com). Please do not delay in informing the Nominating Committee of you interest in seeking one of these positions.

Continuing Education Program in Electrotherapy and Electrophysiologic Evaluation

Unfortunately, the Section sponsored continuing education program in electrotherapy and electrophysiological evaluation scheduled for early August

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Presidents Message*Continued from page 1*

in Milwaukee, Wisconsin has been cancelled due to insufficient registration. For those of you who had planned to attend we apologize for any inconvenience you may have experienced. The Section is currently investigating the possibility of sponsoring a two-day pre-conference course just before CSM 2004 in Nashville in February. If the decision is reached to offer this course early next year, announcements will appear in the SCE newsletter received electronically by SCE members, on the SCE web site and in the CSM pre-conference course listing. You may also wish to contact our Vice President, Stephen Folger (Folger@elon.edu) in the late fall to determine if this course has been rescheduled.

Section Name Change

The issue of changing the name of the Section was discussed briefly at PT 2003 at the Sections Business meeting. The plan had been to present the suggestions we had received to date and narrow down the list so that a vote on a new name could be taken this year. Because the attendance was low at our meeting, we have decided to reopen discussion on the Section name change at our next business meeting in Nashville. For this reason, we strongly encourage any member who has an interest in seeing that the name of the Section is changed plan to attend that meeting to express their views. Following our meeting at CSM 2004, a slate of proposed Section names will then be presented for vote to the membership on the same ballots used to elect new Section officers.

CSM Programming

A long-standing problem at the Combined Sections Meetings has been the scheduling of Section Business meetings either very early in the morning (prior to 8 AM) or very late in the day (after 5:30 PM). We have felt for some time that these meeting times have limited member participation and hence have interfered with moving Section initiatives forward. The good news is that in the future, Section business meetings may be held in "prime time" (also known as daylight hours) that here to for have been reserved for conference educational programming. Since the main Section business meeting will be scheduled in mid morning or early afternoon, other Section educational programming will not be held simultaneously. Our hope is that this new format will increase member attendance and participation at the business meeting and enhance our ability to achieve Section goals.

As you may have read in the past, the Executive Committee of the Section decided last year to

markedly increase The initiative to provide 4-6 hours of CSM educational programming for each of our Section's special interest areas on each full day of the conference has been abandoned. One reason behind this decision was the cost of the audiovisual support (e.g.: LCD projection equipment for PowerPoint presentations, wireless microphones, etc.). As a result of the AV cost, our expenses exceeded our revenue from CSM by several thousand dollars. Another factor that increased our CSM expenses was related to our lack of control over room availability for extended periods resulting in the requirement to use several rooms simultaneously each with their own AV setup. Our plan to preserve as much educational programming as possible is to solicit co sponsorship for CSM programming with other sections thus reducing our share of AV expenses. We also will try to schedule as much programming in one room as possible on any given day of CSM. We will do everything we can to gradually restore educational programming to our target levels as resources and logistics allow.

Several issues of concern that arose regarding CSM programming were discussed at PT 2003. One issue that was raised was based on the observation that some presentations on interventions failed to adequately take into account existing evidence regarding the efficacy of the intervention. We strongly encourage all individuals speaking in Section sponsored presentations to accurately address all published evidence relevant to the topic to which they are speaking. This requires that anyone interested in speaking at Section sponsored sessions have a thorough command of the literature prior to submitting his or her presentation topic for consideration. Another issue that arose at CSM in Tampa was concern over presentations that appeared to be little more than commercial advertisements for equipment by individuals with a proprietary interest in the product. The Section does not endorse such behavior in presentations and anyone who knowingly uses Section educational venues for product endorsement risks losing the opportunity to speak at any future Section sponsored programming.

In closing, I continue to encourage each of you to stay in touch and keep the Section informed of issues you face in everyday practice. We can only be your advocates if we are informed so shoot us and e-mail or give us a call. In my final year I remain committed to putting all of my energy into advancing the activities of the Section. With your support we will all benefit from the fruits of our labors.

