

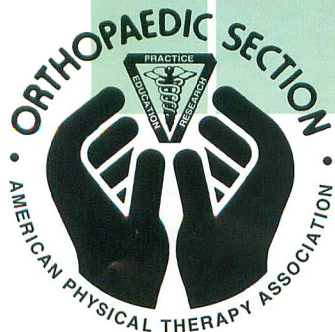
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PHYSICAL THERAPY PRACTICE

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2002



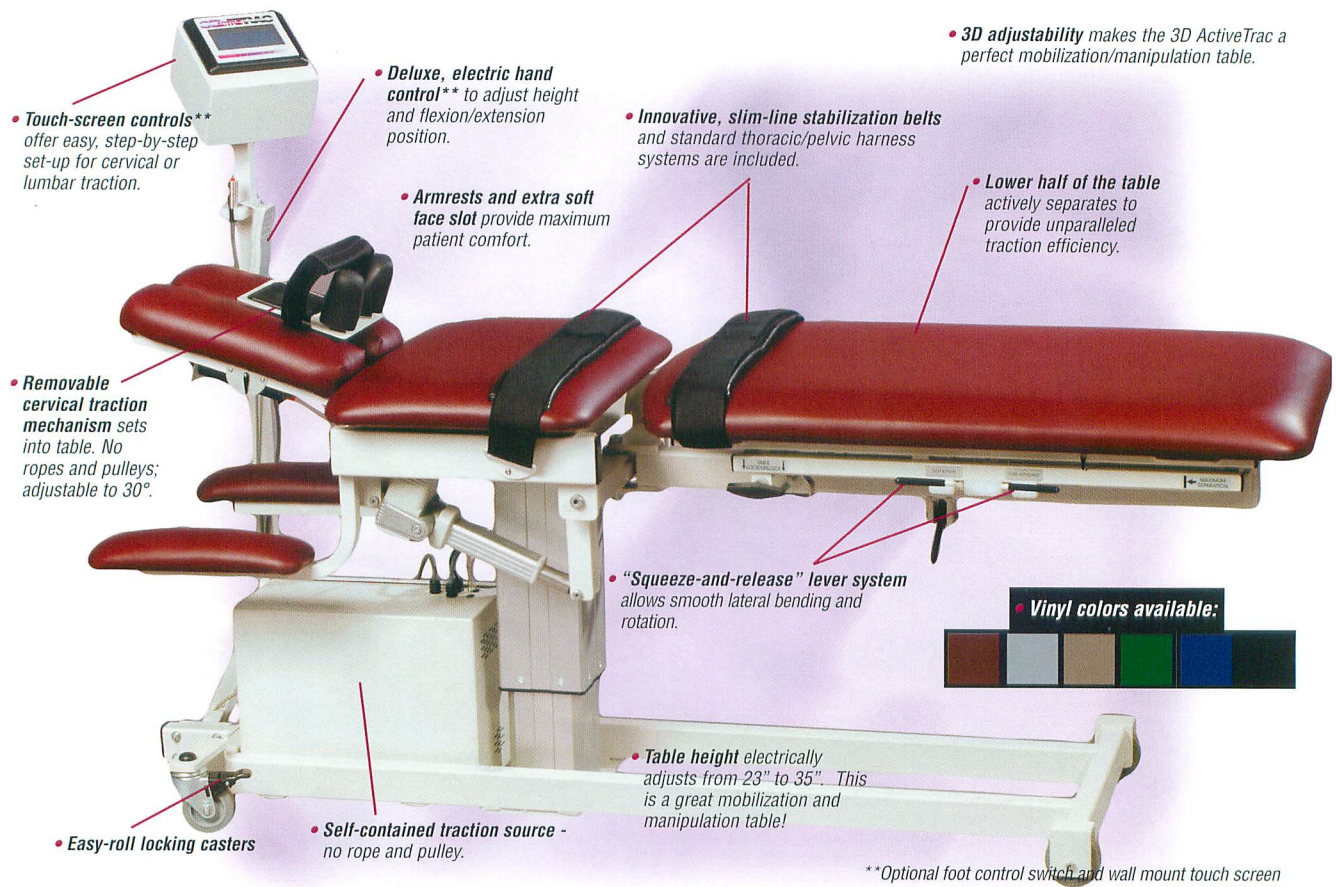
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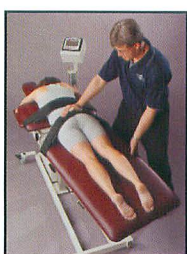
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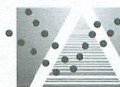
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MISSION

The mission of Orthopaedic Section of the American Physical Therapy Association is to be the leading advocate and resource for the practice of orthopaedic physical therapy. The Section will serve its members by fostering high quality patient care and promoting professional growth through:

- Advancement of education and clinical practice,
- Facilitation of quality research, and
- Professional development of members.

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Orthopaedic Section Directory

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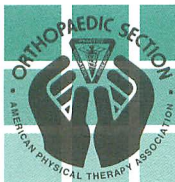
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Editor's Message



The 2002 House of Delegates in Cincinnati was busy as usual. The House dispensed with all but 4 of the 68 motions on the calendar. Congratulations to Speaker Pam Duffy for being such an effective leader. Also, congratulations to those elected to APTA office, especially Orthopaedic Section members Fran Welk, Treasurer; Janet Bezner, Connie Hauser, and Jim Milder, Board of Directors; and Terry Brown and Randy Walker, Nominating Committee. The Orthopaedic Section is proud to have you as members. You represent us well!

Two issues brought before the House were proposed or cosponsored by the Orthopaedic Section. One motion (RC 58-02) brought forth by the Orthopaedic Section dealt with qualified exemptions for licensure. A couple of years ago, the Performing Arts SIG raised the question regarding licensure and the practice of PT by therapists traveling with dance companies. The PASIG charged the Orthopaedic Section Board with pursuing this. As you know, each jurisdiction sets its own laws regarding the practice of physical therapy through practice acts and rules and regulations. Passage of RC 58-02 resulted in a new APTA policy supporting the inclusion of exemptions in physical therapy practices acts for PTs who are licensed in one jurisdiction but who are temporarily providing services to performing arts companies, athletic organizations, or teams in another jurisdiction. While this policy does not change any current law, it encourages states to consider adding this exemption when changes are pending to the practice act or through changes in the rules and regulations.

The other motion that the Orthopaedic Section had a particular interest in was RC 53-02. This motion dealt with continuing education for individuals other than PTs and PTAs. This issue was first raised by the Orthopaedic Section and the Montana Chapter in last year's House. This year's revision strengthens APTA's stand regarding teaching of clinical continuing education courses that include elements of physical therapist patient/client management to persons other than PTs and PTAs. If you ever wondered if the Orthopaedic Section was involved in the APTA governance process—be assured that we are. Steve

McDavitt served again this year as Section delegate and did a great job.

As is done every year, the House of Delegates adopted the annual goals for the Association. For the details, go to APTA's web site and to PT Bulletin (www.apta.org/bulletin). Then, select "view archived issues." Next, click on the June 12, 2002 issue (vol. 3, issue 24). There you will find a full update on the approved Goals of the Association, as well as what else happened in the 2002 House of Delegates, including Association policies that were revised or adopted.

A number of issues decided by the House were related to membership. This year, the House revised some existing membership categories and created some new ones as well—retired active and retired affiliate and corresponding member. The corresponding member category is for the chapter level. This category would allow members of one chapter to be "corresponding members" of one or more other chapters. This would provide therapists the opportunity to be involved in more than one chapter and would be particularly helpful for those therapists who live (and vote) in one state but choose to be members of the chapter in the state in which they work. Each state will determine their own requirements and dues schedule. This category, to be implemented by 2004, should help facilitate an increase in involvement of members and may be particularly helpful for legislative issues. For more information on these and other issues decided by the House, go to APTA's website or contact members of your chapter's delegation.

This issue of *OP* has a wide variety of information. Our feature articles include one by Kelly Bronson on the evidence supporting the use of yoga therapy as a part of the physical therapist management of patients. As you may remember, we have published a couple of articles on yoga therapy in the past year. The difference with this article is that it doesn't talk about how to incorporate yoga into PT, but why that incorporation is a good idea. The second article is by a group of Brazilian therapists regarding the incidence of low back pain among *capoeira* players. I'm not spoiling this one. You'll have to read the article to find out about *capoeira*!

The SIG newsletters are also full of information. The Animal PT SIG is requesting comments on a draft document of objectives to describe clinical competency in animal rehabilitation. Also, they have issued a "call for authors" for next year's special issue of *OP* featuring Animal Rehabilitation/Physical Therapy. The Pain Management SIG provides us with information about CSM programming in 2003 and a clinical article on pain management. Performing Arts shares information about their ongoing practice analysis, as well as information on CSM 2003. The Occupational Health PT SIG's newsletter gives us an update on OSHA's plan for ergonomic injuries, as well as information about the upcoming practice analysis. The Foot and Ankle SIG gives us a glimpse of their offerings at CSM in Tampa, as well as an article on PT management of a person with a total ankle arthroplasty. The SIGs have done a great job as usual with providing us with clinically relevant information in those specific areas of orthopaedic practice.

If your weather is anything like mine in August, fix yourself a tall glass of iced tea and enjoy this issue of *OP*.



Susan A. Appling, PT, MS, OCS
Editor, *OP*

President's Message

A Hot Time in the Old Town Tonight

Another hot summer in the Midwest. Oh well, I should be used to it by now. The 2002 APTA Conference and Scientific Exposition was equally hot in Cincinnati. Perhaps, not as hot or fiery as APTA President Ben Massey's strong and clear message which he repeated over and over again. The important message is that physical therapists should be allowed direct access to Medicare patients and repeal, forever, the capricious \$1500 Medicare cap on physical therapy services. Now that would make my summer really cool. If Congress passed a law allowing us to have direct access for Medicare patients, the door could open since most insurance companies often follow Medicare's lead. Also, getting direct access from Medicare would give a huge boost to the remaining states that have not yet achieved direct access. Perhaps, as physical therapists, destiny may finally be in our hands. But this fight will not be easy. It will take money, time, and the willingness and determination of many of our members to call their US Representative and US Senator and convince them that the time is right for us to have direct access. Letters and calls from patients directly to Congress also would be extremely helpful.

Physical therapy needs this legislation. Just a few minutes ago I got off the phone with the Missouri Physical Therapy Association's lobbyist, who told me that a number of physicians were planning on putting in a bill next year that would allow physicians to again privately own physical therapy services in Missouri. If that ever happened, I know I probably would not stay open for very long. Why would any physician who owns a physical therapy clinic send me a patient? The playing field would definitely be in favor of the physician-owned service. I perhaps would get my loyal patients and some from a few loyal doctors but that would probably be it. Like it or not, money is power in our society. Interestingly enough, I was just at my own doctor's office. Two drug company representatives were in a lab area while another was waiting (circling) outside. My doctor told me that he is invited all the time to dinners, given free tickets, blanketed with gifts, all for pushing medicine from the drug companies. I sometimes really wonder if the drug compa-

nies have conditioned many physicians to always expect something for a referral. Referral for profit is still a huge problem in physical therapy in some regions of the country. I have heard of many gray pecuniary deals made between referrer and the acceptor of the referral. As a private practice physical therapist I was approached by some referring sources and asked for favors or gifts with the tacit acknowledgment that my inactions could ultimately affect future patient referral. I call this blackmail; others may just call this *doing business*. To me the best way to solve this problem is to achieve direct access. Direct access could eliminate much of these kinds of problems. If patients came to us first, we could be the referrer not the one who receives the referral. That would be nice if the system would work both ways, not just one way; the tables could be turned. Physicians may then look to us for referrals, and then maybe a collegial, professional relationship of trust may then develop. Oh, I must be dreaming again. Finally, Medicare direct access for all Medicare enrollees that allows full freedom to all physical therapy services is a huge step in the right direction. It is not only right, it is time.

Achieving direct access also may help in the battle for fair and reasonable compensation of services. After the most recent HMO disaster, I have just started to rebuild; however, I still get paid about \$200.00 per episode for many of my patients. Now that is okay if I see them 4 or 5 times, but many are ACL repairs or rotator cuff repairs that take 20 or more visits. Do the math—it's not very much. Yes, I could give them a home program; however, I vowed I would do my best for all (not just some) of my patients. I would rather quit and do something else than go against what I believe is best for my patients. Direct access would give me at least some leverage in dealing with HMOs and other insurers. I also believe that by achieving direct access the true potential of our ability to hasten recovery and prevent future problems will finally be discovered and disseminated. This can only be good for reimbursement.

Call me a physical therapy jingo but I believe the time will come when everyone will recognize our unique ability to look at the body and then effectively, safely, and economically evaluate and

treat the musculoskeletal system. Case in point. I have recently had a glut of patients with frozen shoulder recently referred to me. In over 90% of the cases they started off as a minor shoulder strain, usually a minor rotator cuff tear, and were given drugs by the doctor or nurse practitioner. Three, maybe 4, months later they were referred to my office with a shoulder strain (often adhesive capsulitis is never mentioned in the diagnosis). The history is one of first having full shoulder range of motion and pain and then later developing limited mobility. Now I know I don't have hindsight, but my overwhelming feeling is that I am seeing a lot of patients who were not properly diagnosed or treated correctly early on. Furthermore, I believe that if I could have started treatment early, most of these patients would probably never have developed a frozen shoulder. In some of these cases, where the patient clearly had a frozen shoulder, they were sent to a neurosurgeon, an orthopedist, or a rheumatologist and then had a sundry of tests including EMGs, multiple radiographs, thermography, MRIs, CT scans, and various other usually costly, often painful, and sometimes risky tests. I can't help but wonder what were they thinking. Why didn't I ever get a chance to see this patient first? Why not me? Why a surgeon before me? How much money could I have possibly saved my patient? How much money could I have saved the insurance company (which the patient really pays in the long run anyway)? How much pain, anxiety, and disability could I have eliminated? I often wonder if anyone ever touched the patient, or maybe even less likely, check passive shoulder range of motion at all? Why not? I just don't know. After all these procedures, time wasted, money spent, pain endured, why wasn't I given the first chance? We don't give out drugs with potential side effects or adverse reactions. We don't perform surgery where a slight slip could lead to major complications. Our craft has but few side effects. Our hands give caring compassion, and our simple but physiologically and kinesiology sound treatments help most all of our patients. I personally have never been sued in my 24 years (I better knock on wood) and have never had any worse side effect than a few hours of shoulder pain. And I ask

(continued on page 10)

Paris Distinguished Service Award Acceptance Speech

Nancy T. White, PT, MS, OCS

This speech was presented at the 2002 Combined Sections Meeting in Boston.

Thank you all for this incredible honor. I would especially like to thank the Board of Directors of the Section, the Awards Committee, and all of you who made this possible. My time with the Orthopaedic Section has definitely been one of the best decisions of my career. Associating and being friends with the best physical therapists in the country has been such a wonderful experience.

I must begin tonight with a few words of thanks. First of all, I'd like to thank my Program Chair in physical therapy school, Marilyn Gossman, who simply signed all of us up for APTA membership—Sections and all—without even asking! In doing so, and through her many other actions throughout her incredible life, she taught us that being involved was not optional.

I'd like to thank Carolyn Wadsworth for coming up to me 20 years ago at a continuing education course and asking me to get involved with the Section. I certainly wouldn't have had the confidence to volunteer without this invitation—and I learned the incredible power of flattery, and of directly asking someone when you need some help.

I'd like to thank Annette Iglarsh for making me look good as Program Chair for the Section! Her terrific ideas in the areas of education and programming—the home study course, review course, and special interest groups—generated amazing revenues for the Section and provided tremendous member benefits. Because of these, the Section has been able to support our priorities, from residency education to research. As Program Chair, all I had to do was take up space, and the money from Annette's programs kept pouring in! Twelve years later, we are still benefiting from her ideas.

I'd like to thank Bill Boissonault for his friendship, for 6 great years of working together, and especially for showing me what great leadership can accomplish.

I must thank one of my heroes, Stanley Paris for whom this award is named, for his courage in asking tough questions and making bold statements and for being willing to take the hits for all of us as we sit safely and quietly on the politically correct sidelines.

And, oh yes, my family! When I first spoke with Lola after finding out that I had received this award, of course I said, "How long do I have to speak?" She said, "Don't worry, you can take up 20 minutes just thanking your husband!"

Well, I won't take 20 minutes, but I must take a moment to tell you what a great husband I have. Never once in 10 years of marriage has John said "now, tell me again why you are doing this." Not when he pushed a screaming colicky newborn around the Baltimore Inner Harbor while I ran a Section continuing education course; not when he spent an afternoon in 180° Phoenix heat playing putt-putt golf with the Section Board; not when, as Program Chair, I left him for 7 days with a 4-month-old, an 18-month-old, and all 3 were sick and stayed sick for the entire CSM; not when I quit my paying job, and kept all my nonpaying PT jobs; and not even when I took on a new job that not only didn't pay, but that I had to pay to do!

I'd like to thank my daughters, Mary and Elizabeth, for the pure joy they bring to my life and for trying to teach me that it doesn't matter what you say as long as it's funny!

I'd like to thank my parents. I thank my dad for passing on to me what my sisters and brother call the "overly responsible gene." I'm the only one in my family who got it, but I expect most of you here tonight have one too. He taught me that life is so much better when you're right in the middle of things! I'd like to thank my mom for helping me see the value of balance in my life, and for helping me realize that there is really nothing more important than being kind.

And finally, I must thank myself—and you should too—for making the motion 2 years ago as Awards Committee Chair to decrease the length of the Paris acceptance speech from 1 hour to about 20 minutes!

As I mentioned earlier, I took a couple of years off from clinical practice a few years back. In returning to practice over the past year, I have noticed one huge change. Advances in technology have made access to clinical and scientific information so unbelievably available. Clinical questions that before would have meant a trip to the library, a formal Med-Line search, pouring through text books, or calling Dan Riddle can now be

answered in minutes on my home computer. A course in evidence-based practice combined with assistance currently being provided in articles such as the ones in *Physical Therapy* have made me a whiz at searching for answers to my questions.

I have so many questions these days! Two days of my week are now spent supported by a grant to provide physical therapy services at the Arlington Free Clinic. A real surprise has been the variety of patient problems that I see—patients with DuPuytren's contracture, amputations, flexor tendon repairs, vestibular problems, knee-bracing issues—I could go on and on. Almost every night, I'm searching the databases. And guess what? There's not a lot there.

The evidence for surgical interventions, injections, and medication management always seems to be pretty good. But, the evidence for physical therapy intervention is quite often weak or absent. In most cases, this lack of evidence is not because the intervention has been proven ineffective, but because the study has not been done or has been poorly designed.

If this information is this accessible to us, it is also accessible to the rest of the world: to the physician who is looking for the most appropriate management of the patient with spinal stenosis, to the patient who is looking for the best type of practitioner to see for back pain, to the third party payer who is making decisions on reimbursement for traction or therapeutic exercise. It's all out there for everyone to see. It was bad enough when you had to go to the library!

This experience has made me more committed than ever to getting more of our questions answered. The good news is that, even though it seems like it has taken forever, we are actually in a very strong position to dramatically change this picture.

First of all, we have finally defined what we need to know! Our Clinical Research Agenda clearly spells out what questions need to be answered. The fact that Foundation funding only goes to projects that answer questions from the research agenda is a critical step in improving the relevance of the research that we are supporting.

Second, the *Hooked on Evidence* project will allow clinicians to have access

not only to relevant articles, but to critiques of these articles that give the clinician a true sense of the meaningfulness and quality of the research.

The new Clinical Research Network will force researchers to collaborate—to share ideas, resources, and data—and will take us to the next level in accomplishing our research objectives. And finally, we now have many PT researchers who are well positioned to receive significant funding to answer even bigger clinical questions.

I'd like to sidetrack for a moment and talk about these researchers. When I joined the Foundation Board 4 years ago as a representative of the Sections, I had a mind set that I believe is similar to other clinicians who are not researchers. I viewed the Foundation much in the same way that I view vitamins. I knew it was good for me, but I could never really see the direct benefit.

I would look down the list of project titles, especially the doctoral awards, and think how little they related to what I was interested in and needed to know. I'd think, "when is the Foundation going to get around to answering some real questions—especially in orthopaedics?" And I don't think I was alone in my wondering! And although the small grants seemed to be a step toward answering targeted clinical questions, they seemed too narrow in scope.

It took me forever to understand the real value of all of these projects, and the real secret to getting our questions answered. It's called leveraging, or using other people's money to answer our bigger questions, and it's truly the untold success story of the Foundation.

What I've learned—and all of the researchers in the room already know this—is that in order to obtain real dollars for research, a track record is necessary. Funding agencies like the federal government do not give real money to anyone without a proven record of success at a lower level. A good idea alone is not enough. In order to get a grant large enough to address important questions in a meaningful way, research must first show success with small and medium sized research dollars. The great news is that when you look at the Foundation, that is exactly what has happened.

Data collected in 1999 by Janet Bezner for the 20 years between 1979 and 1999 revealed that the Foundation had given out approximately \$6,000,000 to researchers. This represented approximately 700 grants, scholarships, and fellowships. The real news is that those recipients went on to leverage

this \$6,000,000 into an additional \$39,000,000 in grants from outside sources. If you do the math on this, that's a 750% return on our investment! These dollars are now being spent answering bigger questions using "other people's money," and the researchers are physical therapists who received their start with the Foundation.