Andrew J. Robinson, PT, PhD

President

Section on Clinical Electrophysiology



Comparison of Orthodromic Ring, Orthodromic Strip, and Orthodromic Roth Techniques for Obtaining Sensory Neural Conduction Latencies and Amplitudes for the Median and Ulnar Nerves in Healthy Subjects

Mary J. Carlson, DPT

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John S. Halle, PhD, MPT

David G. Greathouse, PhD, PT

At the time this study was performed, Dr. Carlson, Dr. Casbon, Dr. Connor, Dr. Hopkins, and Dr. Williams were students at the Belmont University Doctorate of Physical Therapy Program. This research was performed in partial fulfillment of their requirements for the Doctorate of Physical Therapy degrees. Dr. Halle and Dr. Greathouse are faculty members, Belmont University School of Physical Therapy. Dr. Halle and Dr. Greathouse are clinical electrophysiologists (EMG/NCS), Neurology Clinic, Blanchfield Army Community Hospital, Fort Campbell, Kentucky.

This study was approved by the Belmont University Institutional Review Board.

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Abstract

PURPOSE: The disposable strip electrode is a type of electrode used for measuring the neural conduction of peripheral nerves. The use of the disposable strip electrodes is gaining popularity in the clinical setting, but to our knowledge, there have been no randomized studies to validate the disposable strip electrode. The purpose of our study was to compare sensory nerve action potential (SNAP) latency and amplitude of the median and ulnar nerves in healthy adults using the orthodromic ring, orthodromic Roth, and disposable strip electrode techniques. The study design is a repeated measures design investigating the three types of nerve conduction electrodes.

METHODS: Both the left and right ulnar and median SNAP latency and peak amplitude were measured on 20 healthy subjects using the three different techniques. Additionally, the time to perform each technique was analyzed for efficiency. The three techniques were analyzed using a repeated measures analysis of variance (ANOVA) ($p \leq 0.05$). Appropriate post hoc tests to analyze mean differences among stimulation techniques were performed. Finally, the

perceived comfort associated with each technique was also examined and analyzed using a Friedman's test.

RESULTS: In the median nerve, the three techniques were not significantly different when measuring latency, yet in the ulnar nerve significant differences were found. The distal sensory latencies were faster (2.7 msec) for the orthodromic ring and strip electrodes than the Roth technique (2.8 msec). Although statistically significant, this 0.1 msec difference is not clinically significant. SNAP amplitudes were greater using the Roth technique as compared to the ring and strip technique. Orthodromic Roth technique is significantly faster to perform than the ring or strip technique and there is no significant difference in the perceived level of overall comfort.

CONCLUSIONS: The strip electrodes are a valid technique for obtaining orthodromic SNAP latencies and amplitudes and are a valid option to be used in clinical electrophysiological testing.

The Influence of Gender, Foot Dominance, and Lower Extremity Side on Neural Conduction in the Deep

Fibular and Sural Nerves

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Julie H. Smothers, DPT

Ashley M. Welch, DPT

John S. Halle, PhD, MPT

Nancy S. Darr, DPTSc, NCS

David G. Greathouse, PhD, PT

At the time this study was performed, Dr. Kroeger, Dr. Mitchell, Dr. Smothers and Dr. Welch were students in the Belmont University Doctorate of Physical Therapy Program. This research was performed in partial fulfillment of their requirements for

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Section on Clinical Electrophysiology

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Abstracts

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the Doctorate of Physical Therapy degrees. Dr. Darr, Dr. Halle and Dr. Greathouse are faculty members, Belmont University School of Physical Therapy. Dr. Halle and Dr. Greathouse are clinical electrophysiologists (EMG/NCS), Neurology Clinic, Blanchfield Army Community Hospital, Fort Campbell, KY.

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Abstract

BACKGROUND AND PURPOSE: The purpose of this research study was determine the effects of gender, foot dominance, and lower extremity side on neural conduction of the sural and deep fibular nerves in forty healthy adults between the ages of 18 and 40.

SUBJECTS: The subjects were recruited and placed into four groups: 1) ten left-footed women, 2) ten left-footed men, 3) ten right-footed women, and 4) ten right-footed men.

METHODS: The distal motor latency (msec), amplitude (mV) of the compound motor nerve ac-

tion potential (CMAP), and motor nerve conduction velocity (m/sec) for the deep fibular nerve, and the distal sensory latency (msec) and amplitude (μ V) of sensory nerve action potential (SNAP) for the sural nerve were measured using a Cadwell Sierra LT Electromyograph and Stimulator. Room temperature and skin temperature of the lower extremities was maintained above 22°C and 28°C, respectively. The independent variables analyzed in this study were gender, foot dominance, and lower extremity side. A series of three-way mixed factor analysis of variance procedures were used to examine the data. All statistical analyses were performed at the 0.05 level of significance.

RESULTS: The results demonstrated no significant difference caused by gender, foot dominance, or extremity of the patient examined on the neural conduction latencies, amplitudes, or velocities for the sural and deep fibular nerves.

CONCLUSION AND DISCUSSION: The results demonstrate that neither foot dominance, gender, or lower extremity side has a significant effect on neural conduction of the sural and deep fibular nerves in the lower extremities of humans. The results of this study support the current use of neural conduction normative charts with nerve conduction studies. Therefore, normative charts may be used clinically without regard to gender or foot dominance.

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Evidence-Based Affirmation for the Use of EMG in the Early Diagnosis of Amyotrophic Lateral Sclerosis

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Christy Klippel BA, SPT

Luther C. Kloth MS, PT, CWS, FAPTA

Controversy exists as to whether needle electromyography (EMG) is an effective tool in the diagnosis of amyotrophic lateral sclerosis (ALS). Some question the use of this diagnostic technique therefore, the purpose of this review is to look at current research for hard evidence regarding the efficacy of EMG testing for this purpose. The following summarizes four research articles and explicates their support for utilization of EMG testing in diagnosis of ALS.

Using EMG, Ross et al¹ performed a study to determine alternative diagnostic criteria to the criteria currently required by the World Federation of Neurology to facilitate earlier diagnosis of ALS. The new criteria require lower motor neuron (LMN) involvement in at least two limb muscles in each of two extremities and upper motor neuron (UMN) involvement in at least one region (bulbar, cervical, or lumbosacral). From their research, Ross et al require EMG findings of fibrillation potentials for the LMN signs and extensor plantar responses, spasticity, or pathologic hyperreflexia for UMN involvement. Seven hundred thirty patients were enrolled in the study, and for reasons such as failing to fulfill the diagnostic criteria or displaying signs of alternative neurological disorders, only 483 remained for the study drug treatment phase. The mean time from onset of symptoms to diagnosis was 9.7 months, which compares favorably with the mean time of 12 months that is commonly found in the literature. This suggests that the authors' proposed criteria served to achieve diagnosis at a relatively early time. As demonstrated by this research, the use of EMG allows for continuous fine-tuning of the entire diagnostic process for ALS. Each patient provides an opportunity to gain insight into the underlying mechanisms of the ALS progression, making EMG a necessity in the endeavor of perfecting the diagnosis of ALS.

The second study used concentric needle EMG to evaluate the integrity of various muscle groups in ALS patients, and the results confirmed the value of this diagnostic technique. Cappellari et al² performed a prospective, non-randomized study to determine regional motor neuron (MN) vulnerability. They recruited 36 participants all of whom had sporadic ALS, 9 patients showing bulbar-onset symptoms and the remaining 27 patients showing limb-onset symptoms. Using concentric needle EMG, muscles of the cranial, paraspinal, and limb regions were examined to determine levels of neurological degeneration. In the bulbar group, active degeneration of the cervical paraspinal muscles was found in

77.8% of participants (versus 25.9% recorded in the limb-onset group), and active degeneration of the tongue was also 77.8% in the bulbar group (versus 18.5% recorded in the limb-onset group). Fibrillation was more commonly found in the upper limb than in the cervical paraspinals (100% versus 70%), and fibrillation was also more evident in the lower limb than in the lumbar paraspinals (97.2% versus 69.6%), confirming the length-dependent vulnerability of MN axons. These neurological findings reveal that needle EMG is highly capable of detecting the nerve degeneration that would be medically expected in ALS progression. Therefore, this technique would indeed prove useful in finding these indicative neurological signs in both diagnosed *and* undiagnosed ALS populations.