Since 1999, we have had many more success stories. Thanks in large part to the generous support of the Orthopaedic Section, we have wonderful success stories in orthopaedics. Here are a few examples:

Phil McClure received \$10,000 in doctoral funding and a \$40,000 small grant funded by the Orthopaedic Section. He has since received a \$50,000 grant from the Arthritis Foundation and is funded as a collaborator on 4 grants totaling \$1,500,000. Based on pilot data from the Orthopaedic Section grant, he will be submitting an application this summer as the principal investigator for a \$1,000,000 NIH/NIOSH grant.

Lynn Snyder-Mackler, who received early seed money from the Foundation, has leveraged this money so successfully and now has funding of approximately \$700,000 per year for each of the next 5 years.

Tony Delitto, who received \$600,000 in Foundation funding for the Clinical Research Center (much of this being Section money), is now the Principal Investigator for an NIH grant on spinal stenosis with funding of \$1,200,000. Proposals have been submitted for several other grants totaling several million dollars.

There are so many others I could highlight—Kelly Fitzgerald, Irene McClay, Julie Fritz. They all have similar success stories, they are all doing orthopaedic clinical research. They are all funded by outside agencies, and they are all just getting started. What a great investment we have made!

We need to keep making these investments. The questions being answered are so important to us. It's easy for us to say, "We've given generously for years. We need a break." Or "let someone else take a turn." But, the reality is that if we want evidence for orthopaedic physical therapy practice, we must be the leaders in supporting it.

Of course, we can't give away money we don't have, but we must make certain that we maintain our financial resources so that we can support our priorities. The Section has long been known for its innovation in developing non-dues rev-

enue. Home study courses, continuing education, and services to other components worked wonders in the 80s and 90s. These programs were the result of our most creative minds working to meet the needs of our membership. We need to pull these minds back together to brainstorm on new ways to provide services to members and maintain our revenues so that we can fulfill the mission of the Section.

The Section should be proud of the investment it has made in orthopaedic physical therapy's body of knowledge. We are just beginning to see the true results of the commitment we have made over the years. We all know in our hearts how much our patients are helped by what we do. We must keep working to make sure the rest of the world knows this too. Thank you so much.

CLINICAL RESEARCH GRANT PROGRAM

The Orthopaedic Section supports its members by funding studies to systematically examine orthopaedic practice issues. The purpose of the grant program is to address the urgent need for clinical research in orthopaedic physical therapy.

To submit an application of request additional information:

- visit our website (orthopt.org); you will find the clinical research grant program under the member benefit link

or

- contact Stefanie Snyder at the Section office (800.444.3982)

14th Annual Rose Excellence in Research Award Acceptance Speech

Daniel Riddle, PT, PhD

This speech was presented at the 2002 Combined Sections Meeting in Boston. The paper was entitled, "Use of the SF-36 and SF-12 Health Status Measures: A Quantitative Comparison for Groups Versus Individual Patients" published in *Medical Care* 2001;39(8):867-878.

I want to begin by thanking my coauthors, Ms. Kang Tzu Lee and Mr. Paul Stratford. I can assure you this work for which we are being honored tonight was a team effort and we all would like to thank the Orthopaedic Section and the Research Committee for recognizing our work. My coauthors and I have agreed to donate the cash award to the Foundation on behalf of the Soderberg challenge in its effort to fund the Clinical Research Network. We are honored and greatly humbled by this award. I had the good fortune of attending the 1st Annual Rose Award presentation in 1987 when Dr. Steven Rose was recognized as the first recipient. Many important papers written by some of the most dedicated and respected researchers in Physical Therapy have been recognized. We feel a great deal of pride to be added to this list.

Speaking of Paul Stratford, Paul and I wrote a paper recently on the interpretation of validity indexes for diagnostic tests using the Berg Balance Test as an example. We talked about likelihood ratios, sensitivity, false positive rate, and the like. Some of you may remember it; most of you have probably forgotten it. Anyway, to give you an example of how this kind of work creeps into your every day life...my wife and I love to go to the movies. We also like to read the movie reviews of the local movie critic. I mentioned to her that many times we agree when the critic writes a good review but many times we disagree when the critic pans a movie. Jane, my wife, looked at me with a gleam in her eye and said, "That means he has very few false positives but a lot of false negatives!!" I realized then that I'm bringing way too much work home.

I have attended most of the past Rose Award ceremonies since 1987. One of my fondest memories of these ceremonies was the acceptance speech presented by Dr. Karen Hayes, the award winner in 1995. Karen's speech had a profound effect on me at the time and Karen and I have become great friends as a result of our interactions back in '95. I wanted to

share with you a brief part of that speech. Karen, I hope you don't mind.

"Thinking of my graduate students' first venture into this sometimes frightening world of research makes me think of my daughter when she was in junior high school. Now my daughter has never been a risk-taker but one day, out of the blue, she decided that she wanted to participate in Outdoor Adventure—a sort of Outward Bound. The fact that she registered was a surprise to me; it took a lot of courage for her to face her fears of the unknown. When she came home sporting her "I survived" t-shirt, she told me about having to walk across a gap, 20 feet above the ground on 3 ropes—you know, the kind that you walk on one and hold on to the other two. About half way across, she panicked; she couldn't move. Her choices were to inch backward, to inch forward, to fall, or maybe a kind soul could come and rescue her. After much emotional display and a great deal of support from her friends, she conquered her fear and made it across the ropes."

“

I operationally define a heroic therapist as one who endures to overcome difficult and potentially life threatening obstacles and goes on to make critically important contributions to our profession and its members.

”

To me, this excerpt from Karen's speech is all about courage and is a perfect segue to a topic I would like to briefly discuss. I want to address the issue of heroism. Not the glorified type we associate with athletes or the gut wrenching type we associate with events like those of September 11. Rather, I want to discuss the concept of the heroic therapist.

Before you all start wondering what I mean by this term, I thought I'd be the good and proper scientist and define the term for you. I know some of you would be highly disappointed if I didn't at least attempt an operational definition for this term. I operationally define a heroic therapist as one who endures to overcome difficult and potentially life threatening obstacles and goes on to make critically

important contributions to our profession and its members.

The heroic therapists I have in mind aren't well publicized and do not seek recognition. Rather, these heroes go about their business quietly and steadfastly, overcoming by looking forward and taking one step at a time, steadily and with support of family and friends. What is the ideal that drives these heroes of mine? I suspect it is the belief that contributions to the greater good, by whatever means, is most important. The following simple but profound parable typifies the attitudes and principles that I believe motivate my heroic therapists.

A young man was picking up objects off the beach and tossing them out into the sea. A second man approached him, and saw that the objects were starfish.

"Why in the world are you throwing starfish into the water?"

"If the starfish are still on the beach when the tide goes out and the sun rises high in the sky, they will die," replied the young man.

"That's ridiculous. There are thousands of miles of beach and millions of starfish. You can't really believe that what you're doing could possibly make a difference!"

The young man picked up another starfish, paused thoughtfully, and remarked as he tossed it out into the waves, "it makes a difference to this one."

I contend that we all need heroic therapists to guide us as individuals, to motivate us when we need it, and to serve as reminders of how courage and commitment can be a strong life force for all areas in our lives, both professional and personal. I have 4 therapist colleagues who I look up to as heroic therapists and who certainly have made a difference to this one. These 4 individuals are Jill Binkley, Susan Harris, Pam Levangie, and Jules Rothstein. I'm not going to go into detail about each of these individuals. It would just serve to embarrass them further. Suffice it to say that these 4 people show an incredible devotion to our profession and despite what must have seemed at times to have been an overwhelming adversity they continue to

provide all of us, both individually and collectively, with important professional contributions and for me a profound and inspiring example of quiet courage. It is all of us who are the beneficiaries of their commitment and their talents.

I ran across a quote from Arthur Ashe that I believe aptly describes my therapist heroes. Ashe had the following to say: "true heroism is remarkably sober and very undramatic. It is not the urge to surpass all others at whatever cost, but the urge to serve others at whatever cost." I believe Ashe's statement captures the essence of why these 4 individuals are my heroic therapists.

I encourage each of you to identify your own heroic therapists. They can only serve to enrich our lives and, simply, make us better people. My own personal thank you to my therapist heroes Jill, Susan, Pam, and Jules.

"There is no limit to the good you can do, if you don't care who gets the credit."

—Anonymous (appropriately enough)

President's Message (continued from page 6)

again, why not direct access? Let me tell you a little secret—it is usually about the money! Again, why not direct access? We must have this so we can care for our patients like we would like to be treated ourselves—safely, fairly, compassionately, and kindly. I firmly believe that if we ever get direct access, our flower will finally flourish and fully bloom. No more physical therapist manqué.

The Orthopaedic Section has always been a leader in promoting health care. I hope that each and every member can commit to making the call or write the letter to your US Senator or Representative. It is easy; APTA's web page (apta.org) is set up to help you along the way. Please take a few minutes out of your day to urge the passage of this very important bill. Remember that we can make a difference only if we all do this together. That's why we belong to an association. The strength is in our numbers (sorry for being a bit pedantic). As a physical therapist that cares about tomorrow, I urge you to support this. Finally, before I stop discussion, I would like to also thank Elaine Rosen who has been a tireless supporter and champion

of this cause. Thank you Elaine. We must pass this bill. Much of our future depends on this.

Last, I would be remiss if I did not thank a few people. First, it is farewell to our APTA Board liaison, Randy Roesch. Randy has been my guardian angel for the last 18 months; I will miss her greatly. Second, welcome aboard James Dunleavy, our new APTA liaison. Too bad he's a New England Patriots fan; oh well, I will make do. I look forward to working with Jim again. Last but not least, congratulations to all of the Orthopaedic Section members who received awards (see highlighted box on page 32) at APTA's Annual Conference in Cincinnati this past June.



*Orthopaedically yours,
Michael T. Cibulka,
PT/MHS, OCS
President*



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The Therapeutic Benefits of Yoga

Kelly M. Bronson, SPT

INTRODUCTION

Yoga, a literal translation from the Sanskrit word for “union,” is a 5,000-year-old Indian practice that seeks to unite and create harmony between the mind, body, and spirit. There are 40 main schools of yoga philosophy, which all seek the same final goal of enlightenment.¹ Yoga is increasing in popularity in the United States as a means of maintaining health, with greater than 6,000,000 Americans practicing regularly.² This paper will address the scientific research supporting the physiological and psychomotor changes resulting from yoga practice. This will provide orthopaedic physical therapists with an initial foundation of knowledge to successfully implement evidence-based practice on the therapeutic benefits of yoga. Hopefully, the reader will become further educated on yoga to appropriately integrate such a program into rehabilitation regimes to achieve the most optimal outcome for every client.

This paper, in accordance with popular Western practice, will focus on Hatha (pronounced haht-ha) Yoga. This approach, which has 8 main styles, primarily uses the body to physically perform practices such as pranayama (pronounced prah-nah-yah-mah) and asanas (pronounced ah-sah-nah), along with meditation. Pranayama is defined as breath control and is used in conjunction with the asanas to focus the mind and relax the body. Yogic breathing is performed slowly and without strain throughout the routine, with a brief pause of 1 to 2 seconds after each inhalation and exhalation. The body expands with inhalation and the body contracts with exhalation. Asanas are physical postures that are performed using isometric contractions and held firmly from a time that ranges from seconds to minutes.² There are 84 basic asanas in Hatha Yoga, which are categorized in accordance with the movement they create in the body.³ An example of this naming system is the *forward bend and backbend* postures.⁴ Yoga can be practiced for a variety of reasons, including physical fitness and health maintenance, sport, and spiritual discipline.² This paper will focus on the health benefits as they relate to the orthopaedic physical therapy clinical setting.

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This will provide orthopaedic physical therapists with an initial foundation of knowledge to successfully implement evidence-based practice on the therapeutic benefits of yoga.

”

WHOLE BODY BENEFITS

Yoga impacts the health and well being of the entire body. These benefits can be organized into 5 different categories. These categories are the physiological, psychological, psychomotor, cognitive, and biochemical. Decreased pulse rate, decreased respiratory rate, decreased blood pressure, autonomic nervous system equilibrium with a tendency towards parasympathetic dominance rather the usual stress-induced sympathetic dominance, increased musculoskeletal flexibility, increased muscular strength, and increased aerobic and muscular endurance are some of the many reported benefits in the physiological domain. Improved mood, self-acceptance and self-actualization, decreased anxiety, and decreased depression are a few of the many reported psychological benefits. The reported psychomotor benefits include increased grip strength, improved choice reaction time in which the subject gives a response that corresponds with a stimulus, improved dexterity, and improved balance. Improved attention, memory, and learning efficiency are reported cognitive benefits. Lastly, vitamin C increase, high density lipoprotein (HDL) cholesterol increase, low density lipoprotein (LDL) cholesterol decrease, and increased hematocrit are reported biochemical benefits of yoga.⁵ As a result of this vast number of health improvements that could potentially result from yoga practice, a variety of clients have the potential to benefit from the implementation of this alternative form of therapy into their treatment plans. Although there are many proposed health benefits resulting from yoga practice, this paper will focus primarily on research illustrating the physiological and psychomotor benefits of yoga as they pertain to the orthopaedic physical therapy clinical setting.

RESEARCH REVIEWS

Yoga's Effect on Aerobic and Anaerobic Muscle Power

The first research article, by Balasubramanian et al, investigated the effect of yoga on the aerobic and anaerobic power of muscles.⁶ Seventeen healthy male and female medical students with no previous yoga experience participated in this study. Yogic training—which consisted of relaxation, pranayama, and yogic postures—lasted 1 hour each day for 6 weeks. Two tests were performed on the subjects both before and after the yogic training. A bench stepping test was performed for a period of 5 minutes to determine aerobic power. VO_2 max was predicted from the Astrand-Rhyming Nomogram, which is a submaximal cycle ergometer test that uses the heart rate immediately after the test and the subject's body weight. The heart rate obtained at the end of the 5 minutes is used in a table to estimate the maximal oxygen uptake. Maximal oxygen uptake is then divided by body weight, in kilograms (kg), to determine maximal oxygen uptake in mL/kg/min. The second test involved climbing a stairway as quickly as possible, with 3 steps taken at a time, to determine anaerobic power. The time it took for the subject to climb from the third to the ninth step was recorded in milliseconds (ms). Anaerobic power was calculated by multiplying body weight, in kg, and distance, in meters (m), then dividing this value by each subject's time, in seconds (sec).

The results indicated an increase in VO_2 max from a mean of 1.95 L/min before yoga training to 2.29 L/min after yoga training. This increase illustrates improved oxygen consumption and cardiopulmonary fitness after yoga training. Also, parasympathetic nervous system dominance during yoga may have caused muscle relaxation and, consequently, increased blood flow to the musculature. Anaerobic power demonstrated a significant decrease after the period of yoga training. The results indicate a decrease from 74.73 (kg)(m)/sec prior to yogic training to 54.11 (kg)(m)/sec observed after the yogic training. The authors of this study attribute these results to the conversion of some fast twitch muscle fibers into slow twitch fibers during yoga practice, thus enhancing aerobic power and diminishing anaerobic power.⁶

Although this research study illustrated some important principles about yoga's effect on aerobic and anaerobic muscle power, there are weaknesses in this study that need to be addressed as well. The number of subjects used was quite small and fairly homogenous, making external validity limited. The determination of anaerobic power by quickly taking 3 steps at a time, while easily performed by the 17 young and healthy medical students, would be a difficult testing technique to reproduce in a less agile population. Also, the significance of choosing 3 steps at a time in determining anaerobic power was not explained.

The clinical implications of the study may include considering yoga as a means for accomplishing the rehabilitation goal of increasing endurance. This would include athletic clients that participate in events such as marathon running, soccer, lacrosse, or basketball. In contrast, prescribing yoga for clients requiring quick bursts of energy such as sprinters, with the goal of improving speed, has yet to be found scientifically valid.

Yoga's Effect on Reaction Time, Respiratory Endurance, and Muscular Strength

The second research report, by Madanmohan et al, investigated the effect of yoga training on reaction time, respiratory endurance, and muscular strength.⁷ The subjects consisted of 27 healthy, male medical students. Control measurements were taken before the 12 week yoga training, which consisted of visual and auditory reaction times, maximum expiratory pressure (MEP), maximum inspiratory pressure (MIP), 40 mmHg test, breath holding time after expiration (BHTexp), breath holding time after inspiration (BHTinsp), and hand grip strength (HGS). Yoga sessions lasted 30 minutes in the early morning Monday through Saturday under the direct supervision of one of the authors, whose qualifications were not specified. The above measurements were taken for a second time at the end of the yoga training period. There were a variety of techniques used to obtain the above measurements. Reaction times for light and sound were measured on a fast moving paper. The visual and auditory signals were given in front of the subjects. Greater than 10 reaction times, with no particular range provided, were recorded and the mean of the 3 closest reaction times was taken as the final data. Maximum expiratory pressure was measured by having the subject blow into a mercury column after taking in a full breath and to maintain that col-

umn at a maximum level for 2 seconds. Maximum inspiratory pressure was determined by having the subjects maximally inhale and hold for 2 seconds into the mercury column, after a complete exhalation. The 40 mmHg test was recorded after the subjects inhaled fully and then exhaled into the mercury column set at a pressure of 40 mmHg. The time, in seconds, for which the subject could maintain the mercury level at 40 mmHg was recorded. Breath holding time after expiration was recorded by the time, in seconds, that the breath could be held after a complete exhalation. Breath holding time after inspiration was recorded, in seconds, after a full inhalation. The HGS was measured on the subject's dominant hand using a hand held dynamometer (INCO, India).

The results indicate improvements in all of the measured variables. Reaction times for light prior to yoga was 270.00 ms and decreased to 224.81 ms after yoga training. The RT for sound was 194.18 ms initially and decreased to 157.33 ms after yoga. These decreased reaction times indicate improved sensorimotor performance. Maximum expiratory pressure and MIP before yoga were 92.61 mmHg and 72.23 mmHg, respectively. These values increased after yoga practice to 126.46 mmHg and 90.92 mmHg, respectively, thus indicating improved strength of the respiratory musculature. The 40 mmHg test increased from 36.57 sec before yoga to 53.36 sec after yoga, illustrating improved cardiorespiratory endurance, according to the authors. The BHTexp increased from 32.15 sec to 44.53 sec after yoga. Breath holding time after inspiration increased from 63.69 sec to 89.07 sec post yoga training, indicating improved cardiorespiratory endurance. Hand grip strength increased from 13.78 kg to 16.67 kg, illustrating improved hand muscular strength resulting from the isometric contractions performed during yoga.⁷

There are some limitations associated with this research study that require consideration. Only male medical students were selected to participate, making the subject sample homogenous. Also, the fast moving paper technique for reaction times was not described. The performance of yoga under the direct supervision of the authors had the potential to serve as a biasing factor. These factors limit the extrapolation of this study to the general public, thus questioning external validity.

There are important clinical implications to be considered from this study. Yoga is potentially beneficial for clients

with lung dysfunction, where improved respiratory muscular strength and cardiorespiratory endurance would serve to improve their function. Clients receiving orthopaedic physical therapy postoperatively would benefit from the improvements demonstrated in this research article as well. Following the trauma of surgery and a period of immobilization, these clients are in need of the improved sensorimotor performance, cardiorespiratory endurance, and strength that yoga has the potential to provide.

Yoga's Effect on Muscular Strength

The third research article, by Gharote et al, investigated the effect of yoga on minimum muscular fitness in school children aged 6 to 18 years.⁸ Minimum muscular fitness, as described by the Kraus-Weber (K-W) test, is a series of 6 muscular strength tests. The test is pass/fail and failure on any one of the 6 items indicates a failure of the entire test. A failure was determined by the inability to perform the specific exercise once. The 6 measures included testing the strength of: the abdominals and psoas muscles by performing a sit-up with the legs outstretched; abdominals minus the psoas by doing a sit-up with the knees bent; psoas by holding the legs 10 inches off the ground for 10 seconds while supine; upper back by lifting the chest off the ground while prone; lower back by lifting the legs off the ground while prone; and back and hamstring musculature length by bending forward to touch the floor with the fingertips while standing, for 10 seconds, with knees straight and without bouncing. The 208 subjects who had previously failed the K-W test were randomly divided into 3 groups. One group performed yoga daily, another group repeated the K-W test once daily, and the last group served as the control by not participating in either yoga or the K-W test.

The results indicate that the failures improved, thus now passing the K-W test, by 36.8% in the yoga group, by 20% in the K-W test group, and by 4.76% in the control group. The failures that remained were most commonly from the abdominals minus the psoas and the abdominals plus the psoas tests.⁸

A weakness present in this research study is that the daily duration of the yoga and K-W test practice was not provided. Also, the K-W test limits the quantity of muscles tested to determine strength increases. The 3-week training period is a limitation because of its short duration, thus decreasing the validity of the results. Lastly, the data lacked precision because

failure on a single subtest qualified as a total failure. This does not allow for the measurement of those failures where participants passed more subtests after the treatment, but still failed at least one test.