In the next study, Finsterer et al³ analyzed the results of EMG evaluation and were able to predict neuron involvement before clinical ALS signs appeared. These researchers performed a prospective, non-randomized, controlled study to determine if quantitative motor unit action potential (MUAP) analysis of muscles innervated by cranial nerves V, VII, and XI is useful in assessment of bulbar involvement in ALS. MUAP readings were taken from three groups: 9 ALS patients without bulbar signs (Group ALSA), 5 ALS patients with bulbar signs (Group ALSB), and 20 healthy subjects. Using the *t*-test, bulbar involvement was assumed in patients if mean MUAP duration, amplitude, or both was more than 2 standard deviations above the mean of the control group. Quantitative MUAP analysis was able to confirm bulbar signs in all 5 of the patients in Group ALSB and was able to diagnose 6 of the 9 patients in Group ALSA with bulbar signs. Finsterer et al³ concluded that quantitative MUAP analysis was reliable in recognizing bulbar signs prior to clinical onset in two-thirds of patients studied. This detection of neurological involvement before clinical presentation is critical because it allows steps, including early physical therapy intervention, to be taken in order to slow the debilitating effects of the disease.

Finally, another set of researchers found that diaphragm EMG results were strongly correlated to other measures of lung function, again indicating the efficacy of EMG. Stewart et al⁴ performed a retrospective, non-randomized study by reviewing the records of 52 previously seen patients whose respiratory muscles had been evaluated using EMG during their initial visit to the clinic. The researchers divided this pool into Group 1, those who showed an abnormal EMG of the diaphragm as indicated by the presence of spontaneous muscular activity indica-

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Evidence-Based Affirmation

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tive of ALS, and Group 2, those who did not show spontaneous activity (n=23, 29 respectively). The mean values of these two groups were then compared using the *t*-test to reveal that Group 1 showed more respiratory dysfunction overall. Group 1 performed more poorly on testing of FVC ($67\pm 21\%$ predicted versus $84\pm 23\%$ for Group 2, $p=0.02$) and $FEV_{1.0}$ ($61\pm 17\%$ versus $77\pm 27\%$ for Group 2, $p=0.04$). Arterial blood gas measurements for Group 1 were hypoxic ($PaO_2=78\pm 9$ versus 85 ± 7 for Group 2) and hypercapnic ($PaCO_2=51\pm 14$ versus 40 ± 3 for Group 2, $p=0.03$). Stewart et al⁴ concluded that needle EMG is indeed a reliable and necessary method for monitoring respiratory musculature in patients with ALS because needle EMG can detect signs of respiratory dysfunction long before these deficits present clinically.

Timely detection of signs of ALS allows early medical, therapeutic, and pharmacological intervention, which are key in maintaining quality of life as long as possible for these patients. For example, Stewart et al⁴ report that respiratory failure is the predominant cause of death in patients with ALS. While some patients do present with acute respiratory failure, the majority of patients slip by without their subtle respiratory signs and symptoms being detected due to the urgency of their other involvements. In cases where respiratory signs are found earlier, patients are able to participate in non-invasive positive pressure ventilation (NIPPV), an intervention that may lengthen the survival of some patients. Clearly, this research affirms the use of EMG in the diagnosis of ALS on the grounds that needle EMG has repeatedly identified signs prior to clinical presentation. Lengthened patient survival and increased quality of life is certainly a priority for health care as a whole. EMG testing can be utilized in the diagnosis of ALS toward the attainment of that goal.

1 Ross MA, Miller RG, Berchert L, et al. Toward earlier diagnosis of amyotrophic lateral sclerosis. *Am Acad Neuro*. 1998;50(3):768-772.

2 Cappellari A, Brioschi A, Barbieri S, Braga M, Scarlato G, Silani V. A tentative interpretation of electromyographic regional differences in bulbar- and limb-onset ALS. *Am Acad Neuro*. 1999;52(3):642-647.

3 Finsterer J, Erdorf M, Mamoli B, Fuglsang-Frederiksen A. Needle electromyography of bulbar muscles in patients with amyotrophic lateral sclerosis. *Am Acad Neuro*. 1998;51(5):1417-1422.

4 Stewart H, Eisen A, Road J, Mezei M, Weber M. Electromyography of respiratory muscles in amyotrophic lateral sclerosis. *J Neuro Sci*. 2001;191(1-2):67-73

Kendra Johnson and Christy Klippel are students in the MPT program at Marquette University, Milwaukee, WI. They submitted this paper as partial fulfillment of requirements for an Electrotherapy / Electrophysiological Testing course. Professor Luther Kloth was course coordinator and instructor and served as student advisor and mentor.



WMSIG News!

Submitted: Pamela G. Unger, President

The elections results are in:

President: *Pamela (Pam) G. Unger*

Vice President: *Anne Myers*

Secretary/Treasurer: *Karen Wientjes*

As your new president and on behalf of the new officers, please allow me to thank our previous officers Cordell Atkins (President) and Debra Donovan-Metzger (Secretary/Treasurer) for their service and efforts on behalf of the WMSIG. We all truly appreciate their time, effort and ideas they brought to the Wound Management SIG.

Your new officers are organizing and expect to contact all interested SIG members soon. You can assist us by forwarding your name and email address to: pamcawc@aol.com.

Our first priority is to coordinate and implement the multi-section WMSIG. The present interested sections are Home Health, Geriatrics and Acute Care. If anyone is aware of any other interested sections, please contact me immediately.

Secondly, we are actively involved in a revision of the *Active Wound Management* CPT codes. The basic idea is to have the definitions be more user friendly and reflective of the service provided. There is also a proposal for two new codes related to the application of negative pressure therapy to the CPT panel. As further information evolves I will keep you all informed.

Collectively the new officers look forward moving the SIG forward. Please share your ideas and interests with us.



American Physical Therapy Association

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Preliminary Schedule Combined Sections Meeting 2004

| Day/Time | Tuesday (2/3) | Wednesday (2/4) | Thursday (2/5) | Friday (2/6) | Friday (2/6) | Saturday (2/7) | |
|----------|--|---|---|--|---|--|--|
| 7:30 am | Registration | Registration | | WMSIG: Round Table Discussion | | | |
| 8:00 am | ELECTRO: Symposium on Electrotherapy/ Electrophysiology for PT Educators & Clinicians | ELECTRO: Symposium on Electrotherapy/ Electrophysiology for PT Educators & Clinicians WMSIG: Pressure Ulcer Management: Best Practices (Potential Co- Sponsors: Home Health, Geriatrics, Acute Care, Veterans Affairs) | Multi-Section Programming Reflections on the Difficult Decisions that Keep Us Awake at Night | | | ELECTRO: Management: What is the Latest Research? | |
| 9:00 am | | | | WMSIG: Non- operative Management of Scar Tissues: From Surgical Incisions to Skin Grafts | FORUM: Issues Electrotherapy and Physical Agents | | |
| 11:00 am | | | | FORUM: Issues in Electrophysiologic | Unopposed Exhibit Hall BREAK | Unopposed Exhibit Hall BREAK 12:30 Polly Cerosli Lecture | Unopposed Exhibit Hall BREAK 12:30 PT-PAC Luncheon |
| 1:00 pm | | | | ENMG: The Roles of Imaging procedures (MRI/ CT scans) and Electromyographic and Nerve Con- duction Studies in the Evaluation of Spinal Root Injuries 2:30 Linda Crane Lecture | WMSIG: Therapeutic Modalities and Interventions for Wound Management (<i>Electro</i>) Co-Sponsor: Laser...A 20 year Perspective WMSIG: Local Medical Review Policies for Wound Care: The Impact on Care Documentation & Reimbursement | ENMG: Case Study Presentations | ELECTRO: Pain Management What is the Latest Research? |
| 2:00 pm | | | | | | ELECTRO: Clinical Electrical Stimulation for Pain and Muscle Strengthening with my Machines... How do I do That? | PLATFORM PRESENTATIONS 3:00 Eugene Michels Forum |
| 2:30 pm | | | | | | | |
| 3:00 pm | | | | | | | |
| 4:30 pm | | | Exhibits Open | WMSIG: Case Study Presentation | ELECTRO: Case Study Presentations | CE: Reception & Business | |
| 5:30 pm | Program Chairs Meeting | | | | | | |
| 6:00 pm | Component Pres. Reception | | | | FORUM: Electrotherapy Physical Agents | | |
| 7:00 pm | | Opening Ceremony ABPTS | | | | | |
| 8:30 pm | | Opening Reception | | | | | |

I have pursued the following opportunities for co-sponsorship:

WMSIG: Friday programming – Potential Co- Sponsors: Acute Care, Home Health, Geriatrics

ELECTRO: Saturday programming – Potential Co-Sponsors: Veteran's Affairs, Orthopedics (Pain Mgt SIG)