The clinical significance of these findings suggest that yoga may be more appropriate for increasing strength than practicing the strengthening activity for certain muscular groups; however, yoga may not be as effective as other means for strengthening the abdominals both with and without the psoas muscle. Clients with a diagnosis of low back pain in the orthopaedic clinical setting would greatly benefit from strengthened abdominal and spinal musculature to improve their core stability. In addition, this study illustrates that yoga may be an appropriate form of exercise for school-aged children.

Yoga and Stress

The fourth research article, by Malathi et al, examined the effect of Hatha Yoga on psychophysiological measures of 75 medical students at examination time.⁹ The subjects were divided into 3 groups of 25 each and participated for a period of 3 months. One group practiced yoga 3 times a week for an hour. The second group practiced relaxation, including sequential deep muscle relaxation from head to toe, 3 times a week for 30 minutes. The third group was the control that met in a classroom 3 times a week for 45 minutes. The control group was allowed to do anything they wished, such as reading or drawing. The following measures were taken before the initiation of the study, again at the end of the 3 months, which was 1 month before a final examination, and lastly on the day of the final examination. Anxiety level was measured using the Spielberger anxiety rating scale, in which the participant rated different statements numerically from 1 to 4 based upon the item that was the most accurate descriptor of the participant. Heart rate was measured using a digital heart rate monitoring machine for 1 minute. Blood pressure was measured in the right upper limb while sitting using a sphygmomanometer. Galvanic skin resistance (GSR) was measured with a 40-microampere current circuit and electrodes in the palms of the hands. Lastly, choice reaction time (CRT) was measured with an electronic timer, which recorded the response of hitting a button after responding to a colored light stimulus.

The results of this study are as follows. The initial anxiety score was approximately 30 points for all 3 groups. After the 3-month study, the yoga group

decreased to 20 points and the relaxation group decreased to 24 points, while the control group scored 33 points. On the day of the final examination a month later, the yoga group scored approximately 30 points, the relaxation group rose to 35 points, and the control group was at 50 points. This indicates yoga is most effective in reducing and controlling anxious responses in stressful situations. It has been proposed that yoga releases endorphins from the brain, thus making the subject feel euphoric. The baseline pulse rate was approximately 78 beats/minute in all 3 groups. The pulse rate at the end of the study in the yoga group was 72 beats/minute, 74 beats/minute in the relaxation group, and 77 beats/minute in the control group. On the day of the final examination, the pulse rate was 82 beats/minute in the yoga group, 85 beats/minute in the relaxation group, and 104 beats/minute in the control group. This indicates that yoga may be effective in reducing pulse rate as well as in minimizing the increase in pulse rate associated with stressful situations. The mean blood pressure was 120/80 mmHg before the study in all 3 groups. The mean blood pressure at the end of the 3-month study was 115/74 mmHg in the yoga group, 116/76 in the relaxation group, and 121/81 in the control group. The mean blood pressures on the day of the final examination were 125/82 in the yoga group, 126/82 in the relaxation group, and 132/92 in the control group. This suggests that yoga may be able to attenuate the increase in blood pressure during stressful situations. The GSR is an important parameter in measuring sympathetic activity and anxiety level. The lower the GSR, the more sympathetic activity and anxiety the subject is experiencing. Galvanic skin resistance had a baseline value of 64 kilo (k)-ohms before the study. The GSR at the completion of the study increased to 102 k-ohms in the yoga group, 83 k-ohms in the relaxation group, and 67 k-ohms in the control group. On the day of the final examination, the GSR was 90 k-ohms in the yoga group, 67 k-ohms in the relaxation group, and 41 k-ohms in the control group. Yoga was able to increase the baseline GSR and minimize the decrease in GSR during a stressful situation to the greatest extent. Choice reaction time had a mean baseline measurement of 185 milli-sec before the study began. At the conclusion of the study, CRT was 154 milli-sec. in the yoga group, 164 milli-sec. in the relaxation group, and 183 milli-sec. in the control group. A month later at the final examination time, CRT was 120 milli-sec. in the

yoga group, 134 milli-sec. in the relaxation group, and 165 milli-sec. in the control group. This indicates that the yoga group was the most attentive and quickest to respond to external stimuli, an especially favorable trait for future medical doctors to possess.⁹

There are a few threats to validity present in this study. The exact Spielberger anxiety rating scale used was not described. The one provided for demonstrative purposes in this paper is the testing anxiety rating scale. Also, the 3 groups met 3 times per week for different amounts of time which caused there to be an increase in the variables of this study. Also, the blood pressure measurements were not all rounded up to the nearest even number, thus decreasing the reliability of the measurements.

This article has clinical significance in that it suggests yoga has a positive impact on psychological well being in addition to physical well being. Patients with hypertension may benefit from a yoga program in their rehabilitation regimes. Also, yoga may have the potential to help patients improve performance at school or work because of these effects. Even under very stressful situations, yoga may be beneficial to the body. Stress has many detrimental physical effects on a person's body and recommending yoga to clients that are experiencing increased stress may be beneficial to their success in physical therapy.

Yoga's Effect on Flexibility, Coordination, Equilibrium, Stamina, and Strength

The fifth research article, by Gharote, investigated the effect of 3 weeks of yoga on physical fitness in 27 male and 12 female subjects.¹⁰ The male subjects performed 8 tests related to physical fitness both before the study and after a yoga training period of 3 weeks. These included extent flexibility, dynamic flexibility, soft ball throw for explosive strength, pull ups for dynamic strength, leg lifts for trunk strength, cable jump for coordination, balance for equilibrium, and a 600 yard run for stamina. The female subjects performed 4 tests related to physical fitness both before and after the study. These included extent flexibility, dynamic flexibility, leg lifts for trunk strength, and balance for equilibrium. A fitness index score was determined by dividing the total index points a subject obtained by the number of tests given and then multiplying this value by 10.

The results indicate a mean increase of 7.74 on the fitness index for the males and 11.75 for the females.¹⁰ There are

several limitations present in this study. They include the males and females performing a different number of tests, not explaining what each test entailed, not explaining how each test was measured, and not explaining how total index points were achieved during the performance of each test. Also, the duration of this study was relatively short, thus decreasing its effectiveness. The clinical significance of this study for physical therapists is that yoga should be considered an option to achieve the general goal of physical fitness improvement. Clients in the orthopaedic physical therapy clinic with a diagnosis such as osteoarthritis, where extra body weight and poor physical fitness are detrimental to the disease process progression, would greatly benefit from this proposed effect of yoga.

Yogic Meditation and Balance

The sixth research article, by Dhume et al, examined the effect of yogic meditation on balance.¹¹ The medical student subjects were divided into 3 groups of 6 including a yoga group, an amphetamine group, and a control group. The amphetamine group was chosen for its perceived positive impact on concentration. The yoga group was trained in yogic meditation, the amphetamine group received 5 mg oral capsules of amphetamine during the first 5 days and 10 mg on the last 5 days, and the control group received a placebo capsule. The research period lasted for 10 consecutive days and the amphetamine and placebo were given to the subjects 1 hour before trial on the balance board. Each subject's ability to balance on the balance board for a period of time greater than 5 seconds, with 2 trials attempted, was recorded daily.

The results were quantified by assigning an error score, which was the number of times the balance board contacted the floor, as well as balance time to determine the balance index. The balance index was the sum of all the balance times and the longest balance time, in seconds, divided by the error score, plus 60. The optimal balance score equated to 10 after achieving a continuous 5 minutes on the balance board without committing a single error. The yogic meditators balance index performance rose 27.8% as compared to the control group, while the amphetamine group declined by 40.6% in their balance index at the conclusion of the 10 days. The yogic group increased learning each day with their scores steadily improving throughout the study, whereas the drug and placebo groups hit plateaus and performance did not show consistent

improvement. These results show that yoga may have a positive impact on task performance and concentration related to balance.¹¹

Limitations of this study include the short duration of the research period and the small population studied. Although this study was comparing the effects of yoga and amphetamine usage on balance, the improvement of scores in the yoga group compared to the control group allows extrapolation into the general population. Further research should be performed before yoga is used as a definitive means for improving balance in the clinic.

Yoga's Effect on Flexibility

The seventh and last research study, by Dhanaraj, was reviewed by Funderburk.¹² Flexibility was measured in 51 male college students prior to the initiation of training. The subjects were randomly divided into a yoga group, a 5BX Program for Physical Fitness group, and a control group. The yoga group underwent 15 minutes of asanas and 2 minutes of pranayama in their training. The 5BX training consisted of 11 minutes for the 5BX assigned exercises and 4 minutes of additional exercises, which were not described. The control group received no exercise training and maintained their usual level of physical activity. After the 6 weeks of training, the study concluded with flexibility measurements using the Wells Sit-and-Reach Test. In this test, the subject sits on the floor and reaches forward slowly toward their toes. A measuring stick is used to score the test. The yoga group was also measured again 6 weeks after the conclusion of the study to determine the effects of detraining on flexibility.

The results indicate that both the yoga and the 5BX groups showed an increase in flexibility, with the yoga group achieving a higher magnitude of increase. The results of the detraining period of the yoga group illustrated a significant decrease in flexibility from the previous gains.¹²

Only a review of this research study could be obtained, which was a weakness because the review provided poor operational definitions, such as a description of the 5BX sequence of exercises or the additional exercises performed. The yoga group performed both asanas and pranayama in accordance with Hatha Yoga; however, this makes it unclear whether the results of this study are specifically attributable to postures, breathing, or both. This lack of specificity in describing the independent variable

is a consistent weakness in many yoga research studies. Lastly, as was the case for all of the previously reviewed research reports, the subjects were homogeneously young. Further research on an older population is merited.

The clinical implication of this study is that yoga should be considered an option for increasing the flexibility of clients. Almost every client in the orthopaedic clinical setting can benefit from improved flexibility to achieve his or her physical therapy goals.

YOGA WITH SPECIFIC POPULATIONS

As the above research has shown, yoga has the potential to be integrated into a variety of client rehabilitation regimes. There are also a number of specific client diagnoses that have been individually investigated and have demonstrated improved function through yoga practice. These diagnoses include carpal tunnel syndrome, epilepsy, multiple sclerosis, asthma, chronic fatigue, diabetes, cancer, and osteoarthritis.¹⁵ These client populations should give the orthopaedic physical therapist an idea of possible client diagnoses that have the potential to benefit from the integration of yoga into their rehabilitation programs.

CONCLUSION

Collectively, these studies demonstrate that yoga positively affects the physiology of the body, thus encouraging further research. The major collective limitations of these studies include selecting a small and homogenous sample, lack of specificity in describing the independent and dependent variables, and using nondescriptive measures. A longitudinal analysis of a large, nonhomogenous population with improved operational definitions is recommended for future investigations to achieve more scientifically rigorous results, and enhance effective translation into physical therapy clinical practice.

More rigorous scientific applications in future research will provide reliable results to support external validity for translation into clinical practice. The studies presented in this paper, however, should provide the orthopaedic physical therapist with the initial foundation of knowledge to begin to appropriately determine which clients may benefit from the integration of yoga into their rehabilitation programs. It is the hope of the author that the orthopaedic physical therapist will become further educated on yoga to achieve the most optimal outcomes for every client through evidence-based practice. Clinically, yoga may serve

as an effective adjunct to more traditional therapeutic regimes. The physical therapist has the responsibility to consider which clients may benefit from yoga based on the accomplishment of desired goals. The orthopaedic client diagnoses mentioned throughout this paper are just a few of the numerous potential implications for yoga in the therapeutic realm. Yoga allows clients to take an active role in their rehabilitation and has exciting promise in the future of physical therapy.

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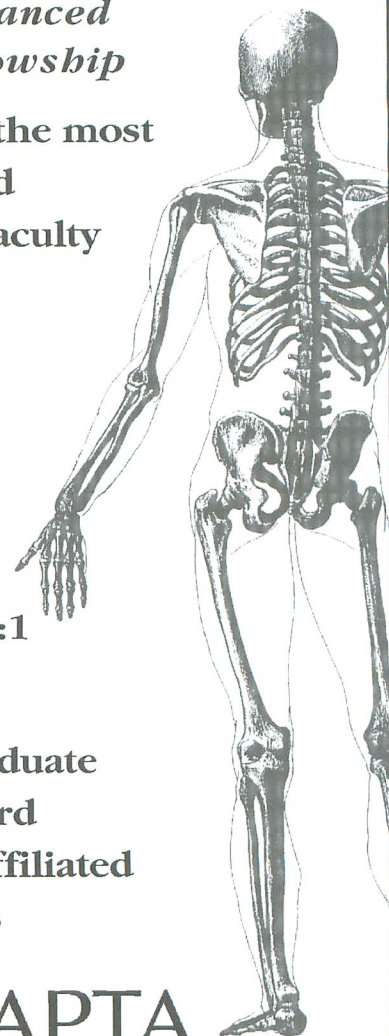
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Occurrence of Low Back Pain Among Players of Capoeira: The Brazilian Martial Art

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INTRODUCTION

Low back pain (LBP) is a common condition observed in both athletes and non-athletes. It is second only to the common cold as a reason to visit a primary care physician, and its direct medical costs exceed \$25 billion per year.¹ An estimated 80% of the population suffer at least one episode of LBP in their lifetime, and in as many as 50% of the cases, the problem will recur within the following 3 years.² Those participating in sports often have an even higher incidence,^{3,4} and for dancers, the estimated prevalence of LBP is approximately 12% of all injuries.⁵ In more aggressive sports, the incidence of LBP increases dramatically.^{6,7} For example, LBP was found among 68% of judo champions,⁸ and in a prospective study involving 7 national teams of rhythmic gymnastics, the presence of back pain complaints were documented among 86% of the gymnasts.⁹

One form of dance that has increased in popularity recently is a traditional form of African-Brazilian martial art called *capoeira*. Historically, *capoeira* was used by enslaved Africans in Brazil as a weapon of resistance against their oppressors in the 1800s. It was outlawed by the Brazilian Republic's first constitution and practiced in secret for more than 40 years.¹⁰⁻¹³ Over the past 50 years, *capoeira* has grown even more popular in Brazil and in other nations. It was recognized as the national sport of Brazil and has also been incorporated in many social projects as an instrument of education and socialization.¹⁴ In Brazil as part of the culture, there is *capoeira* in elementary schools, universities, clubs, and military academies.¹⁵

Capoeira has developed into a ritual activity and takes place in a circular area called *roda*. Inside the circle, two *capoeiristas* interact with each other performing offensive and defensive movements, sweepings, handstands, cart-

wheels, spinning kicks, flips, and spontaneous acrobatics. The music has an essential role in the ritual, as the rhythm of the instruments dictates the pace and the type of the game to be performed. According to a *capoeira* scholar,¹⁶ "the objective of the game is for the *capoeirista* to use finesse, guile, and technique to maneuver one another into a defenseless position, rendering them open to a blow, kick, or sweep. Only one's hands, head, and feet are allowed to touch the floor. Being swept and landing on one's bottom disqualifies a player. All strikes, evasions, and counterstrikes are woven together creatively as the game progresses."

“
The objective of the game is for the *capoeirista* to use finesse, guile, and technique to maneuver one another into a defenseless position, rendering them open to a blow, kick, or sweep.
”

Although there are no studies reporting the incidence of LBP or other injuries among *capoeira* players, in 1996 the Department of Sports Medicine of São Paulo *Capoeira's* Federation released a report alerting the public to the risk of injuries to the spine, knees, and wrists during the practice of this sport.¹⁷ Therefore, since no prevalence data has been collected in this area and with the increasing popularity of the sport and the risk of injury during its practice, the development of research involving *capoeira* practice is needed.

The purposes of this study were: (1) to establish the prevalence of LBP among *capoeira* players; (2) to correlate LBP with gender, age, years of practice of the sport, hours-training per week, utilization of stretching exercises, and the practice of physical activities other than *capoeira*; and (3) based on biomechanical studies, to demonstrate the risk of injury to the low back by describing 5 common movements in *capoeira*.

METHODS

Subjects

Capoeira players residing in different regions of Brazil and affiliated with the *Capoeira Gerais* Association¹⁸ were asked to participate in this study. The participants were approached between March and May 2000 at a National Annual meeting of the *Capoeira Gerais* Association and at their training place. They entered the study voluntarily after providing oral informed consent.

Data Collection

A survey containing 10 close-ended questions and 1 open-ended question was developed. See Appendix A. This questionnaire content included the following topics: age; gender; presence and location of LBP; form of treatment (if any); type of *capoeira* practiced (fast/slow); years of practice; number of hours of training per week; utilization of stretching exercises prior to the game; and practice of a different kind of sport activity. The open-ended question requested that the *capoeira* players relate their back pain with the practice of *capoeira*.

Statistical Analysis

Descriptive statistics were used to characterize the participants. The binomial test was employed to determine whether a significant proportion of participants complained of LBP. The Kruskal-Wallis test was used to determine the existence of a significant relationship between age and presence of LBP. The Fisher Exact test was used to determine the relationship between the subjects with or without LBP and the variables of interest. The Cochran's test was used to determine whether significant differences existed between other variables. Alpha was set at 0.05 for all analyses.

RESULTS

Ninety-seven *capoeira* players were interviewed, 41 (42.3%) females and 56 (57.7%) males. Their mean age was 22.4 ± 5.3 years, ranging from 13 to 52 years. The number of subjects who complained of LBP [81 (83.5%)] was higher than the number of patients without pain [16

(16.5%)] ($p < 0.001$), yet the mean age between these 2 groups was not different ($p = 0.165$). See Table 1.

There was no significant difference between those with LBP and those without in terms of the practice of other types of sports or utilization of stretching exercises. However, there was a significant difference between those with and without LBP across gender. See Table 2.

For those with LBP, Table 3 demonstrates the location and occurrence of the pain and whether treatment was received. Ninety-two persons indicated the lumbar area as the site of pain. Over half reported pain during and following their training and nearly 68% of those with pain reported not receiving any medical treatment.

DISCUSSION

The main objective of this study was to provide a preliminary characterization of the *capoeira* game and its association with LBP. This form of martial art involves

a sophisticated use of the body and complex sequences of movements. These movements are often performed in postures that are biomechanically challenging for the spine. Saltzberg et al¹⁹ studied human postural adaptations when initially learning new movements. In their study, the novices were taught a *capoeira* kick because it was considered a movement that involved both the upper and lower body at a high level of balance and coordination activity. They observed that the novices gradually changed the initial posture in order to facilitate both the postural adjustments and the accuracy of the kick and that the movement of the arms, trunk, and legs were used to dynamically counterbalance one another.

The results of the current study demonstrated that LBP is highly prevalent among *capoeira* practitioners (83.5%). This prevalence is similar to the one observed among professional rhythmic gymnasts.⁹ Even though it was not the objective of this study to establish a

causal relationship between LBP and *capoeira*, a closer analysis of the primary 5 movements may provide rationale for the high prevalence of injury. Each movement represents a different stress on the spine, which may include spinal axial rotation, hyperextension, rotation combined with flexion, direct trauma or sustained anterior trunk inclination.

The first movement learned in *capoeira* is called *ginga* (Figure 1). It is the most common and is used as a transition from one movement to another. During the *ginga*, the trunk is sustained in a forward bent posture while the limbs keep alternating positions and weight bearing from side to side. A flexion moment is created at the spine by the action of gravity on the trunk mass, and the back muscles are required to perform an isometric contraction to sustain this position. A recent study evaluated the correlation between intramuscular pressure and tissue oxygenation of the paravertebral muscles in response to isometric contractions.²⁰ The authors found an initial decrease in the oxygenation of the muscles at 30-40 mm Hg pressure level, which corresponded to 20% of maximal voluntary contraction. Another study that focused on multifidus EMG activity determined that static flexion of the lumbar spine is extremely imposing on the function of viscoelastic tissues. It can result in muscular spasms and require long periods of rest before normal function can be re-established.²¹

A second movement used in *capoeira* is a kick that requires axial rotation of the spine (Figure 2). This twisting movement may lead to torsion forces through the intervertebral discs or impaction of the zygapophyseal joints. During this complex combination of movements, the impacted facets sustain both torsion and lateral shear forces, and the capsule of the opposite zygapophyseal joint can be overstretched. Failure of any one of these elements can occur if the rotary force is sufficiently strong. Lesions that may occur include tears or avulsions of the capsule or circumferential tears in the outer annulus.²²

The *meia-lua de compasso* (Figure 3) is a complex movement that involves a combination of anterior flexion, lateral bending, and axial rotation. It is known that the risk of injury to the disc is greater if rotation is undertaken in flexion, since flexion *prestresses* the annulus to a near maximal extent, and the added rotation can take the collagen fibers of the annulus beyond their normal strain limit.²²

Figure 4 depicts the movement called *macaco*, which is characterized by hyper-

Table 1. Characterization of the Subjects According to the Occurrence of Back Pain and Age

Back pain	n	p value*	Variable	Descriptive measures				p value**
				Min	Max	Mean	SD	
Yes	81	<0.001	Age	13.0	52.0	22.2	5.4	0.165
No	16			18.0	33.0	23.6	4.5	

* Binomial Test, alpha set at 0.05.
** Kruskal-Wallis Test, alpha set at 0.05.