ENMG: Thursday programming – Potential Co-Sponsor: Ortho – I need a speaker for this topic Hand Section theme for CSM is UE Fractures, they are looking to include the issue of peripheral nerve injuries

SUNDAY: 7:00 – 8:30 am Program Chairs Meeting

Hot Topics

- Wound Care:** Pressure Ulcer Management
Therapeutic Modalities and Interventions for Wound Management
- Pain Management:** What is the Latest Research?
- Symposium on Electrotherapy/Electrophysiology for Physical Therapy Educators and Clinicians**



The Specialty Sections
of the
American Physical Therapy Association
Hereby Offer This

Call For Participants
Multisection Platform and Poster Presentations
APTA Combined Sections Meeting
February 4–8, 2004

NASHVILLE, TENNESSEE

Persons wishing to make poster or platform presentations of RESEARCH, SPECIAL INTEREST, CASE STUDIES, OR THEORY are invited to submit abstracts for consideration.

*Method of Submission of Abstracts to be Announced on APTA Web Site.
Instructions and Forms to be Available on APTA Web Site.*

Date of Availability on Web Site is Thursday, May 15, 2003
Deadline for Receipt of Abstracts is Tuesday, July 15, 2003.

Improvements are being made to the submission/review process.
Explicit directions and forms will be available on the APTA Web site by May 15, 2003.
Preparations for submission can be made prior to this date by following the instructions **below**.

Content:

- **RESEARCH** reports must include, in order: 1) purpose or hypothesis of the study, 2) number and kind of subjects, 3) materials and methods, 4) type(s) of data analysis used, 5) summary data, 6) numerical results of statistical test(s) where appropriate, 7) conclusion, 8) clinical relevance. This category also would include single-subject research designs.
- **SPECIAL INTEREST** reports must present a unique program, idea, or device and must include: 1) purpose of the presentation, 2) description, 3) summary of experience or use, and 4) the importance to Section members.
- **CASE STUDIES** must 1) present the treatment of a patient or a series of patients, 2) provide unique insight into the treatment or natural history of conditions seen by PTs, and 3) include accurate descriptions of the patients, treatments, and outcomes.
- **THEORY** presentations must 1) state the phenomenon that the theory proposes to explain or predict, 2) explicitly state the theoretical proposition or model, 3) give the evidence on which the theory is based, 4) suggest ways that the theory could be tested, and 5) describe the importance and utility of the theory to members of the Section to which the abstract is submitted.

Limitations:

- Each contact person may serve as the contact person for as many abstracts as desired.
- Each prospective abstract presenter may submit **no more than two** abstracts total.
- The same abstract may not be submitted to more than one Section.
- The primary (first) author of the abstract **must be a current member in good standing of the Section to which the abstract is submitted OR must be sponsored by a current member in good standing of the Section to which the abstract is submitted**. The contact person and address listed is usually the primary author, but this need not always be the case. This is especially true when the primary author is a student who will have graduated or moved during the time between submission of the abstract and CSM.
- Each abstract must indicate if the material has been/will be submitted or presented at any other national or international meeting or appear in publication prior to the 2004 Combined Sections Meeting. Some Sections will consider only original material for presentation or may restrict presentations to those that have not yet been available to Section members.
- Some Sections may have other limitations on submitted material. See listing of the individual *Section Contacts* for details.
- Poster and Platform presenters must be paid registrants for CSM 2004 for at least the day of

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Call For Participants

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presentation. Poster presenters must be available for presentation of the poster at the assigned time and be available or arrange for set-up (Wednesday, 3 pm – 6 pm and Thursday, 7 am – 12 pm) and tear-down (Saturday, 2 pm – 4 pm). **Alternative times for set-up, presentation, and tear-down are not available.**

A Supplement to PT—Magazine of Physical Therapy

Evaluation and Selection:

All abstracts are peer-reviewed using a masked review by selected members of the Section to which the abstract is submitted. Selections are based on compliance with the content requirements, logical arrangement, intelligibility, and degree to which the information would be of benefit to the members of the Section. All selections are final.

There will be an option for submitters to indicate preference for type of abstract presentation, poster or platform. There will also be an option for submitters to permit switching the type of abstract presentation (poster to platform or platform to poster). Permitting a switch by a Section's Review Committee does not guarantee acceptance of an abstract for either poster or platform presentation. Decisions concerning a switch in the type of abstract presentation are made by the Section to which the abstract is submitted, subject to abstract submitter's approval. All decisions are final.

Form/Format:

All abstracts must be submitted on an approved *Abstract Box* to be available on the APTA Web site, to be available May 15, 2003.

The *Abstract Box* shall be an actual outlined box 3.5 inches wide by 8.7 inches tall. The left line of the box shall be at a margin of 0.8 inches, and the top line of the box shall be at 1.0 inches.

No abstract text may **touch on, or exceed**, the lines of the *Abstract Box*.

Print must be clear, laser or ink-jet, computer printer-generated print. The following limitations are necessary for the formatting of abstracts for publication. Formatting of abstracts **must** conform to the following requirements.

Font shall be *Times New Roman*.

Font size shall be 10.

Print shall be **single-spaced**, with an extra line separating only the identifying information of title, author(s), and affiliation, at the top of the *Abstract Box* from the text of the abstract.

Title shall be left justified, in *italics*. The only capitalization in the title shall be the first word, other formal names/titles, or identifying acronyms.

Author(s) name(s) shall be left justified, normal font. The order shall be last name, first initial, middle initial. The only capitalization for author(s) shall be the first letter of the last name(s), and the initials. Commas shall be placed only after the initials of each

author. Commas shall not be placed between the last name and initials of each author. Prefix/suffix identifiers (Dr, Mr, Ms, Mrs, PT, PhD, etc.) shall not be included with authors' names in the abstract text.

Institutional affiliation(s) shall be left justified, normal font. Institutional affiliation(s) shall include name of the institution of author(s), and city and state of the institution(s) listed. Superscript numbers may be used to identify authors with different institutional affiliations or locations (city, state). If all authors are from the same institution, superscript numbers shall not be used.

Do not add headings, such as *Title, Author, Address*, etc, for the identifying information printed at the top of the *Abstract Box*.

Section headings, such as **Purpose, Methods, Data**, etc, shall appear in **bold italic** print. Section headings may be within a line of text, or they may start a new line.

The abstract must use standard abbreviations when abbreviations are used.

For the masked (de-identified) version of the abstract that is used for review, the names, institutional affiliations, and location (city, state), and any identifiers within the abstract text should be deleted by leaving **empty space** where these words would normally appear (**do not allow remaining text to shift to fill the space(s) of deleted words**).

Notification:

Notification for abstract submissions will be made via e-mail no later than July 21, 2003. If notification of abstract submission is not received by July 23, 2003, please contact the appropriate person listed in the instructions posted on the APTA Web site.

Notification of acceptance/non-acceptance for presentation of **poster** abstracts will be made by October 3, 2003. If notification of **poster** acceptance/non-acceptance is not received by October 6, 2003, please contact the appropriate person listed in the instructions posted on the APTA Web site.

Notification of acceptance/non-acceptance for presentation of **platform** abstracts will be made by October 13, 2003. If notification of **platform** acceptance/non-acceptance is not received by October 15, 2003, please contact the appropriate person listed in the instructions posted on the APTA Web site.

Notifications will be sent via e-mail to the e-mail address listed for the contact person when the abstract is submitted. If the address of the contact person changes, it is that person's responsibility to notify the appropriate person listed in the instructions posted on the APTA Web site. **It is strongly suggested that if a student is the primary author, the contact information list a faculty member and the faculty member's address.** The greatest problems concerning notifications arise when the contact person has not supplied information concerning a change of address and e-mail address.

Section, and confirmation of presentation by the

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Call For Participants

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abstract submitter, poster listings are compiled for the on-site program. This compilation is completed by November 1, 2003. Following this compilation, no changes in **poster** presentations are permitted.

All submissions must be received by the end of the business day on Tuesday, July 15, 2003. The end of the business day is defined as 5:00 PM, Eastern Daylight Time. Submissions delayed or sent to individual Section offices, and received after the deadline, will not be accepted.