Table 2. Presence of Back Pain in Relation to the Variables of Interest

Variable	Back pain		P*
	Yes n(%)	No n(%)	
Gender			0.001
Male	41 (73.2)	15 (26.8)	
Female	40 (97.6)	1 (2.4)	
Practice of a different kind of sports activity			ns
Yes	53 (80.3)	13 (19.7)	
No	28 (90.3)	3 (9.7)	
Utilization of stretching exercises			ns
Yes	72 (83.7)	14 (16.3)	
No	9 (81.8)	2 (18.2)	

* Fisher's Exact Test, alpha set at 0.05.

Table 3. Frequency Table of Those with Back Pain for the Variables Location, Occurrence, and Treatment

Variable	Outcome	Frequency n (%)	P value
Location of the back pain	Cervical	8 (9.9)	<0.001**
	Thoracic	8 (9.9)	
	Lumbar	75 (92.6)	
	lumbosacral	8 (9.9)	
Occurrence of back pain	At rest	21 (25.9)	<0.001**
	During the training	43 (53.1)	
	Up to 24hs after training	54 (66.7)	
Treatment	Yes	26 (32.1)	0.002
	No	55 (67.9)	

** Cochran Test, alpha set at 0.05.

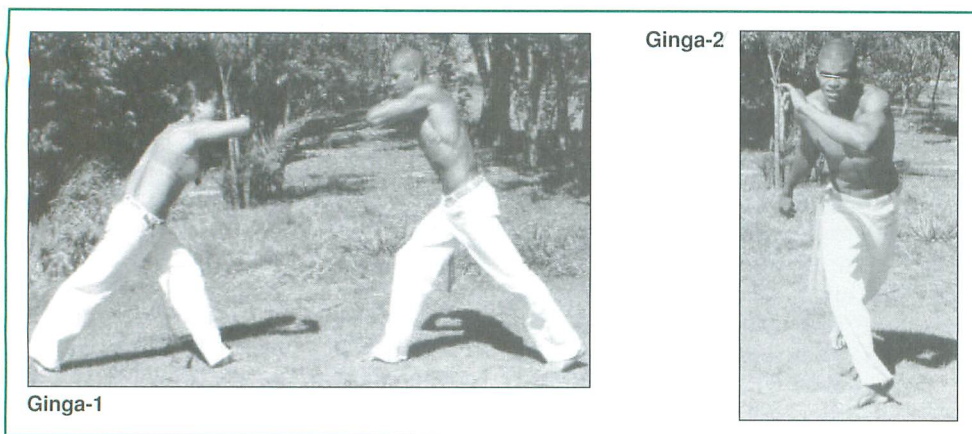


Figure 1. Ginga

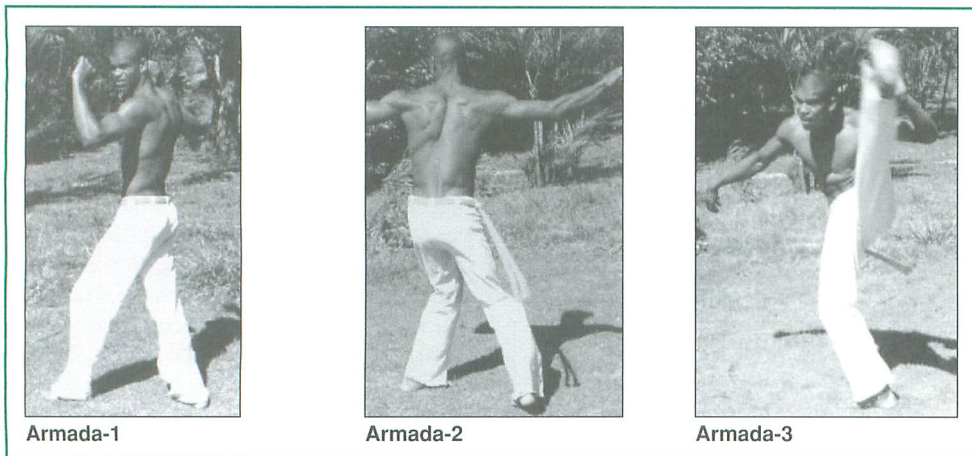


Figure 2. Armada

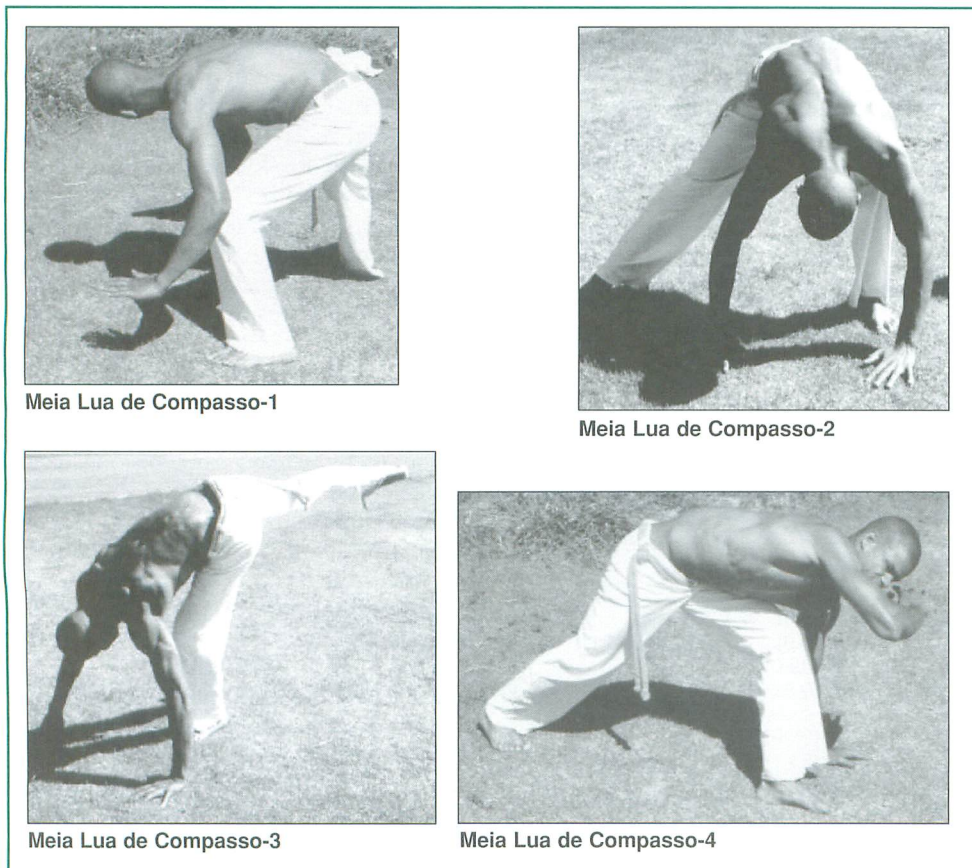


Figure 3. Meia Lua de Compasso

extension of the spine. It is similar to the flip-over movement used in gymnastics. During this kind of maneuver the range of extension is not only limited by ligamentous tension, but it ceases when either the two inferior articular processes at any level are forced against the laminae of the vertebrae below or when the spinous processes abut each other.²³ Mannor and Lindenfeld,²⁴ in a study on spinal process apophysitis in gymnasts, suggested that the occurrence of apophysitis of the spinous process is due to hyperextension impaction during landing or traction from violent and repetitive maneuvers during the gymnasts' growth spurt.

A direct trauma is illustrated in Figure 5. This may result in fractures or other macro-traumas. In this movement called *rasteira*, one player is "swept" by the other, leading to a fall on the buttocks. Manning and Shannon,²⁵ in a study on slipping accidents, indicated that the lumbosacral region was by far the most common part of the body injured.

The etiology of the LBP of the participants in this study cannot be determined since no physical examination or diagnostic imaging was completed. However, the data collected and the dynamics of the movements performed support suggestions alluding to the possible causes of LBP. Sward et al⁴ in their study with Swedish top athletes, examined anthropometrics characteristics, passive hip flexion, and spinal mobility and its relation to LBP in 116 athletes representing 4 different sports (wrestling, gymnastics, soccer, and tennis). They found that a small sacral inclination correlated significantly with LBP. According to DeMann,⁵ sacroiliac (SI) dysfunction is one of the most common causes of LBP among dancers. He stated that the etiology of SI dysfunction in dancers is related to both the biomechanics of the SI joint and the physiological demands placed on the joint from the dynamics of dance. Studies that focus on spondylolysis as a cause of LBP in athletes often relate it to sports that involve repeated extension and overloading of the posterior elements of the lumbar spine, such as gymnastics, weight lifting, and wrestling.^{5,24} In these cases, the injury mechanism would be a fatigue failure of the overloaded neural arches caused by repetitive flexion and hyperextension movements.⁵ The high impact and load that the movements of *capoeira* impose on the low back may, over years of practice, cause degenerative alterations to the spine components. However, as our sample includes only young people, these alterations may not be found.

Different studies have suggested that back problems appear to result not only from single episodes of macrotrauma, but also from repeated microtraumas caused by specific impact loads.¹⁶ Repetitive movements can fatigue the supporting structures of the lumbar spine and overwhelm the viscoelastic protective mechanism of the intervertebral discs and ligaments.¹ The *capoeira* movements are performed in a very high frequency in order to obtain the adequate motor control and agility required in the game, exposing the spine to repetitive stress.

We expected that the practice of other physical activities and the utilization of stretching exercises were variables that could either influence the results by selecting subjects in better physical condition, or expose them to additional risks of injury. However, a correlation between these additional activities and LBP was not found in the current study. In spite of this, we believe that a more precise description of the way these activities are performed might bring information for further discussion.

One interesting finding in our study was that more females complained about LBP than males. In a 3-year longitudinal study correlating lumbar mobility and LBP during adolescence, the authors found that the predictors for LBP were different between boys and girls.²⁶ Among girls, decreased range of motion in the lower lumbar segments, decreased maximal lumbar extension, and increased body weight at baseline were predictors of LBP. Conversely, for boys the predictors were participation in sports and decreased maximal lumbar flexion at the baseline. Since no impairment measures were taken in the current study, we cannot establish this kind of relationship. Although males and females often perform the same movements in *capoeira*, women tend to have less muscular strength than men and this fact might explain the higher incidence of LBP in the female group. Participants' comments suggest that the major cause of the LBP in the population studied was due to muscle fatigue, spasms, or sprain. First, when the subjects were asked to explain why they had assumed that their pain resulted from practicing *capoeira*, 36 individuals related their pain to the *ginga* movement (Figure 1), the one which requires isometric contraction of the paravertebral muscles and is also the most frequently used. Second, a significant number of subjects reported that their pain occurred during the training and/or up to 24 hours after the training, which may be a result of muscle fatigue. Finally, we found that 67.9% of

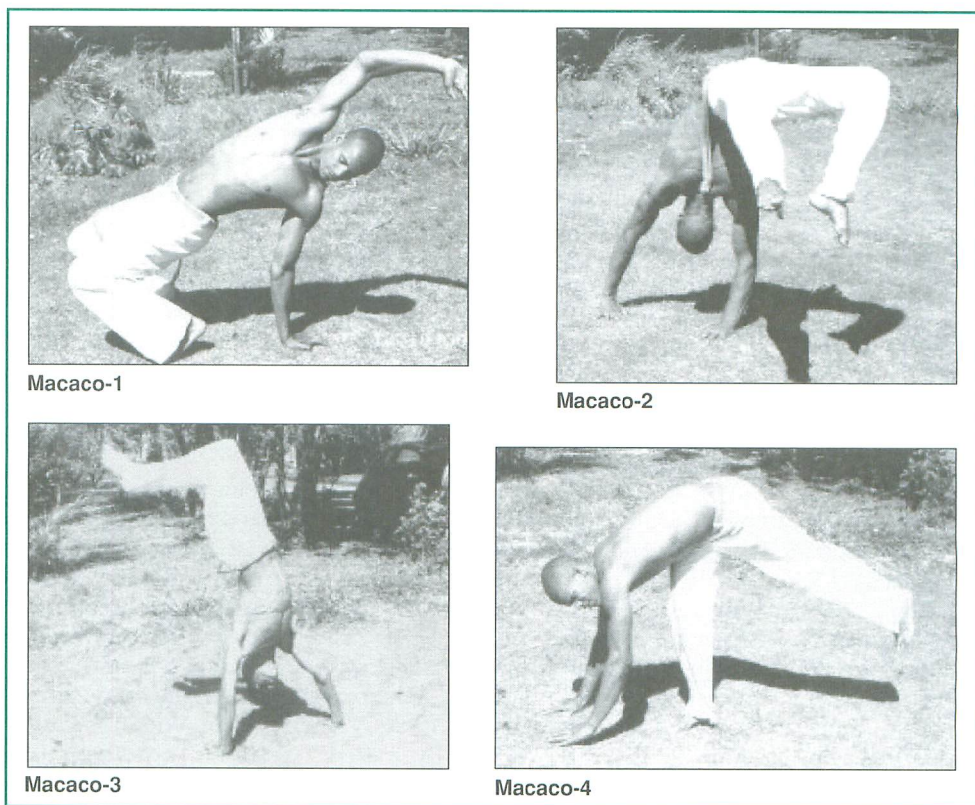


Figure 4. Macaco

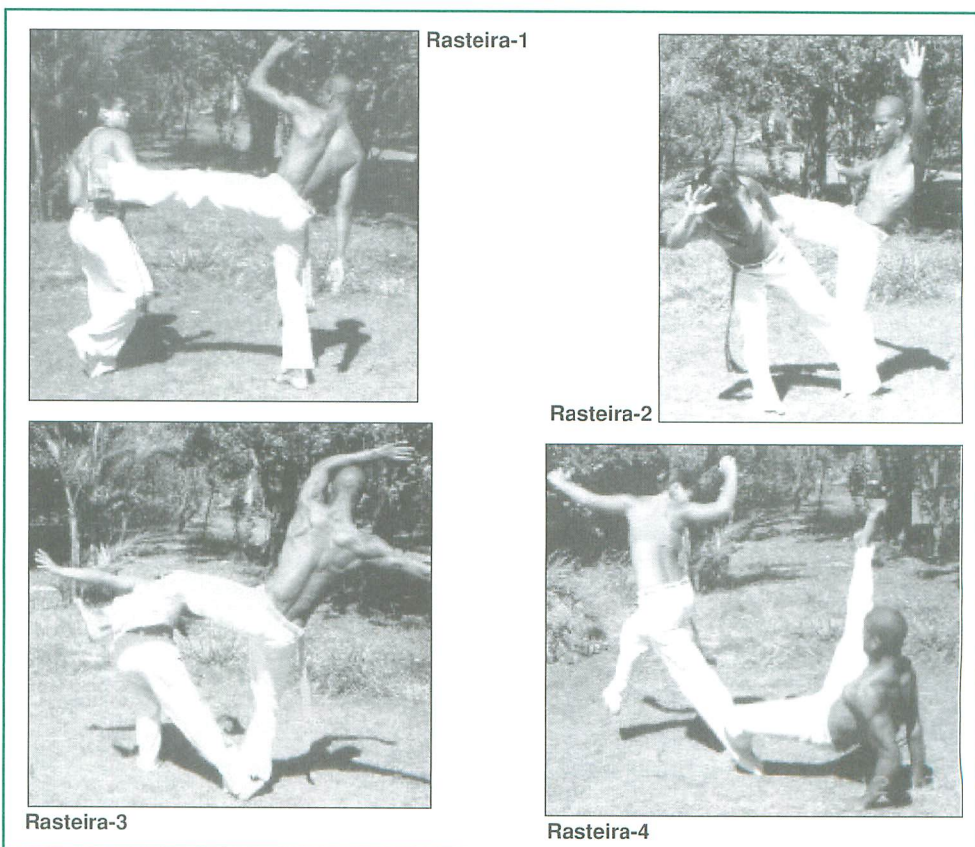


Figure 5. Rasteira

the subjects who complained of LBP did not seek any kind of treatment. This last information suggests that the pain was minimal or so transient that the subjects did not need to seek medical care.

CONCLUSION

Low back pain is a common problem among *capoeira* players. The complex movement dynamics of *capoeira* might contribute to these injuries. A higher

prevalence of LBP occurred among the female group. This study indicated that LBP among *capoeira* players might be associated with muscle overload; however, future research is necessary to establish this assumption. Physical examination, a more precise analysis of the movements, inclusion of diagnostic imaging, and the development of a preventive program are possible future research topics.

ACKNOWLEDGMENT

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Appendix A. QUESTIONNAIRE

CODE:

DATE OF BIRTH:

GENDER: M() F()

1- HOW LONG HAVE YOU BEEN PRACTICING CAPOEIRA?

- 1 YEAR OR LESS
- BETWEEN 1 AND 3 YEARS
- BETWEEN 3 AND 6 YEARS
- BETWEEN 6 AND 9 YEARS
- MORE THAN 9 YEARS

2- HOW MANY HOURS PER WEEK DO YOU PRACTICE CAPOEIRA?

- 2 HOURS OR LESS
- BETWEEN 2 AND 4 HOURS
- BETWEEN 4 AND 6 HOURS
- BETWEEN 6 AND 8 HOURS
- MORE THAN 8 HOURS

3- THE STYLE OF CAPOEIRA YOU PRACTICE IS:

- CAPOEIRA REGIONAL
- CAPOEIRA ANGOLA
- BOTH

4- DO YOU PRACTICE ANY OTHER KIND OF SPORTS ACTIVITY BESIDES CAPOEIRA?

- YES - PLEASE SPECIFY _____
- NO

5- DO YOU UTILIZE STRETCHING EXERCISES AT LEAST TWICE A WEEK?

- YES
- NO

6- HAVE YOU EVER COMPLAINED OF BACK PAIN RELATED TO THE PRACTICE OF CAPOEIRA?

- YES
- NO

7- IF YOU ANSWERED "YES" TO THE PREVIOUS QUESTION, PLEASE MARK THE LOCATION OF THE PAIN IN YOUR BACK:

- CERVICAL
- THORACIC
- LUMBAR
- LUMBOSSACRAL TRANSITION

8- WHEN DID THE PAIN OCCUR?

- AT REST
- DURING THE TRAINING
- UP TO 24Hs AFTER TRAINING

9- DID YOU RECEIVE ANY KIND OF TREATMENT FOR YOUR BACK PAIN?

- YES
- NO

10- IF YOU ANSWERED "YES" TO THE PREVIOUS QUESTION, PLEASE SPECIFY THE TREATMENT:

- MEDICAL
- PHYSICAL THERAPY
- OTHER _____

11- WHAT MAKES YOU BELIEVE THAT YOUR BACK PAIN IS DIRECTLY RELATED TO THE PRACTICE OF CAPOEIRA?

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- 11.2.2 Patient Examination—*Deborah Stetts, PT, OCS, FAAOMPT*
- 11.2.3-4 Lumbopelvic Region (2 monographs) —*Peter Huijbregts, DPT, OCS, FAAOMPT*
- 11.2.5 Thoracic Spine and Chest Wall —*Timothy W. Flynn, PT, PhD, OCS, FAAOMPT*
- 11.2.6 Shoulder—*Lori Thein Brody, PT, MS, SCS, ATC*
- 11.2.7 Elbow—*Jeff Ryan, PT, ATC*
- 11.2.8 Wrist & Hand—*Carolyn Wadsworth, PT, MS, OCS, CHT*
- 11.2.9 Cervical Spine—*Richard Walsh, PT, DHSc, OCS, FAAOMPT and Arthur Nitz, PT, PhD, OCS, ECS*
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Letter to the Editor

I would like to respond to the article, "Spinal Manipulation and Patient Informed Consent in Orthopedic Physical Therapy" by Ron Scott, JD, LL.M., MSBA, MSPT, OCS in *Orthopaedic Physical Therapy Practice*, Vol. 13, No.4. In the article Mr. Scott suggested that physical therapists should always document that they have gotten informed consent from a patient before performing spinal manipulation. He even suggested having patients take and sign a multiple-choice quiz to demonstrate that they had been duly informed.

During the past year I reviewed the issue in response to concerns about required informed consent that were raised by members of the Arizona Physical Therapy Association and by several hospital risk managers and their attorneys. As an APTA Chapter President, and as a physical therapist often called upon as an expert witness in malpractice cases, I felt I had to explore this further. Recognizing that legal opinions are only that, opinions, that they often vary from one legal expert to another, and that they carry no weight until tested in a court of law and upheld on appeal, I consulted several lawyers who are involved in malpractice litigation. In addition I looked at other interventions in health care that do and do not require informed consent and compared them with physical therapy interventions. I also reviewed some standard informed consent documents.

Three years ago, the State of Arizona adopted rules that included a call for informed consent that was quite similar to the description of informed consent then found in many APTA documents. That rule read:

C. A physical therapist shall obtain a patient's informed consent before treatment. The consent shall be in writing or documented in the patient chart and include:

1. The nature of the proposed intervention,
2. Material risk of harm or complication,
3. A reasonable alternative to the proposed intervention, and
4. The goal of treatment.

Physical therapists, risk managers, and attorneys questioned whether the whole concept of informed consent, as used in medicine, really applied to the practice of physical therapy. They thought that the policy on informed consent was unreasonable and impractical. They suggested

that perhaps we had artificially created a standard where no standard in practice existed or needed to exist. Essentially they were saying that it was quite possible that the term "**informed consent**" and its intent did not apply to the interventions we use in physical therapy.