Questions:

General questions concerning instructions or process can be addressed to:

Scott D Minor, PT, PhD, Program Chair, SOR
314/286-1432 minors@msnotes.wustl.edu

Individual questions relating to a specific Section's limitations or priorities for content, but not questions concerning acceptance/non-acceptance or abstract process, can be directed to the *Section Contacts* listed below.

| SECTION | CONTACT | LIMITATIONS |
|----------------------------------|---|--|
| Acute Care | MOLLY CRIST 315/792-3089 / mcrist@utica.edu | No limitations. |
| Aquatics | BOB BABB 215/855-9871 / therababb@comcast.net | No limitations. |
| Cardiovascular and Pulmonary | JANE EASON 504/568-4288 / jeason@lsuhsc.edu | No limitations. |
| Clinical Electrophysiology | JOHN HALLE 615/460-6956 / hallej@mail.belmont.edu | No limitations. |
| Education | KRIS THOMPSON 248/370-4096 / Kathomps@oakland.edu | No limitations for content. Submit as either poster or platform. No switches will be made. |
| Geriatrics | SANDRA LEVI 312/996-1503 / sanlevi@uic.edu | No limitations. |
| Hand Rehabilitation | CAROLINE JANSEN 409/772-9494 / cjansen@utmb.edu | No limitations. |
| Health Policy and Administration | CLAIRE SWEATT 713/441-6012 / csweatt@tmh.tmc.edu | No limitations. |
| Home Health | WENDY ANEMAET 813/974-8492 / wanemaet@hsc.osf.edu | No limitations. |
| Neurology | CAROLYNN PATTEN 650/493-5000, ext 63593 patten@rrd.stanford.edu | No limitations. |
| Oncology | SANDRA ADAMS 301/402-3016 / sandra_adams@nih.gov | No limitations. |
| Orthopaedics | TARA FREDERICKSON 800/444-3982 / tfred@orthopt.org | Case studies or original research only. |
| Pediatrics | DAVID EMBREY 253/848-6661, ext 5255 dembrey@u.washington.edu | No limitations. |
| Private Practice | ROBERT DUVAL 770/979-1400 / reduvall@bellsouth.net | No limitations. |
| Research | SCOTT MINOR 314/286-1432 / minors@msnotes.wustl.edu | Posters: Original research only. Platforms: Post-professional graduate student research only. |
| Sports | JOHN NYLAND 502/852-2782 / john.nyland@louisville.edu | Original research only. |
| Veteran's Affairs | BRIAN MURPHY 801/582-1565, ext 1578 brian.murphy@med.va.gov | No limitations. |
| Women's Health | PAMELA DOWNEY 305/666-3232 / pamphd2b@aol.com | No limitations. |



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Call For Participants

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Example of a Full Version

Example of a Masked Version

The title of abstracts for CSM shall be in all lower case: except for the first letter of the title - and any acronyms

Osnot WH¹, Edwards AR², Ervin W¹

¹QRS Rehabilitation Institute, New York, NY

²PDQ University, St Louis, MO

Purpose: Headings shall be in bold italic print.

Subjects: This is an example of a fully identified abstract created at PDQ University and QRS Rehabilitation Institute. **Methods:** To the right is an example of how the masked (de-identified) version shall be presented. Note that in the masked version, identifying information in the header and the body of the abstract is deleted, but the position of the body of the abstract, and text within the body of the abstract, remains the same. Identifying information within the text of the abstract shall be deleted. **Data Analysis:** All typing shall be Times New Roman

font, font size 10. All information in the header (title, authors, location) shall be left justified. **Data:** Skip a single line between the header and the text of the abstract.

etc

The title of abstracts for CSM shall be in all lower case: except for the first letter of the title - and any acronyms

Purpose: Headings shall be in bold italic print.

Subjects: This is an example of a fully identified abstract created at

Methods: To the right is an example of how the masked (de-identified) version shall be presented. Note that in the masked version, identifying information in the header and the body of the abstract is deleted, but the position of the body of the abstract, and text within the body of the abstract, remains the same. Identifying information within the text of the abstract shall be deleted. **Data Analysis:** All typing shall be Times New Roman font, font size 10. All information in the header (title, authors, location) shall be left justified. **Data:** Skip a single line between the header and the text of the abstract.

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EMG Certificate Program (11-Month)

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This course is only open to health care practitioners who can legally practice EMG in their state by virtue of their practice act. This course is not intended to train someone outside practice act requirements. Enrollment limited.

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Interested in more information or application packets?

Fax you name and address to: Dr. Roger Nelson @ 1-610-768-5242 (FAX #)

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11 Call For Participants

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