Following my review, I came to the conclusion that those who were questioning the concept of informed consent for physical therapy were probably correct. We were creating an artificial standard. Informed consent is probably not required for physical therapy interventions.

The concept of "**informed consent**" is that patients, lay people, who are about to get healthcare should be made aware of any substantial risks they are facing and that based on a knowledge of those risks should be able to either consent to or refuse care. There is certainly other information, besides risk, the patient should be aware of, such as the diagnosis, prognosis, and the purpose of the intervention. All of those are secondary to the general concept of patients being allowed to make sure that if they are putting themselves in harm's way, they know about it and have a right to knowledgeably refuse to do so or to knowledgeably accept the risk and participate in care.

In physical therapy, there is nothing that we do that presents a substantial risk of material harm or complication. I suspect the terminology "material risk," and for that matter "informed consent," is borrowed from medicine where many procedures do have a significant risk factor that a patient should be made aware. Doctors though, only inform patients, and document that act of informing, for risks that are likely to materialize about 1 in 100,000 (1:100,000) times or less. They don't often warn patients of complications that are less likely to happen.

For example a doctor would not warn a patient about the risk of infection from a routine injection and would not chart that the patient was advised that an infection could occur. The risk is too low even though the consequences can be quite high if the risk is realized. The patient consents to the procedure merely by allowing the doctor to do it.

Likewise, a dentist does not list for the patient all of the possible complications of filling a cavity nor seek or document informed consent to do it. The patient being willing constitutes consent.

On the other hand, the doctor does warn the patient of any significant side effects, such as anaphylactic shock, from a particular injected medication because that happens more frequently than infection. The doctor gets and documents informed consent for that risk. The dentist uses anesthesia only after getting informed consent because the relatively high incidence of adverse effect. The negative consequences of all the interventions can be equally devastating but it is the likelihood of occurrence that dictates the need for documented informed consent for one of the procedures but not the other.

Historically in physical therapy, the highest risk intervention we have is putting a patient on hotpacks. The second most dangerous thing we do is walking a patient. Neither of these interventions has an injury per occurrence ratio as low as the medical and dental procedures that don't require informed consent. The chance of a patient getting burned is less than one in one hundred thousand to less than one in one million (1:100,000/1,000,000). The chance of a patient falling and being injured during gait training is even less than that.

When we put patients on hotpacks we tell them why we are doing it and what to expect. We advise them that they should not let the hotpack get too hot because it could burn them, and to ring to let us know if they are having some discomfort so that they can be repositioned. In doing so we are certainly informing the patient of what they have to do to participate in their care and maximize the benefit of physical therapy but we are not saying, "You could get burned by the hotpack. Are you sure you want to be put on the hotpack?" We certainly are not expected to document those instructions to the patient. That is just routine standard care. The competent patient allowing the use of the hotpack is giving consent.

With gait training we do not say to the patient, "If we take you for a walk, there is always a chance that you could fall and break your hip. Are you sure you want us to take you for a walk?" The patient's willing participation in the intervention is consent enough even without being informed of the remote risk. No documentation of consent is expected or required.

Manipulative procedures in physical therapy do not present a high enough

incidence of risk materializing for us to obtain informed consent with documentation. Studies show that complications from manipulation, even high velocity thrust techniques to the upper cervical spine, occur well less than one in one million (1:1,000,000) times and such low risk does not warrant getting and documenting informed consent. Certainly we should explain to the patient what we are about to do and tell the patient what he or she has to do to cooperate with the treatment. Manipulating a patient, or doing any other intervention, without telling the patient what you are going to do first could be considered an assault. We have to inform the patient about what we are doing but there is no need to say to the patient, "There is a possibility that you could be paralyzed by this procedure. Is it all right for me to proceed? If so please sign on the dotted line."

Another area of concern is the requirement to advise the patient of "reasonable alternatives" to the proposed intervention. The need to know about reasonable alternatives to surgery, where the incidence of irreversible harm is significantly higher, has a different connotation than the need to know about alternatives to physical therapy? Are we to tell patients that they might want to consider seeing a chiropractor, or an athletic trainer or a massage therapist or going to a health club instead of physical therapy? Those could certainly be considered reasonable alternatives if we must search for some, but given the low risk of the physical therapy intervention there really is no legal need to offer such alternatives.

We would all agree that it is good physical therapy practice to inform the patient of our findings following the taking of a history and performing a physical examination; to advise the patient of the purpose of the plan of care; and to advise the patient of what their role in the entire process must be so that they can maximize the benefits of physical therapy.

Our patients should be informed and educated by us. This act of informing is however not necessarily tied in with the concept of informed consent.

The problem we are facing is compounded by the requirement of some type of documentation about informed consent such as Mr. Scott suggests. It should be routine practice to inform the patient about all of the things we discussed above, absent the "material risk" and "alternative treatments." Given that it is standard practice, it would be redundant to have to document each time you see patients that you have informed them of your findings and the plan of care. Even more problematic would be having to document the same conversation each time the plan of care is changed or a new intervention, exercise, or type of ambulation or manipulation is added.

A number of hospital risk management departments looked over the terminology in question and looked at recommendations similar to Mr. Scott's and expressed grave concern that we were unnecessarily placing the departments and the physical therapists at risk based on this wording. They were going to have to create cumbersome documents that would have little value other than to enable them to jump through the legal hoops that had been created with the "informed consent" language and recommendations. There would be no increased benefit or protection for the patients.

Suggesting that obtaining documented "informed consent" is a standard of practice in physical therapy places an undue burden on physical therapists involved in malpractice litigation. I have seen plaintiffs' attorneys attempt to demonstrate that a physical therapist acted below the standard because there was no signed or documented informed consent in the chart even when the information given for consideration to consent would not have included information about the actual cause of damage in the case.

In one such case the patient died as a result of a pulmonary embolus thrown from the leg following tibial fracture. It did not occur during rehab. The physical therapist was not at fault. His care was appropriate. He was named in the suit along with every other caregiver. At that time, the APTA Guide for Professional Conduct did say that informed consent should be gotten and documented. Had the physical therapist gone through the motions of getting some type of informed consent it is unlikely he would have included the risk of thrown embolism in his statement of information to the patient. The plaintiff's attorney tried to cast the physical therapist as a bad physical therapist because informed consent was not documented. The attorney was just looking for anything he could find to hang the physical therapist. The case was dismissed despite the lack of informed consent. In this case, and in others I have seen, informed consent would not have been an issue at all if it were not mentioned in APTA documents as they read at the time. (The latest edition of the APTA Guide for Professional Conduct no longer suggests documented informed consent. Figure 1.)

Even Mr. Scott points out in his article that in the one case he was aware of, (*Spence v. Tadaro*) where lack of informed consent by a physical therapist was in question, the courts ruled that there was no duty for a physical therapist to obtain informed consent.

I discussed the issue with a retired superior court judge who had presided over malpractice cases and who does arbitration procedures. He felt that we had in fact created a standard where no standard in practice existed and as such placed ourselves at unnecessary risk. He made several suggestions for us.

He said we should first try to define "material risk" as it applies to physical therapy and give specific examples. He suspected that we would find no such

Principle 2.4 Patient Autonomy and Consent

- A. A physical therapist shall not restrict patients' freedom to select their provider of physical therapy.
- B. A physical therapist shall communicate to the patient/client the findings of his/her examination, evaluation, diagnosis, and prognosis.
- C. A physical therapist shall collaborate with the patient/client to establish the goals of treatment and the plan of care.
- D. A physical therapist shall inform the patient/client of the benefits, costs, and substantial risks (if any) of the recommended intervention and treatment alternatives.
- E. A physical therapist shall respect the patient's/client's right to make decisions regarding the recommended plan of care, including consent, modification, or refusal.

Issued by Ethics and Judicial Committee
American Physical Therapy Association
October 1981
Last Amended January 2001

Figure 1. APTA Guide for Professional Conduct

risks that rose to the level of requiring classical informed consent but that we should try anyway. He said we should give specific examples rather than be vague. He was correct. There are no such risks.

When I reviewed with him some of the informed consent documents that people told me they were using he advised me that they were "consent forms" but that they did not constitute "informed consent."

Many physical therapists may be under the mistaken impression that they are getting informed consent when they are not. This may subject them to increased exposure rather than decreased exposure in the event of a malpractice suit.

A physical therapist contacted me to let me know that she had no problem with getting informed consent in accordance with the old APTA policy. I asked her to let me know what "material risks" she informed her patients about and to send me a copy of the documentation she used. She sent me the following:

"(I'm) not quite sure what your asking when you state "material risks" however, below is the consent that we have each patient sign."

"I understand that I have been referred for physical therapy to XYZ Physical Therapy. XYZPT has described for me my individual treatment plan of care. I understand that I have the right to ask and have any questions answered prior to receiving any treatment including any risks or alternatives to the treatment plan that has been prescribed to me. By signing this agreement, I consent to have XYZPT provide treatment and care as prescribed by my physician and/or recommended by my therapist."

As you can see this well-meaning therapist did not know what constituted material risk and was in fact getting a document signed by the patient that, if anything, said I am giving uninformed consent. Can you imagine what a plaintiff's attorney would do with this? "Ms. PT, do you mean to tell this court that you were aware of certain risks but were only going to tell the patient about them if he asked? How was the patient even supposed to know to ask? You are below the standard."

It is helpful to put this in perspective if we look at an example of what doctors and hospitals do with informed consent versus giving information and having a patient consent to treatment. Lets look at two documents given out by hospitals and

doctors for an invasive procedure, a colonoscopy. The first is an informed consent form (Figure 2). The second is a discharge instruction sheet that is given to the patient after the procedure (Figure 3).

In reviewing the forms you will see that the informed consent form only lists those risks that are likely to happen often (1:1000 times and 2:1000 times). For those there is a clear need for informed consent.

The discharge instructions list many more things that the patient might encounter, all of which are far more likely to occur than risks a patient would encounter from any physical therapy intervention. The physician and hospital inform the patient about all of these after the procedure. There is need for information to go to the patient but not need for informed consent.

Certainly, a physical therapist has to respect a patient's rights but informed consent, as used in medicine and dentistry and as recommended by Mr. Scott, is probably not necessary. The physical therapist should advise patients about the findings of the examination, the diagnosis and prognosis if any, the goals of treatment and plan of care and what the patient has to do to maximize the benefits of physical therapy by being an active participant in the care. The physical therapist should always remember that a patient has the right to refuse any or all of the care outlined.

In other words, good practice does demand that the patient be "informed" and that the patient does have the right to "consent" to or refuse treatment. Putting the two words together puts them out of context. The "informed" and "consent" in this context are not the same as, and do not constitute, "informed consent" as it applies to truly high-risk procedures.

The danger in this misguided call for getting and documenting informed consent is that it increases the exposure to risk for physical therapists in the unlikely event that a patient is injured during a physical therapy procedure, whether it is from a hot pack, a fall, or manipulation. A statement in the patient's chart, signed or unsigned, would probably not be helpful in a malpractice case. Unless the statement specifically listed the exact possibility that caused the harm and the exact injury that resulted, a patient could easily claim that he or she was not informed. Given the nature of the few malpractice suits in physical therapy it is unlikely that the exact risk would be listed. To make matters worse, the patient could then state that had he or she known of the

possibility of that particular unlisted bad outcome he or she would have refused to undergo the intervention. The documentation could backfire and hurt the case.

We should also remember that even informed consent does not free the practitioner of liability in the case of true malpractice. Informed consent only protects the practitioner in the event that a bad outcome, that is known to occasionally be the result of a given procedure, occurs in spite of the procedure being performed in accordance with acceptable standards of practice.

If a physical therapist were to apply an intervention like hot packs to an insensate area and the patient were to be burned, the physical therapist would be liable for malpractice even if informed consent was given and documented. A physical therapist who injured a patient by misapplying a manipulative procedure for whatever reason would be held liable whether informed consent was gotten or not. There is no excuse for malpractice and informed consent doesn't mitigate the damage.

On the other hand if a physical therapist could prove that all reasonable precautions were taken and that the manipulative procedure was applied properly and performed as well as it would have been by any other skilled, qualified physical therapist, but the patient had an adverse outcome anyway, the physical therapist would have a relatively good defense. Bad outcome does not necessarily constitute malpractice. This is not to say that the physical therapist would not get sued nor that the physical therapist would definitely win the case. Anything can happen in a court of law. The point is that informed consent wouldn't and shouldn't make any difference.

Now that the APTA Ethics and Judicial Committee has modified its position on informed consent and since the vast majority of practicing physical therapists, including orthopaedic manual physical therapists, do not go through the formal process of obtaining informed consent there is, in fact, no Standard of Practice calling for physical therapists to get informed consent prior to performing any procedure, including manipulation of the spine. Suggesting that physical therapists should do so might be placing us more at risk than need be. It raises a question where no question needs to be raised and that may well lead to wrong answers.

*Sincerely,
Philip Paul Tygiel, PT, MTC*

CARONDELET HEALTH CARE GASTROENTEROLOGY LABORATORY

**AGREEMENT AND CONSENT FOR: Colonoscopy with Biopsy
Colonoscopy with Polypectomy**

DO YOU HAVE ANY DRUG ALLERGIES? Yes _____ No _____

If yes, what are they?

Colonoscopy is a procedure in which a flexible optical instrument is passed through the anus into the large intestine or colon. This procedure provides important information about diseases that affect the colon.

To be performed by Dr. _____.

In experienced hands, colonoscopy has proved to be a safe and low risk procedure. The majority of patients who undergo colonoscopy have no complications whatsoever, however, since there are certain potential risks inherent in colonoscopy, these risks must be fully explained to you so that you will be able to give your informed consent and allow it to be performed.

1. The most common complication of colonoscopy is the accidental perforation of the examining instrument through the bowel wall. This rare complication may require emergency surgery to repair.
2. Bleeding may occur from passage of the instrument over portions of the bowel wall or from biopsies taken from the bowel wall. This bleeding is usually minor and requires no treatment, but in rare cases may be serious enough to require blood transfusion or surgery for control.
3. In the removal of a polyp via the colonoscope, perforation of the bowel or bleeding at the site of cauterization may occur and may require surgery for correction.
4. To facilitate passage of the instrument through the large bowel, medications are given intravenously. These medications may, in rare instances, cause mild to serious reactions. These may include changes in heart rate, blood pressure or respiration. Allergic reactions may occur, local inflammation of the vein at the site of injection may occur.

All of the complications mentioned above are very rare. The occurrence rate of any one complication in colonoscopy is approximately 1 in 1000, in polypectomy, 2 in 1000. Necessary equipment is maintained close at hand to properly manage any complications that may arise.

I consent to the performance of procedures in addition to those now contemplated arising from presently unforeseen conditions which the above named doctor or his associates or assistants may consider necessary in the course of the procedure. My signature at the bottom of this form indicates that I completely understand the reason for performing the procedure; that I am aware of and understand the potential risks involved; and all questions relating to the procedure have been answered to my satisfaction.

SIGNATURE

WITNESS

DATE

0069204 (R 6/92)

Figure 2.

ENDOSCOPY DISCHARGE INSTRUCTIONS

THE DIAGNOSTIC EXAMINATION/TREATMENT YOU HAVE JUST COMPLETED IS CALLED _____

THE PHYSICIAN WHO PERFORMED THE PROCEDURE IS _____ Phone _____

PLEASE CONTACT THIS DOCTOR OR YOUR FAMILY PHYSICIAN IF YOUR CONDITION IS GETTING WORSE, OR IF IT IS NOT IMPROVING, OR IF UNEXPECTED PROBLEMS DEVELOP, OR IF YOU HAVE ANY QUESTIONS.

ACTIVITY: ___ DO NOT DRIVE ANY MOTOR VEHICLES OR OPERATE ANY MACHINERY FOR AT LEAST 24 HOURS.
 ___ YOU MAY EXPERIENCE SOME DIZZINESS OR BALANCE PROBLEMS TODAY, RESUME YOUR NORMAL ACTIVITIES AT/ON: _____.

DIET: ___ YOU MAY BEGIN A LIGHT DIET AND PROGRESS TO YOUR NORMAL DIET UNLESS OTHERWISE STATED HERE:

MEDICATIONS: ___ CONTINUE SAME MEDICATION SCHEDULE AS BEFORE UNLESS OTHERWISE STATED HERE _____

 ___ DO NOT USE ANY ASPIRIN OR OTHER NONSTEROIDAL ANTI-INFLAMMATORY CONTAINING MEDICATIONS (I.E. IBUPROFEN, NAPROSYN) FOR ___ DAYS.

CALL PHYSICIANS OFFICE TO:

 ___ OBTAIN RESULTS OF PROCEDURE/BIOPSIES: CALL ON _____

 ___ MAKE FOLLOW UP APPOINTMENT FOR _____ DAYS/WEEKS

 ___ REPORT ANY SIGNS OF:

 INCREASING PAIN, NAUSEA, VOMITING NEW ABDOMINAL DISTENTION (SWELLING) FEVER (CHILLS)

FOLLOW THE SPECIAL PRECAUTIONS CHECKED BELOW:

 ___ YOU HAVE RECEIVED MEDICATION TO NUMB YOUR THROAT WHICH COULD INTERFERE WITH YOUR ABILITY TO SWALLOW, LIQUIDS SHOULD BE AVOIDED UNTIL YOUR THROAT IS NO LONGER NUMB.

 ___ YOU MAY GARGLE WITH WARM SALT WATER OR USE THROAT LOZENGES FOR A SORE THROAT.

 ___ DO NOT BE ALARMED IF YOU COUGH UP SMALL AMOUNTS OF BLOOD. HOWEVER, IF LARGE AMOUNTS OF BRIGHT RED BLOOD ARE PRODUCED, OR IF YOU EXPERIENCE SUDDEN SHORTNESS OF BREATH AND/OR CHEST PAIN CONTACT THE PHYSICIAN.

 ___ THE VEIN INTO WHICH THE MEDICATION HAS BEEN INJECTED MAY BECOME REDDENED AND/OR SORE. IF THIS OCCURS USE ICE FOR THE FIRST 24 HOURS AND THEN APPLY WARM, MOIST PACKS (WASH CLOTHS) FOUR TIMES A DAY FOR 2-3 DAYS. IF THE PROBLEM PERSISTS, CONTACT YOUR PHYSICIAN.

 ___ A FEELING OF FULLNESS OR CRAMPING FROM AIR REMAINING IN THE BOWEL IS NORMAL. MILD ACTIVITY WILL HELP YOU EXPEL THE AIR. SEVERE PAIN IS NOT USUALLY SEEN, BUT IF IT OCCURS, CONTACT YOUR PHYSICIAN.

 ___ IF YOU NOTICE BLOODY OR BLACK STOOLS, OR IF YOU HAVE PERSISTENT PAIN, CONTACT YOUR PHYSICIAN.

 ___ REFER TO THE POST POLYPECTOMY INFORMATION SHEET.

 ___ AVOID STRAINING WHEN HAVING A BOWEL MOVEMENT.

ADDITIONAL INSTRUCTIONS _____

INSTRUCTIONS RECEIVED AND UNDERSTOOD BY PATIENT OR RESPONSIBLE PERSON.

Patient or responsible person

date

staff signature/MD

Figure 2.



Book Reviews



Coordinated by Michael J. Wooden, PT, MS, OCS

Brinckmann P, Frobin W, Leivseth G. *Musculoskeletal Biomechanics*. New York, NY:Thieme; 2002, 243 pp, illus.

The aim of *Musculoskeletal Biomechanics* is to present accurately the lines of thought and procedures in orthopedic biomechanics, as well as the current state of knowledge of the mechanical effects on the human locomotor system. The intended audience for this book is primarily orthopedic surgeons and physical therapists.

Chapters 1 through 7 describe the fundamental aspects of biomechanics, including basic concepts from physics and mechanics, vector algebra, and material properties of solid materials. These chapters provide an excellent foundation for understanding the remaining chapters of the book.

Chapters 9 through 15 describe the mechanical aspects of the hip, knee, lumbar spine, and shoulder, as well as the mechanical properties of skeletal muscle, bone, and skin. The biomechanical principles presented in these chapters are comprehensive and clinically relevant. For example, the chapter written on the mechanical aspects of the lumbar spine includes many clinically relevant sections, including movement and loading of the lumbar spine through 2- and 3-dimensional models, the role of intra-abdominal pressure, recommendations for carrying and lifting, mechanical properties of the intervertebral discs, and the sequence of events that may lead to low back pain and disability.

Two rather comprehensive appendixes comprise the remainder of this book. Appendix A, which would be particularly useful for the practicing physical therapist, contains sections describing loading of the lumbar spine in sitting and standing, primary mechanical causes of lumbar disc injury, and the influence of physical activity on bone density. Appendix B primarily deals with the mathematical description of translation and rotation in a plane and in 3-dimensional space.

This book, which combines sound theory with applied biomechanical principles, is very well written and clinically applicable. Figures and tables are effectively used to complement the text. Up-to-date scientific references cited by the authors are included at the end of each chapter. This book is highly recommended for physical therapists that practice in an orthopedic setting and for courses in entry-level and postpro-

fessional physical therapy programs that discuss orthopedic biomechanics.

Michael D. Ross, PT, DHS, OCS



Robbins L (ed). *Clinical Care in the Rheumatic Diseases, 2nd ed*. Atlanta, Ga: American College of Rheumatology; 2001, 302 pp.

The second edition of *Clinical Care in the Rheumatic Diseases* is a valuable, updated resource for health professionals, rheumatologists, and primary care providers, developed by an impressive health care panel each of whom is a leader in his or her clinical discipline. As a comprehensive text encompassing the latest advancements in interdisciplinary management of rheumatic diseases, this edition is well organized and concise, including new information from innovations in treatment, to genetic coding, to new understanding of patient disease coping mechanisms. The text is an up-to-date educational resource for any health professional involved in diagnosing and treating patients with a wide variety of rheumatic conditions.

Compiling and publishing this soft cover resource text was a collaborative project between the Association of Rheumatology Professionals and the American College of Rheumatology, combining the efforts of over 60 authors from varied clinical disciplines and some 52 editorial contributors. The text has 44 chapters with 6 distinct sections including clinical foundations, diagnosis and assessment, common rheumatic diseases, clinical interventions, problem-focused management, and clinician resources. The second edition augments a very successful first edition by integrating new knowledge with the standard base of data in this dynamic field of health care. This text is unique in that it transcends the medical model and delves into the biological and psychosocial aspects that determine both the course and outcome of rheumatic conditions. If widely used as an educational tool, this resource can only serve to improve the quality of care for more than 42 million individuals affected by rheumatic diseases.

The discussion on clinical foundations is a helpful review of basic information about the musculoskeletal system, the epidemiology of rheumatic diseases, basic immunolo-

gy, inflammatory conditions, societal impact, and genetics. The following section on diagnosis and assessment promotes an interdisciplinary approach to diagnosis that enhances patient care by attention not only to history, diagnostic testing, and objective physical findings, but also to the patient's view of his or her condition. The section on common rheumatic conditions clearly outlines disease-specific, multidisciplinary approaches to care with chapters on osteoporosis, fibromyalgia, and polymyalgia rheumatica added to the spectrum of diseases discussed. Clinical interventions and problem-focused management have been expanded and updated from the first edition. New chapters discussing shoulder disorders, low back and neck pain advocate adjunctive care be delivered in concert with aggressive and well-monitored pharmacological interventions.

Rheumatic and musculoskeletal conditions are the most pervasive disorders that health care professionals deal with in the United States medical market today. *Clinical Care in the Rheumatic Diseases* is a *must have* resource in every clinician's library to enhance both knowledge base and skill sets vital to treating these conditions more effectively and improving quality of life.

Roberta L. Kayser, PT



Edelstein JE, Bruckner J. *Orthotics: A Comprehensive Clinical Approach*. Thorofare, NJ: Slack Publishers; 2002, 178 pp.

Orthotics: A Comprehensive Clinical Approach, presents orthotic management from evaluative, prescriptive, biomechanical, and psychosocial perspectives. This text includes orthotics from the foot to cervical spine, across all age groups. Its intended audience is physical and occupational therapists, physicians, orthotists, pedorthists, and rehabilitation nurses. Practicing clinicians and students within these professions will find this text useful in their daily practice or studies.

The book is organized into 10 chapters. The introductory chapter describes the personnel involved in orthotic management, their educational background, and their role in the prescription, design, and implementation of orthoses. The authors emphasize the *clinic team* approach to patient orthotic management. Anatomically

based terminology, biomechanical principles involved in orthotic design, and construction methods are presented, including a detailed section on materials.

Chapters 2 through 6 cover orthoses for the management of foot, ankle-foot, knee-ankle-foot, hip disorders, and paraplegia. Highlights of these chapters include an informative section on the anatomy of a shoe and the selection of shoe wear in chapter 2. The section on hip disorders includes pediatric bracing for diagnoses such as Legg-Calvé-Perthes, congenital hip dysplasia, and cerebral palsy. The sixth chapter discusses evaluation procedures for lower limb orthoses including both static and dynamic evaluations, shoe and orthoses inspection, and a convenient checklist for gait observation.

Chapters 7 through 9 are devoted to trunk and cervical orthoses, upper extremity, and burn and soft tissue disorders. Trunk and cervical orthoses include various sacroiliac, lumbosacral, thoracolumbosacral, and cervical devices ranging from a corset-type to maximum stabilization braces such as halo orthoses. Bracing for scoliosis and kyphosis is also included in this section. Categories of upper extremity orthoses include assistive, substitutive, protective, corrective, and various combinations of these. Chapter 9 covers bracing and splinting for burns and soft tissue disorders. Included are static, dynamic, and positioning splints for the purpose of protection, alignment or contracture prevention, and management.

The final chapter deals with goal setting and orthotic management for both the short and long term as they relate to impairments, functional limitations, and disabilities. The section on care of orthotics lends itself well to patient instructions.

Orthotics: A Comprehensive Clinical Approach covers a substantial breadth of information and includes excellent photographs and illustrations. Each chapter uses "thought questions" at the end that summarize the material in a question format. Case studies are then presented in an innovative "point/counterpoint" format with each author presenting their approach and rationale to the orthotic prescription, goals, and plan. Clinicians, faculty, and students should benefit from this exchange between the 2 highly qualified authors. I strongly recommend this as a reference text to the physical therapist clinician, faculty, and student. It would make a great addition to department and educational program libraries.

Patricia Downey, MS, PT, OCS



Thompson JC. *Netter's Concise Atlas of Orthopaedic Anatomy*. Teterboro, NJ: Icon Learning Systems; 2002, 320 pp, illus.

This anatomical textbook combines the images from Frank Netter's *Atlas of Human Anatomy* and the *Netter Collection of Medical Illustrations* along with clinical information specific to the various regions of the body. The purpose of this book is to provide the reader an easy to use, quick reference for orthopaedic problems. The author has used 450 images from Netter to illustrate normal anatomy, common pathologies, and some surgical and nonsurgical procedures.

The book contains 10 chapters. The first 9 chapters cover the spine, shoulder, arm, forearm, hand, wrist, pelvis, thigh/knee, leg/knee, and the foot/ankle respectively. Each of these chapters starts with a table of contents. The anatomy is shown starting with the topographical anatomy followed by the osteology, the joints, ligaments, muscles, nerves, and arteries. Sections covering trauma, history and physical exam highlights, disorders, and surgical approaches are included in most of the chapters. These are displayed in a table format for quick reference. Pictures of radiographs are used to demonstrate different pathologies and trauma. The last chapter describes basic sciences. In this section, bones, nerves, muscles, microbiology, and imaging are described in detail. An index defining common abbreviations is included.

One of the strengths of this book is in its layout. Each chapter is color-coded. The clinical information has been arranged in a table format for quick reference. Netter's images are arranged on the page to allow the reader to view all of the relevant anatomy at one time. Cross-sectional views are shown to assist the reader in determining the various anatomical relationships of different structures. This book is an easy-to-use reference that shows the anatomy of the human body in detail. The illustrations are of the appropriate size so that the reader can visualize the detail in Netter's images.

I would recommend this text to any physical therapist or physical therapist assistant student as well as any clinician. This text would also serve as a tremendous educational tool for patient education.

Jeff Yaver, PT



Carrière B. *Fitness for the Pelvic Floor*. New York, NY: Thieme; 2002, 99 pp, illus.

This book addresses disorders of the pelvic floor and provides exercises to treat

dysfunctions such as incontinence, fecal urgencies, and constipation. The book is designed for either patient use or for the therapist who is treating this patient population. The book is user-friendly and avoids excessive jargon that might confuse or intimidate a patient who does not have a medical background. A glossary of terms is included as a reference.

The book is divided into 2 parts and an appendix. The first part deals with the anatomy and physiology of the pelvic floor. While there is information that is more detailed in various medical texts, this section provides ample information about this area of the body in a clear and concise manner. Drawings are used to illustrate the female and male anatomy in sufficient detail for the scope of this book. The importance of diaphragmatic breathing relative to the pelvic floor is discussed. Bladder and bowel diaries are discussed briefly.

The majority of the book is focused on specific exercises that treat pelvic floor disorders. These exercises are well-illustrated with color photos and written instructions. Colored arrows are used to show the direction desired for the exercises. Unlike larger and more superficial muscles, the pelvic floor muscles are difficult to feel when they contract. The instructions and photos of the exercises make these exercises easier to understand. Patient examples, rather than case studies, are used throughout the text to demonstrate the value of the exercises. Increasing sensory awareness by palpation, visualization, and hearing is the focus of the initial chapter. Other chapters incorporate the use of Swiss balls, and resistive bands superimposed with pelvic floor exercises. A chapter is devoted to the importance of proper posture and stretching exercises for the muscles that surround the pelvic floor. Physical therapy evaluation forms for female and male incontinence and pre- and post prostate surgery can be found in the appendix.

The strength of this book lies in the abundance of high quality photos that depict the various exercises, body mechanics, and postural tips. The descriptions of the exercises are accurate and clear. This book is appropriate for any patient or therapist who has an interest in pelvic floor pathology.

Jeff Yaver, PT

ORTHOPAEDIC SECTION, APTA, INC. BOARD OF DIRECTORS

ANNUAL CONFERENCE

CONFERENCE CALL—June 3, 2002

MINUTES

Michael Cibulka, President, called a regular conference call meeting of the Board of Directors of the Orthopaedic Section, APTA, Inc. to order at 9:05 AM Central Standard Time on Monday, June 3, 2002.

Present:

Michael Cibulka, President
 Lola Rosenbaum, Vice President
 Joe Godges, Treasurer
 Joe Farrell, Director
 Gary Smith, Director
 Paul Howard, Education Chair
 Jay Irrgang, Research Chair
 Tara Fredrickson, Executive Associate
 Terri DeFlorian, Executive Director
 (Secretary)

Absent:

Steve McDavitt, Practice Chair

The February 22, 2002 Board of Director meeting minutes were approved as written.

MOTION 1= Ms. Rosenbaum moved that the fees for purchasing a home study course be increased as follows. Registrants should be offered an early bird fee for registering before a certain date. This will be \$15 less than the fees listed below for the 6-monograph course and 3-monograph course only.

6-monograph course:

Orthopaedic Section member	\$175
APTA member	\$250
Non-APTA member	\$325

3-monograph course:

Orthopaedic Section member	\$100
APTA member	\$150
Non-APTA member	\$200

Multiple registrant discount:

6-monograph course:	\$125
3-monograph course:	\$75

Educational discount: \$110

Copyright permission: \$225
 (\$110 for purchase of the course at the educational discount rate and \$115 for copyright permission). ADOPTED

=MOTION 2= Mr. Howard moved that the "Patellofemoral Education Group" change its name to the "Knee/Patellofemoral Education Group". ADOPTED

=MOTION 3= Ms. Rosenbaum moved to approve the attached CEU application for Orthopaedic Study Groups. ADOPTED

=MOTION 4= Mr. Smith moved to approve the attached Nominating Committee duties and responsibilities as printed and amended. ADOPTED

=MOTION 5= Mr. Godges moved that the Animal SIG expand its scope and mission to include:

- rehabilitation, prevention, and intervention for injuries to animals, who support people with disabilities;
- rehabilitation, prevention, and intervention for injuries for owners of assistance animals and injured animals and that are related to working with animals;
- rehabilitation intervention for the person for whom a support animal is used.

POSTPONED TO NEXT CONFERENCE CALL MEETING (July 9, 2002)

=MOTION 6= Mr. Cibulka moved to approve the attached student assembly liaison responsibilities. ADOPTED

AMENDMENT - Strike all letters (a, b, c, etc.) and number 8. ADOPTED

=MOTION 7= Mr. Howard moved that the Orthopaedic Section fund a SIG table at CSM 2003 in addition to a table highlighting our Home Study Courses. ADOPTED

=MOTION 8= Mr. Howard moved that the revised Practice Analysis Grant Application (attached) be approved by the Orthopaedic Section Board of Directors. ADOPTED

=MOTION 9= Ms. DeFlorian moved to approve the following policy on benevolent distribution:

Money may be given to, but is not limited to, the following:

- *Scholarship such as PT Fund, Diversity 2000, PT Foundation, etc.*
- *Political Action Committees (PACs)*
- *Donation on the death of a member*
- *Donations to PT schools for a specific purpose*
- *Specific requests to be considered*

Distribution is at the Finance Committee's discretion upon Executive Committee approval. ADOPTED

AMENDMENT - delete donation to PACs if deemed this is illegal. ADOPTED

=MOTION 10= Mr. Farrell moved to invite one member of the SIG Task Force to the Fall Board of Directors meeting in La Crosse in 2002. ADOPTED

The meeting adjourned at 11:45 AM.

*Submitted by Terri A. DeFlorian,
 Executive Director (Secretary)*

Please note: because of the length of the above-referenced attachments, please refer to the New Information link at the Section website at www.orthopt.org for the annual conference call minutes complete with attachments.

WANTED

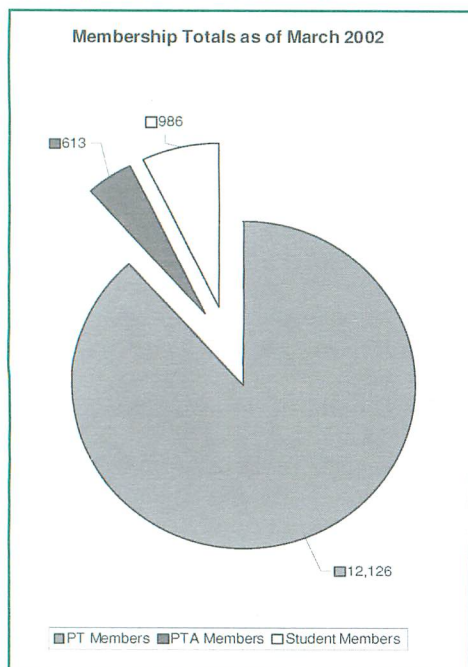
Nominations for Orthopaedic Section Awards

The Orthopaedic Section offers various awards. Please contact Stefanie Snyder at the Orthopaedic Section office if you would like a detailed description and criteria of the awards offered.

800.444.3982
www.orthopt.org

Section News

MEMBERSHIP COMMITTEE



Michael Wooden, PT, MS, OCS
Membership Chair

EDUCATION/PROGRAMMING COMMITTEE

Another great CSM is being planned for February 12-16, 2003 in Tampa, Florida. The committee is hard at work organizing an outstanding line-up of programs for the meeting. Some of the tentative topics being planned at this time include: "What Conditions of the Foot and Ankle Should a Physical Therapist Treat," Getting to ZeroLift and Staying There: Lessons from the Washington State Initiative," "The Pain Reflex: The Anatomical and Physiological Basis of Treatment;" and "Noncontact Anterior Cruciate Ligament Injuries: Risk factors, Relevant Biomechanics and Prevention."

In addition to the regular CSM programming, we will have 4 preconference courses at CSM 2003 that are being jointly cosponsored by the SIGs and the Orthopaedic Section. Information concerning these courses will be forthcoming.

Also, we will once again have all handouts for the regular CSM programming available before CSM on the Section web-

site. You will be able to download and print the handouts of presentations you plan on attending before you leave for CSM. Handouts will not be available on-site at CSM.

Besides working on CSM programming the committee recently updated the Practice Analysis Grant Application with the assistance of Joe Godges. This updated document is available from the Section office.

The Education Committee Chair is also serving on the SIG Presidents Task Force. Two conference calls were completed since CSM 2002 when the group was formed.

Finally we'd like to announce that Orthopaedic Study Groups may now apply for CEUs for their programming through the Section. Contact the Section office for the details related to this new member benefit.

Paul D. Howard, PT, PhD, Cert MDT
Education/Programming Committee Chair

Section Members in the News

Association leaders, PTs, and PTAs gathered at a recognition ceremony during Annual Conference to honor and thank their colleagues for their contributions and commitment to practice, research, and education. Congratulations to the following Orthopaedic Section members who received honors:

Catherine Worthingham Fellows of APTA:

Gail Jensen, PT, PhD, FAPTA
Leslie G. Portney, PT, PhD, FAPTA
Stanley Paris, PT, PhD, FAPTA

Lucy Blair Service Awards:

Carl P. De Rosa, PT, PhD
Carole B. Lewis, PT, PhD, GCS

Eugene Michels New Investigator Award:

Christopher M. Powers, PT, PhD

Dorothy Briggs Memorial Scientific Inquiry Awards:

Claudia A. Knight, PT, MPT
Michael E. Cox, PT, MPT

Chattanooga Research Awards:

Scott K. Stackhouse, PT, MSPT
Lynn Snyder-Mackler, PT, ScD, SCS

Golden Pen Award:

Richard P. DiFabio, PT, PhD

FA Davis Award for Outstanding Physical Therapist Assistant Educator:

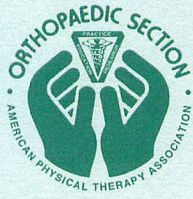
James M. Smith, PT, MA

Mary McMillan Scholarship Awards: physical therapist professional education students—

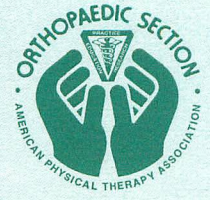
Jennifer M. Benton
Sean Berman
Sarah M. Kiernan
Michael Vance McKinnie, Jr.

Minority Scholarship Awards for Academic Excellence:

physical therapist professional education students—
Michael Vance McKinnie, Jr.



OCCUPATIONAL HEALTH PHYSICAL THERAPISTS SPECIAL INTEREST GROUP



ORTHOPAEDIC SECTION, APTA, INC.

Fall 2002

Volume 14, Number 3

UPDATE ON OSHA'S COMPREHENSIVE PLAN FOR ERGONOMIC INJURIES

Kenneth J Harwood, PT, PhD, CIE

On April 5, 2002 the Occupational Safety and Health Administration (OSHA) released their plan to reduce ergonomic injuries, or work-related musculoskeletal disorders (WR-MSD), through a combination of industry-targeted guidelines, workplace outreach, and research. The plan also outlines an enforcement strategy to identify and correct significant ergonomic problems in industry. This action continues the long history of governmental response to the effects of musculoskeletal disorders in the workplace.

The first component of the plan is to develop industry and task-specific guidelines to reduce and prevent work-related musculoskeletal disorders. These guidelines will be developed through a cooperative agreement between OSHA, industry representatives, and workers. OSHA intends to distribute the guidelines as best practices for the specific industry. Soon after the plan was released, Labor Secretary Elaine L. Chao announced that the first guidelines to be developed would be for the nursing home industry. A draft guideline is expected by early fall. In addition, guidelines for the retail grocery store and poultry processing industries will follow by year's end. All guidelines will be published in the Federal Register and be open for comments.

The guidelines will be developed for those industries that are at high risk for ergonomic injuries. OSHA will use the Bureau of Labor Statistics (BLS) data for determining risk. The BLS data is easily retrieved from the website at www.bls.gov.

It is important to note that the guidelines will be voluntary in that industry will not be required to enact the recommendations. OSHA will continue to investigate industry with numerous documented MSDs caused by poor ergonomics. OSHA will use the authority of the General Duty Clause as an enforcement strategy. The General Duty Clause is section 5(a)(1) of the Occupational Safety and Health Act. The clause requires employers to provide work and work environments free from recognized hazards that are causing or likely to cause death or serious physical harm.

The plan will also include workplace outreach and assistance. OSHA will make available compliance assistance tools that will aid in preventing MSDs. Some of these tools are already available at the OSHA website (www.osha.gov). OSHA will establish specialized training programs for pre-

vention and will provide information to the public on each guideline. In addition, OSHA will publish details of successful ergonomic programs to be used as examples.

The final component of the plan is to foster research in ergonomics. To this end, OSHA will work with the National Institute for Occupational Safety and Health to encourage research. Representatives from OSHA reported that specific actions for this component of the plan will be detailed in the near future.

Finally, Secretary Chao announced the formation of a National Advisory Committee on Ergonomics. OSHA believes that a National Advisory Committee is necessary for the comprehensive plan to be successful. The committee will advise John L. Henshaw, Assistant Secretary of Labor for Occupational Safety in the following areas:

- 1) information related to various industry or task-specific guidelines;
- 2) gaps in the existing research related to applying ergonomic principles to the workplace;
- 3) current and projected research needs and efforts;
- 4) methods of providing outreach and assistance that will communicate the value of ergonomics to employers and employees; and
- 5) ways to increase communication among stakeholders on the issues of ergonomics.

The Committee will consist of not more than 15 members from a broad-based applicant pool. The Agency hopes to attract representatives with specialized scientific or medical expertise related to ergonomics or others who have knowledge or experience concerning these issues. The committee will be chartered for 2 years.

The American Physical Therapy Association and the Occupational Health Physical Therapy Special Interest Group (OHSIG) continue to be active in this arena. Written and verbal testimony have been presented to the Department of Labor and the US Senate by an APTA member on the role of physical therapists in the ergonomic standard. In addition, comments on the proposed ergonomic plan and a draft construction guideline were provided. Most recently, the APTA submitted 2 nominations for the National Advisory Committee. It is our hope that the important contribution of the physical therapist in preventing MSDs will be encompassed in all pending legislation.

Ken Harwood, PT, PhD, CIE

REQUEST FOR NOMINATIONS FOR SUBJECT MATTER EXPERTS FOR THE OCCUPATIONAL HEALTH PHYSICAL THERAPY SPECIAL INTEREST GROUP (OHPSIG) PRACTICE ANALYSIS

The purpose of a practice analysis is to develop an accurate description of current practice in a specialty or subspecialty. A practice analysis identifies the core knowledge and critical work functions that are common across all practitioners within a field. Hence, the outcome of a practice analysis is a written description of the skills, knowledge, and abilities required of a practitioner.

Presently, approximately 800 members of the Orthopedic Section of the American Physical Therapy Association identify themselves as Occupational Health Physical Therapists (OHPT). The dynamic nature of this emerging field within physical therapy and the greater social recognition of ergonomics, wellness, and prevention have resulted in the need for a better understanding of OHPT practice. The Occupational Health Physical Therapy Special Interest Group (OHPT-SIG) has recognized this need and is in the process of conducting a practice analysis for OHPT.

A first step in the practice analysis is to select interested practitioners who will assist in preparing the description of current OHPT practice. The subject matter experts (SMEs) will be called upon as resources to identify pertinent documents, research, and curricula that describe OHPT practice; identify the responsibilities and knowledge areas required of a practitioner; assist in describing current clinical practice; and oversee the conduct of the study. Their responsibilities would be to attend one meeting to assist in developing a national job analysis survey instrument, review the results of the survey, and review the final document describing current practice.

The SMEs should be composed of individuals who represent a cross section of all practitioners. The individuals should represent practitioners who differ in some or all of the following areas:

- a. Geographical location
- b. Practice area (ergonomics, work hardening, etc)
- c. Educational Background
- d. Number of years practicing
- e. Demographics (culture, gender, etc)
- f. Practice setting (industry, private practice, educational institution)

Any interested practitioner is invited to submit his/her or another's individual's name to be a subject matter expert. The Practice Analysis Task Force, the OHPT-SIG Board of Directors, and an outside consultant will make the selection of SMEs. Please submit the nomination to:

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FOOT & ANKLE

SPECIAL INTEREST GROUP ORTHOPAEDIC SECTION, APTA, INC.

Hello to All:

Over the past months, there has been a very successful push for communication between the various SIGs in the Orthopaedic Section. I wish to thank the following Presidents in assisting in the forming of a set communication format between the SIGs and the Section. Those Presidents are:

- Performing Arts SIG: Jennifer Gamboa, MPT, OCS—
past President
Jeff Stenbach, PT, OCS—current
President
- Pain Management SIG: Joe Kleinkort, PT, MA, PhD, CIE
- Occupational Health SIG: Deborah Lechner, PT, MS
- Animal PT SIG: Cheryl Riegger-Krugh, PT, ScD

I also wish to thank Joe Farrell, PT, MS who was the liaison with the Board of Directors of the Orthopaedic Section. Through this group, several policies were set in place that will guide the SIGs in their role in the Orthopaedic Section.

EDUCATION/VICE PRESIDENT

Mark Cornwall, PT, PhD, CPed has been the Vice President for the past 4 years. His major focus is the development of the education sessions at CSM. In 2003 he will end his term and I want to acknowledge the excellent programming over his term. In his final year, Mark is planning several educational programs.

The FASIG is planning a preconference course for Combined Sections Meeting 2003 in Tampa, FL. The title of the course is: *Foot Orthotic Management of Common Foot and Ankle Conditions: An Advanced Problem-based Approach*. The plan of the course is to present several common clinical conditions and present background and treatment of these conditions. A full description will be coming in the next issue of *OP* with speakers and topics.

The Orthopaedic Section continues to give us 4 hours of programming at CSM along with our Business Meeting. These sessions are usually standing room only and lead to lively question and answer sessions. **EXPECT THE SAME IN 2003.**

SECRETARY/TREASURER

Steve Paulseth, PT, MS has submitted the budget to the Orthopaedic Section.

CALL FOR NOMINATIONS

The Foot and Ankle Special Interest Group will be electing a Vice Chair. The position is for 3 years starting in February 2003. Those interested can contact Byron Russell, PT who is Chair of the Nominating Committee. His address and email is in the officer listing on page 38.

GENERAL INFORMATION

Please take time to browse the FASIG website. I encourage you to take the time to register under the "Find a Foot and Ankle Physical Therapist." This makes your name available to be reached by the general public and other PTs who need a referral.

In this issue of *Orthopaedic Practice*, there is a paper by Gallagher, Driskell, and McPoil on a case presentation of the postoperative treatment of a patient who underwent total ankle arthroplasty. This case describes the treatment of this patient and uses the Foot Function Index (FFI) as an outcome measure. Those who remember the failures of the earlier versions of TAA wait for the long-term follow-up on these new implants.

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Total Ankle Arthroplasty: A Case Study

Gail Gallagher, BS

Cybilnia Driskell, PT, GCS

Thomas McPoil, PT, PhD, ATC

INTRODUCTION

In 1970 the first recorded ankle replacement was performed using a hip prosthesis to replace an ankle joint. This procedure was not successful and the patient ultimately underwent a triple arthrodesis of the involved ankle. Although numerous ankle joint prostheses have been designed since that time, the majority have failed until recently.¹⁻⁷ In 1985, Hamblen wrote that the ankle joint could not be replaced.⁸ Kitaoka and Patzer reviewed their experience with the "Mayo" ankle implant and stated that they did not recommend ankle arthroplasty and the constrained Mayo implant for rheumatoid arthritis or osteoarthritis of the ankle.¹ Similarly, Bolton-Maggs et al reviewed the London Hospital experience and noted that in light of the high complication rate as well as the generally poor long-term clinical results, arthrodesis was the treatment of choice for the painful, stiff arthritic ankle regardless of the underlying pathological process.² Based on these clinical reports, most orthopaedic surgeons selected not to perform total ankle joint replacements and used ankle arthrodesis as the surgical treatment of choice for the management of end-stage degenerative joint disease of the ankle. In the late 90s, total joint replacements were again introduced as more effective prosthetic designs were developed.

This case study illustrates the plan of care that was used with a patient who underwent a total joint arthroplasty using the Agility Total Ankle System (ATAS) developed by DePuy, Inc. The ATAS is an uncemented, nonconstrained, congruous design that requires fusion of the tibio-fibular syndesmosis. The result is a hinge joint capable of dorsiflexion and plantar flexion postsurgery. This case study documents the changes that occurred in muscle strength, endurance, and proprioception that lead to an improved level of functional status allowing the patient to lead a more normal and productive life after surgery.

CASE HISTORY

On April 19, 2001 a 62-year-old retired male was seen for physical therapy evaluation and management following a total joint arthroplasty of the right ankle using the ATAS. The surgery occurred 10 weeks prior to his first visit to physical therapy. The patient's preoperative history included: a spiral fracture to the right fibula in January 1957, a complete spiral fracture to the right tibia in April 1960, and multiple episodes of right ankle sprains while participating on gymnastics and swimming & diving teams as an undergraduate student. Later as a graduate student, he continued to have chronic sprains of the right ankle while participating in recreational athletic activities. In May of 1974, he sustained a compound fracture of the right talus, calcaneus, tibia, and fibula as a result of a motor vehicle accident. This continual pattern of chronic and acute trauma led to the development of degenerative joint disease of the right talocalcaneal joint and the tibial plafond, which included osteophyte overgrowth. Because intervention was delayed until a successful total ankle prosthesis was developed, the degeneration was so severe that the talocalcaneal joint was near physiological fusion. Physiological fusion is defined as a significant narrowing of the joint space between the tibia, fibula, and talus along with osteophytes throughout this area lead-

ing to a marked limitation in talocrural joint dorsiflexion and plantar flexion range of motion.

Although this patient had been seen by many physicians and orthopaedic specialists who recommended ankle arthroplasty over the past 30 years, he was not comfortable with the surgical procedure since the reported outcomes were so poor. When the patients' current orthopaedic surgeon discussed recent improvements in the surgical procedure and outcomes, the patient decided to have surgery. Prior to surgery, the patient was not receiving any therapy or rehabilitation services for this or any other injury.

Immediately following the total ankle joint replacement, the patient was hospitalized for 36 hours and then discharged home in a plaster cast for 6 weeks with instructions to use crutches and not bear any weight on the right lower extremity during this time. Six weeks after surgery, he was placed in a boot-cast and instructed to continue the nonweight bearing status on the right lower extremity. Ten weeks following surgery, the patient was placed in a lace-up brace and instructed to initiate full weight bearing on the right LE. In addition, he was also told to use ankle wraps to decrease swelling, wear the lace-up brace for support during ambulation, not to run or jump, and to begin physical therapy.

INITIAL EXAMINATION

Upon reporting to physical therapy, the patients' chief complaint was limited range of motion due to swelling and lack of muscle strength in his right ankle and lower leg. Visual inspection revealed that the patient stood with his right forefoot in a more inverted position. It was hypothesized that this positioning of the forefoot allowed the medial aspect of the forefoot to be unweighted during standing and possibly during walking. Marked edema was noted around the level of the malleoli. A 5-inch surgical scar was noted at the midline of the forefoot and a second surgical scar was observed approximately one inch in length on the lower third of the medial posterior aspect of the calf. The patient also stated that he could only ambulate 30 feet before pain started in his right ankle. Manual muscle test grades were limited by ankle pain. The Foot Function Index (FFI) was selected as the outcome measure to determine the success of the intervention selected.⁹ A summary of the initial examination findings are listed in Table 1.

Based on the findings of the initial examination, the patient was placed into musculoskeletal practice pattern 4H.¹⁰ The impairments listed for musculoskeletal practice pattern 4H include impaired joint mobility, motor function, muscle performance, and range of motion associated with joint arthroplasty.¹⁰ The patient's impairments included decreased range of motion, muscle weakness, and pain, although it should be noted that pain was greater preoperative than postoperative. Based on the patient's history and examination, a plan of care was initiated that consisted of physical therapy intervention 2 to 3 times per week for 5 weeks.

The patient's goals were to increase ambulation tolerance to 2 miles a day with a pain rating of 2/10 or less and to gain the necessary strength and range of motion (ROM) in the right ankle joint to be independent in activities of daily living (ADLs) without restriction.

TREATMENT

The main objectives of the treatment program were to: (1) increase ROM in dorsiflexion and plantar flexion, (2) increase general strength of the ankle, and (3) increase proprioception.

As Neufeld stated, arthrodesis leads to a loss of proprioception that may contribute to a sense of imbalance and loss of stability.¹¹ These objectives are therefore, important, in order for the patient to be independent in ambulation, ADLs, and recreational activities.

The first one-third of the patient's visits focused on increasing ROM in dorsiflexion and plantarflexion, improving scar mobility, as well as decreasing ankle edema. These goals were met by prescribing exercises that created minimal muscle resistance yet permitted movement through the full range of motion. Soft tissue and scar mobilization techniques were used at each treatment session in order to prevent scar adhesion and decrease swelling. Therapeutic exercise consisted of using a wobble board in sitting to facilitate dorsiflexion and plantarflexion while barefoot. This was immediately followed by the use of the Prostretch device to enhance plantarflexion and dorsiflexion mobility while in a seated position. The Ankle Isolator device was used in the supine, prone, and seated positions with the knee flexed to 90° with the patient performing dorsiflexion and plantarflexion to isolate and strengthen muscles in the lower extremity while increasing proprioception. The patient was provided with a home exercise program that consisted of walking, plantarflexion and dorsiflexion assisted exercises with theraband, and theraband resisted heel pull-backs to strengthen the gastrocnemius and soleus muscles.

The second one-third of the visits focused on mobility and endurance. Upon arrival the patient pedaled on a recombinant cycle ergometer as a gentle ROM warm-up exercise. Next, scar mobility was performed, followed by therapeutic exercise in order to optimize the work capacity of this new ROM. At this point in time, the number or repetitions of each exercise was increased in order to facilitate improvement in muscle endurance.

During the third portion, the visits focused on proprioceptive awareness and muscle strength. The patient progressed to standing on foam while performing plantarflexion and dorsiflexion. This exercise was used to facilitate proprioceptive awareness as well as muscle strength. Because this exercise was done in weight bearing, it assisted in increasing the bone fusion where the prosthesis, talus, tibia, and fibula meet. By the end of the fifth week of care, the patient had reached the expected outcomes for his surgical procedure and was discharged from physical therapy.

OUTCOMES

At the conclusion of 11 physical therapy visits over a 5-week period, the patient demonstrated marked improvement. The FFI score had decreased from 47.45% at the time of the initial examination to 14.19% at the completion of formal

physical therapy intervention. This confirmed the clinical findings of fewer restrictions in ankle range of motion. The patient was also able to walk for 1/2 mile with a pain rating of less than 2/10. He could also ambulate stairs independently without a risk for falls. His weight bearing ROM improved to 4° of dorsiflexion and 25° of plantarflexion. Circumference at the lateral malleolus (23.25 cm) and forefoot (24.25 cm) remained unchanged since the initial visit. This was attributed to the fact that the tibial prosthetic component had a greater circumference than the original ankle.

At 6 months post-op, after continuing the use of his home exercise program, the FFI score was further reduced to 9%. Thus, only 9% of his foot dysfunction could be attributed to pain and disability. The patient also reported that he could now walk 2 to 3 miles per day with a pain rating of no more than 2/10. Finally, his right ankle range of motion had improved to 48° plantarflexion and 6° dorsiflexion.

CONCLUSION

This case study illustrates the effectiveness of physical therapy intervention following a total ankle joint replacement. In addition to typical physical therapy tests and measurements, such as goniometry, circumferential measurements, and muscle testing, this case study also highlights the importance of using an outcome assessment tool to evaluate the patient's level of pain and disability associated with this particular and less-common surgical procedure.

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Table 1. Physical Therapy Examination Findings

	Initial Examination		At Final Physical Therapy Visit		Six Months after Surgery	
	Left	Right	Left	Right	Left	Right
Range of Motion						
- Dorsiflexion	12°		12°	4°	12°	6°
- Plantarflexion	50°	4-10°	50°	25°	50°	48°
Muscle Strength	5/5	3/5	5/5	4/5	5/5	4+/5
Circumference						
- Ankle joint		22.50 cm		23.25 cm		23.25 cm
- Forefoot		24.50 cm		24.25 cm		24.25 cm
Walking Distance	30 feet prior to pain		1/2 mile prior to pain		2 - 3 miles prior to pain	
Foot Function Index	47.5%		14.19%		8.82%	

PASIG



Performing Arts Special Interest Group • Orthopaedic Section, APTA

MESSAGE FROM THE PRESIDENT

Hello everyone! Your PASIG Board has been extra hard at work over the last several months. We are deep into planning the general programming for CSM 2003, which is being held in Tampa, Florida. We are also working diligently on our preconference course that (while it still doesn't have a formal title) will focus on dance medicine. I believe this introductory to intermediate level course will be an excellent vehicle to assist those of you interested in getting on board in the world of dance medicine and will help pave the way for other PASIG coursework. The course is intentionally geared for the physical therapist who is considering becoming involved in dance medicine, as well as the therapist who has already begun and would like a basic overview course to help them solidify their familiarity with the world of dance. The wonderful thing about preconference courses is that they occur when you are already attending another conference (CSM) and provide needed CEUs at the same time. You would have to travel again to take another course. This way you don't need to expend more time and expense getting away to an off-site course. The fact that the subject matter happens to also be right in line with our group's interests is an added bonus. We'd like to see everyone at CSM this year getting involved at the ground level. Many of you have expressed interest in the arts and yet have also said you're not sure about how to get started. Well, this course is just for you and I would encourage you to take advantage of the opportunity. We have intentionally included material that is immediately applicable to dance populations and can be incorporated as actual usable tools when you return home. The dance-related general programming at CSM is being planned on an intermediate level so that those of you who attend the preconference course will also take away new information from our general programming. Those of you unable to attend preconference programming will be able to participate in this intermediate level general CSM programming.

I finally have news regarding our Practice Analysis! Our funding to complete what we have already begun has been approved and we are moving swiftly to make the analysis a reality! Our survey will most likely appear in your mail in September. Please respond quickly once you have received

your survey—we both want and need your response. I apologize for the long wait, but we are staying on top of this issue as it is important to all and I believe the wait will, ultimately, be worth it. Many thanks to all of you for your patience. Know that your feedback is critical now for the survey results to have any real meaning. If you know of another physical therapist treating performing artists, please encourage them to contact the Orthopaedic Section or me to obtain a survey for them. Again, the more surveys we complete, the more accurate our results will be.

As usual, my message again addresses our ongoing need for each of you to consider stepping forward to get involved. It is not so important that you have a huge practice brimming with either dancers or musicians. Each of us has something to offer and we can all learn something from each other's involvement. Networking with your fellow special interest group members places you on the front lines and can help grow this area of your practice. Freeing up a great deal of time is not required, but your ideas and enthusiasm are. Ultimately, we NEED your help. Keep a lookout for advertisements about our preconference course. We look forward to seeing you at CSM 2003, so begin planning your trip to Tampa, Florida! Tampa and the surrounding areas offer many activities for vacationing families. As always, I welcome your comments, positive or negative.

Yours in the arts,

Jeffrey T. Stenback, PT, OCS

President, Performing Arts Special Interest Group

GET INVOLVED IN THE PASIG AND THE FUTURE IS YOURS!

Join your fellow PASIG members in becoming an ambassador for the Performing Arts! The PASIG wants to encourage all our members to become actively involved by serving as committee members, regional directors, officers, and by offering your input at business meetings and through communication with other PASIG members. Remember, when you give of your time and energy to the PASIG, it's like giving a gift to yourself! The PASIG is only as strong as its members.

PASIG Resources
Let PASIG help you MARKET your services!

PASIG BROCHURES AND LOGO PINS are available to help you advertise and build your performing arts patient base. You can use the BROCHURES to market yourself to the performing arts community, the medical community, and to colleagues in the physical therapy community. You may proudly wear the PASIG Logo Pin to increase professional exposure.



The PASIG MEMBERSHIP DIRECTORY is an excellent resource for referrals, especially when your patients travel out of state. It includes state-by-state and alphabetical listing of PASIG members, as well as a Student Affiliation Site List. And don't forget, we still have DANCE / MUSIC GLOSSARIES available to assist you and your colleagues in communication with your performing artist patients. **ORDER NOW!**

PASIG PINS	\$5.00
PASIG DIRECTORIES	\$3.00
PASIG BROCHURES	\$15.00 (package of 25)
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TO ORDER: Call the Orthopaedic Section at 1-800-444-3982.
 All proceeds benefit the PASIG.

Performing Arts Special Interest Group
MEMBERSHIP FORM:



PERFORMING ARTS SPECIAL INTEREST GROUP • APTA

To be a PASIG member, you must also be a member of the Orthopaedic Section. You may use this form for new membership, change of address, or updating your information.

Name _____

Address _____

City _____ State _____ Zip _____ Phone _____ Email _____

APTA member number: _____

What percent of your patient population are performing arts patients?

____ Dancers ____ Gymnasts ____ Skaters
 ____ Musicians ____ Singers ____ Circus Performers

If you are affiliated with any performing arts schools, companies, or groups, please list them:

Do you accept Student Affiliations?
 ____ Yes ____ No

Are you interested in serving as a mentor to other physical therapists or physical therapy students interested in the treatment of performing artists?

Physical Therapists ____ Yes ____ No
 Students ____ Yes ____ No

Are you interested in serving on any of the PASIG Committees?

____ Practice
 ____ Public/Media Relations
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This seminar introduces rehabilitation professionals to the principles and techniques of creating a mindful clinical setting. The benefits and applications of yoga are presented with clinical and experiential evidence. Take advantage of current mind-body science to foster a conservative, but wholistic, integral practice.

Matthew J. Taylor, MPT, RYT
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Pain MANAGEMENT

SPECIAL INTEREST GROUP • ORTHOPAEDIC SECTION, APTA, INC.

President's Message

Joe Kleinkort, PT, MA, PhD, CIE

Joint Pain—Nutritional Secrets Unlocked

The pain of the many types of arthritis can be at times frustrating to disabling. Exercise, as we all know as therapists, is a good start to regaining the proper condition to the joint and maintaining the balance of nutrition. From the medical arena we have heard that NSAIDs should be the first line of defense with inflammatory reactions such as arthritis. The use of these medications, however, can cause various side effects, not the least of which is gastrointestinal bleeding and in some cases even death. Elderly patients using NSAIDs are 4 times more likely to die from ulcers and internal bleeding than those who don't use the drugs. The use of these over the counter drugs can also cause the disruption of the protective mucous lining and intestinal flora in the lower bowel leading to what we know as "leaky gut syndrome." This allows abnormally large proteins to pass through the walls of the intestine into the bloodstream. These proteins can trigger allergic reactions that cause inflammation and exacerbation of symptoms associated with rheumatoid arthritis. It has also been shown that NSAIDs can block certain prostaglandins which are necessary to help regulate blood pressure.

Since the early 1990s we have heard of the tremendous benefits of glucosamine sulfate combined with chondroitin sulfate for the renewal of the joints in many cases. Glucosamine works by building proteins that make up healthy cartilage. These proteins bind with water, which is critical for proper joint lubrication. Stiffness and aching in your joints can be signs that these essential proteins are breaking down and that your cartilage is starting to break down. Chondroitin provides a constant supply of nutrients needed to repair the damaged protein and build new protein. The use of these 2 nutritional aides is only a start to healthy joints. It is also important to note that the use of these two supplements will take at least 6 to 8 weeks before an effect is noticed. The use of bovine and shark cartilage has a complete mix of all the mucopolysaccharides; however, unless processed correctly with enzymes, they can lose many of the beneficial properties from deactivation of the protein components. Since sulfates can be difficult to break down, the use of enzymes such as bromelain and papain can be helpful to properly absorb the components of the sulfates. Bromelain

inhibits the formation of prostaglandins and has powerful anti-inflammatory effects. One of the leading enzyme products in Europe is wobenzyme. It also is a major stimulant to the immune system.

Some herbs that also claim to relieve joint pain have been used over the years. These include yucca, white willow bark, feverfew, devil's claw, celery, and boswellia. Four herbs that more recently have come into the forefront are lemon myrtle, aniseed myrtle, mountain pepper, and wild rosella. Lemon myrtle is a potent source of lemon oil or citral. It seems to work specifically on removing painful toxins from the joints, thereby eliminating the source of pain and inflammation. Aniseed myrtle also has some of these antipathogenic compounds as well. Mountain pepper seems to have anti-inflammatory properties. Wild rosella has a similar effect as lemon and aniseed myrtle.

The use of various supplements along with a regular exercise regime can go a long way to prevent chronic joint inflammation in many people. The ability to manage pain requires a comprehensive enlightened approach from a wide variety of sources that touch mind, body, and soul. As we embark on this new century we will see a rapid rise in chronicity due to the destructive effects of managed care and a lack of preventive care. We must all be prepared for the surge in chronicity and the ways to best effect control of these ailments.

I eagerly invite you to submit short papers that clearly aim toward the management of pain. We must stretch to meet the new challenges of a changing scene of patient care. Each of you who read this is integrally important to growing our SIG and our body of knowledge. You can contribute a great deal to our profession by helping others better understand ways in which you address pain management.

CSM 2003-Tampa

We will be having a tremendous one day preconference course this coming year with the morning session focusing on the Neuroplasticity of Pain with Russ Foley, PT, MS and the Psychology of Pain with Dr G. Frank Lawlis, one of the foremost authors in the world on the subject of chronic pain and author of the Dallas Pain Questionnaire and multiple texts. He

will be a guest in 5 sessions of the new Dr. Phil Show airing this fall on TV. Our 4-hour course during CSM will introduce us to a new technique, Pain Reflex, by a gifted therapist John Iams, PT, MS. So as you can see, there are a lot of wonderful programs in store for us. We are also looking for nominees to serve as treasurer, education chair, nominating chair, and practice chair. Please submit your names to me or others you think will be interested. This is your SIG and together we can make it and the Orthopaedic Section all it can be.

Transcranial Microcurrent Electrical Stimulation For Pain Control

John Garzione

Microcurrent electrical stimulation uses current in the microamperage range of 1000 times less than that of traditional TENS units and below sensation threshold. The pulse width (length of time that the current is delivered) is about .5 seconds per pulse, which is 2500 times longer than the pulse of a typical TENS unit (50-400 microseconds).^{1,2} The current is applied through the head via ear clips stimulating the Auditory nerve (Cranial Nerve 8) that communicates directly into the brain. Microcurrent stimulation was developed in 1954 in the USSR and spread through the former Eastern Bloc and into Europe and Japan. The technique arrived in the US in the 1960s, where it was researched in both animal and human subjects at several US university medical schools. Research reviews were also conducted in 1980 and again in 1995 summarizing progress of Cranioelectrotherapy Stimulation (CES) in Medicine.³ The uses for CES include treatment for rehabilitation of addicted persons, mood elevation for patients with paraplegia and quadriplegia, closed head injury, spastic CP and chronic pain. It is not the scope of this article to discuss other uses for CES other than the treatment of chronic pain.

We all have noticed that many patients report that when they have more emotional stress, they have more pain. Research on the use of CES for patients with fibromyalgia postulated that if one could reduce the stress levels in patients with chronic fibromyalgia, their pain levels would also decrease.⁴

A double-blind placebo-controlled study done in 1999 showed that people who have had fibromyalgia on the average of 10 years showed a significant reduction in pain with improvements in sleep, a feeling of well being and an increase of their quality of life.⁴ The subjects used the CES unit for 1 hour per day for 3 weeks at .5 Hz, modified square waves, biphasic pulses with intensity set at subsensation levels of 100 micro amps with 50% duty cycle.⁴ A 70% improvement was also noted in patients with fibromyalgia who had intractable headaches. The treatments were given at 20 minutes, 4 times per day for 1 month.⁵

MECHANISMS OF ACTION

It is not entirely clear why putting microcurrent electrical stimulation across the head would reduce pain in the body. Studies did not confirm an increase of endorphins in the blood. One study found an increase of serotonin⁶ and one found an increase of MAO-B and GABA.⁷ Animal studies indicate that CES may bring neurotransmitters back into a homeostatic balance. When normal homeostasis shifts into a stress pattern, it causes an increase of cortisol, which increases pain perception.⁸ CES may shift the balance back to normal.

There is also evidence that there is a central pain neuromatrix in the cortex of the brain which processes pain messages throughout the body even in the absence of perceptible pathology, such as phantom limb pain. Ronald Melzack theorized that the pain neuromatrix may be important in producing chronic pain states.⁹ It is known that CES stimulates every area of the brain, which would also include where the neuromatrix resides.¹⁰

The CES has also been shown to smooth out and normalize the EEG spectrum of people who had pain from DJD.¹¹ Pain and degeneration seem to be marked by significant elevations from the normally smooth 2-minute FFT (Fast Fourier Transforms) spectral curve. Alpha stimulation of patients studied caused a smoothing of the FFT spectral curves with a significant decrease in reported pain on the 5 point VAS from 4.5 to 2.1.

Patient treatment

Clean earlobes with mild soapy water and dry. Place felt pads to ear clips and saturate the electrodes with saline solution. Place ear clips on each ear lobe as high as possible to the cartilage (have patient remove earrings). Turn on unit, set time for at least 20 minutes, set pulse rate at .5 Hz and turn up output until patient feels stinging at electrodes, dizziness or nausea. Immediately reduce output until symptoms decrease. It is acceptable if the patient feels some current. At the end of treatment, remove the electrodes. We use treatment times of 20 minutes, 3 times per week; CES can be used while other localized treatments are also being done. Do not use CES in conjunction with short wave diathermy.

The patient may feel relaxed or light-headed, which will decrease within the next few hours.

Contraindications

There have not been any significant harmful side effects. Use caution with stimulating directly over carotid sinus when used during pregnancy, when used with a demand type pacemaker, or when operating complex machinery or driving shortly after treatment.

This unit is manufactured and distributed by:

Electromedical Products International, Inc.
2201 Garrett Morris Parkway
Mineral Wells, TX 76067
Phone #: 1-800-367-7246

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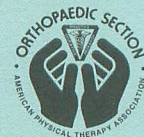
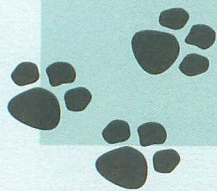


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Animal Physical Therapist

SPECIAL INTEREST GROUP

Orthopaedic Section, APTA, Inc.



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3. The APTA has a web site that lists all of the State Practice Acts: www.apta.org/advocacy/state/state-practice.

ISSUES OF CLINICAL COMPETENCY IN ANIMAL REHABILITATION

This is a working document.

The collaborative effort to provide rehabilitation for animals had led to the need for further training, which is different for veterinarians, physical therapists, veterinary technicians and physical therapist assistants. As APTA's vision 2020 states, a physical therapist is the provider of choice when providing physical therapy, no matter who the patient is, human or animal. However, this does not mean that physical therapy training for humans prepares a clinician to provide high quality rehabilitation care for animals. In an attempt to define roles and delineate appropriate skill training for the participating professionals, we have developed a draft list of clinical competency criteria/objectives for a training program in animal rehabilitation. The use of "animal" is distinctive for one animal (dogs, horses, cats, etc.) Training in rehabilitation for one animal would not provide rehabilitation training for another animal population. We are asking you to review these objectives and send any feedback to Carrie Adamson at the following address. Thank you for your comments.

Please send feedback to: carolineadamson@juno.com
or

CCSMRC

9870 E. Alameda Ave.

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ATTN: Carrie Adamson

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President, Animal SIG

CALENDAR OF EVENTS

The home study course **BASIC SCIENCE FOR ANIMAL PHYSICAL THERAPISTS** is still available. Contact 800-444-3982 or 608-788-3982 for more information.

THE ANIMAL PHYSICAL THERAPIST SPECIAL INTEREST GROUP (ANIMAL SIG) UPDATE:

1. Orthopaedic Section Member and nonmember directories are available through the Section Office 800-444-3982 Fax: 608-788-3965 or Email: ssnyder@century-tel.net. There currently are 544 members.
2. State Liaisons: To date there are 33 states that have Animal SIG Liaisons. Contact Siri Hamilton for further information 865-974-2993 and E-mail: sirivtpt@utk.edu.

VETERINARIANS

TITLE: Certificate Program in Animal Rehabilitation for Veterinarians

At the completion of this certificate program, the veterinarian will be able to:

** Overall objective: Recognize the veterinarian as the team leader / case manager for the animal's care

1. Describe the benefits of physical therapy, what it can bring to a veterinary practice and what it can provide for animal patients
2. Explain when to refer patients (orthopedic, neurologic, others) to a physical therapist for physical therapy
3. Adopt terminology from a physical therapy perspective

4. List physical therapy procedural interventions (for example, manual therapy, assistive devices, functional mobility training, airway clearance techniques, and integumentary repair and protective techniques) and their benefits
5. Describe the effects of immobilization for various pathologies and on various tissues
6. Paraphrase the method/format of a physical therapy examination and evaluation as outlined in the Guide to Physical Therapist Practice
7. Explain exercise physiology geared for a veterinary audience as related to animal rehabilitation
8. Explain animal biomechanics
9. Cite the mechanism, uses, benefits and contraindications for physical agents
10. Define mechanical modalities (ie, ultrasound, e-stim), their benefits, contraindications and risks
11. Define the concepts of therapeutic exercises and the concepts of appropriate exercise progression
12. Cite the concepts of physical therapy tests and measures and their modified application to animals
13. Explain different types of rehabilitation and mobility equipment, their pros and cons and pricing differences
14. Define rationale of a physical therapy treatment plan of care for specific pathologies
15. Define the rationale of individualized home care programs according to specific pathology
16. Define and demonstrate proper body mechanics when handling animals
17. Cite the method of documentation of physical therapy outcome measures
18. Define the rationale of how reliability is ensured in measuring physical therapy outcomes
19. Cite the regulatory issues pertaining to the practice of "physical therapy", including supervision of a PTA by a PT
20. Describe business concepts, developed in collaboration with physical therapists, as related to establishing a physical therapy program (insurance, marketing, equipment, contract vs. employee physical therapist)
21. Describe the education and skill level of a licensed physical therapist and licensed physical therapist assistant
22. Define the roles of veterinarians, physical therapists, physical therapist assistants, and veterinary assistants in the collaboration of animal rehabilitation and in regards to each one's education and skill level
23. Cite the legal and practice issues surrounding animal rehabilitation
24. Cite the legal and practice issues concerning the practice of physical therapy and the supervision of the PTA by a PT
25. Cite regulatory issues pertaining to the practice of "physical therapy" and to the practice of veterinary medicine

PHYSICAL THERAPISTS (PT)

TITLE: Certificate Program in Animal Rehabilitation for Physical Therapists
At the completion of this certificate program, the physical therapist will be able to:

- °° Overall objective: Recognize the veterinarian as the case manager for the animal's overall care and the physical therapist as the rehabilitation coordinator: Primary role in examination and evaluation of movement dysfunction of animals and in developing the rehabilitation intervention and plan of care.
1. Describe and have a working knowledge of the animal anatomy and physiology as related to rehabilitation
 2. Adopt terminology from a veterinary medical perspective to effectively communicate total care
 3. Describe and have a working knowledge of common orthopedic and neurologic pathologies of the dog as related to rehabilitation care
 4. Describe and have a working knowledge of tissue responses to injury and effects of immobilization for animals
 5. Describe and have a working knowledge of time frames for tissue healing in animals
 6. Describe and have a working knowledge of wound healing for dogs and various methods of treatment
 7. Describe animal behavior and safety issues when working with animals
 8. Describe and demonstrate correct safety precautions / techniques for both self and animal [towel-walking, weight-bearing status, underwater treadmill, Passive Range of Motion (PROM)]

9. Describe and demonstrate basic handling, restraint techniques, and bandaging of animals
10. Recognize pain/discomfort and normal vs. abnormal clinical presentations, including how to take vital signs
11. Describe various types of splints and orthotics and the pros and cons of each
12. Explain different types of rehabilitation and mobility equipment, their pros and cons and pricing differences
13. Describe the physiology behind anesthesia, basic types of anesthesia and their effects on recovery
14. Describe and have a working knowledge of common medications, vaccination protocols, basic parasitology and radiology
15. Describe and demonstrate proper body mechanics when handling animals
16. Describe and have a working knowledge of basic medical management for common canine pathologies
17. Describe and have a working knowledge of basic surgical techniques as related to rehabilitation
18. Describe basic exercise physiology as related to animals
19. Explain the requirements (training, skills, etc.) of animal athletes and working animals with their respective jobs
20. Perform a history taking examination gathered from the animal's owner, including functional status
21. Perform a basic physical, neurologic and orthopedic examination of the animal and be able to recognize a problem or potential problem
22. Explain animal biomechanics
23. Evaluate an animal's gait and other functional movements
24. Describe and have a working knowledge of physical therapy procedural interventions as modified for animals (manual therapy, assistive devices, functional mobility training, airway clearance techniques, and integumentary repair and protective techniques)
25. Describe and have a working knowledge of physical agents as modified for animals including contraindications and risks
26. Describe and have a working knowledge of mechanical modalities (ie, ultrasound, electrical stimulation), as modified for animals including their contraindications and risks
27. Demonstrate correct basic therapeutic exercise techniques, as well as when to start intervention or progress intervention as needed
28. Clip and prepare an animal for a treatment (ie, Electrical-stimulation, ultrasound)
29. Describe and properly collect fecal/urine samples
30. Describe business concepts, developed in collaboration with physical therapists, as related to establishing a physical therapy program (insurance, marketing, equipment, contract vs. employee physical therapist)
31. Describe the roles of veterinarians, physical therapists, physical therapist assistants, and veterinary assistants in the collaboration of animal rehabilitation and in regards to each one's education and skill level
32. Describe legal and practice issues surrounding animal rehabilitation
33. Describe legal and practice issues concerning the practice of physical therapy and the supervision of the PTA by a PT and a veterinary technician by the veterinarian
34. Describe regulatory issues pertaining to the practice of "physical therapy" and to the practice of veterinary medicine
35. Demonstrate the development and progression of a plan of care for animal patients
36. Deliver / supervise rehabilitative interventions
37. Devise and progress home care programs
38. Establish outcome goals for physical therapy for animals
39. Document correct and complete daily notes
40. Coordinate communication between the client and the veterinarian with rehabilitation protocols and follow-ups

VETERINARY TECHNICIANS

TITLE: Certificate Program in Animal Rehabilitation for Veterinary Technicians

At the completion of this certificate program, the veterinary technician will be able to:

- °° Overall objective: Recognize the physical therapist as the rehabilitation coordinator: Role in responding to the veterinarian as team leader and role in assisting the physical therapist in carrying out the rehabilitation program

1. List and verbalize benefits and goals of physical therapy
2. List indications for referral to physical therapy
3. Adopt terminology from a physical therapy perspective
4. Define basic animal anatomy and physiology as related to rehabilitation care
5. List common orthopedic and neurologic pathologies of the animal as related to rehabilitation care
6. Define tissue response to injury and effects of immobilization for animals
7. Cite time frames for tissue healing for animals
8. Define wound healing for animals and various methods of treatment
9. Cite the relevance of basic surgical techniques as related to rehabilitation
10. Define basic exercise physiology geared for a technician audience as related to animal rehabilitation
11. Define and demonstrate proper body mechanics when handling animals
12. Recognize pain/discomfort and normal vs. abnormal clinical presentations
13. Define and demonstrate correct safety precautions / techniques for both self and animal (towel-walking, weight-bearing status, underwater treadmill, PROM)
14. Define physical agents, their benefits and contraindications
15. Define basic mechanical modalities, their risks, contraindications and benefits
16. Explain and physically demonstrate correct application of basic modalities (ie, ice, PROM, massage)
17. Define the types of physical agents and mechanical interventions, as well as when, with supervision, to start an intervention, progress an intervention as needed and carry out interventions as outlined by the physical therapist
18. Define basic therapeutic exercise techniques, as well as, with supervision, when to start intervention or progress intervention as needed
19. Clip and prepare an animal for a modality treatment (ie, electrical-stimulation, ultrasound)
20. Cite legal and practice issues surrounding animal rehabilitation
21. Cite legal and practice issues concerning the practice of physical therapy and the supervision of the PTA by a PT
22. Define regulatory issues pertaining to the practice of "physical therapy" and to the practice of veterinary medicine
23. Define the roles of veterinarians, physical therapists, physical therapist assistants, and veterinary assistants in the collaboration of animal rehabilitation and in regards to each one's education and skill level
24. Document correct and complete daily notes
25. Perform follow-up phone calls/ visits under the guidance of a physical therapist
15. Define and demonstrate correct safety precautions / techniques for both self and animal (towel-walking, weight-bearing status, underwater treadmill, PROM)
16. Physically and verbally demonstrate knowledge and correct application of physical agents and mechanical interventions under supervision and carry out interventions or progress interventions as requested by the physical therapist
17. Define correct basic therapeutic exercise techniques, as well as carry out interventions and/or progress interventions as requested by the physical therapist
18. Demonstrate proper progression of therapeutic exercise under the supervision of a physical therapist
19. Clip and prepare an animal for a modality treatment (ie, Electrical-stimulation, ultrasound)
20. Cite and demonstrate proper technique when collecting fecal/urine samples
21. Define legal and practice issues surrounding animal rehabilitation
22. Define legal and practice issues concerning the practice of physical therapy and the supervision of the veterinary technician by the veterinarian
23. Define regulatory issues pertaining to the practice of "physical therapy" and to the practice of veterinary medicine
24. Define the roles of veterinarians, physical therapists, physical therapist assistants, and veterinary assistants in the collaboration of animal rehabilitation and in regards to each one's education and skill level
25. Document correct and complete daily notes
26. Perform follow-up phone calls/ visits under the direction/guidance of a physical therapist



Call for submissions for a future Newsletter featuring the SIG

In 2003, one edition of the *Orthopaedic Physical Therapy Practice (OP)* publication will feature the Animal Physical Therapist Special Interest Group. We would like to welcome various types of submissions for this edition and future newsletters. Types include a review article of some aspect of animal rehabilitation, original case studies, and abstracts of published articles related to rehabilitation for animals. This process will help bring information and published research literature to readers and help in the process of assessing the scope of the practice of rehabilitation for animals.

Suggested criteria for selecting articles to include in a review article or to abstract:

1. Does the article have scientifically valid content
2. Does the article contribute useful knowledge, such as professional direction, insightful point of view, patient care recommendations, cost efficiency of patient care, insight into mechanism of pathology or injury
3. Does the article address a current and relevant problem or issue

General criteria for the selection a featured literature review article

1. The topic is clearly defined
2. The topical outline is inclusive and relevant
3. The content is clearly referenced by literature or by clinical opinion

Format for Abstracts for Published Research Reports

Purpose, question, hypothesis, or problem

Brief statement of the literature background and why the study was needed

Methods (number and kinds of subjects, study design,

PHYSICAL THERAPIST ASSISTANTS (PTA)

TITLE: Certificate Program in Animal Rehabilitation for Physical Therapist Assistants

At the completion of this certificate program, the physical therapist assistant will be able to:

•• Overall objective: Recognize the physical therapist as the rehabilitation coordinator: Role in responding to the veterinarian as team leader and role in assisting the physical therapist in carrying out the rehabilitation program

1. Adopt terminology from a veterinary medical view
2. Define basic canine anatomy and physiology as related to rehabilitation
3. List common orthopedic and neurologic pathologies of the animal as related to rehabilitation care
4. List the requirements (training, skills, etc.) of animal athletes and working animals with their respective jobs
5. Define tissue response to injury and effects of immobilization for animals
6. Cite time frames for tissue healing for animals
7. Define wound healing for animals and various methods of treatment
8. Define basic medical management of common animal pathologies
9. Define basic surgical techniques as related to rehabilitation
10. Define basic exercise physiology as related to animals
11. Define and demonstrate proper body mechanics when handling animals
12. Define and demonstrate basic handling, restraint techniques, and bandaging of animals
13. Recognize pain/discomfort and potential problems (normal vs. abnormal clinical presentation, know normal vitals)
14. List animal behavior and safety issues when working with animals

instrumentation, measurements taken, procedures used, relevant aspects such as time frame, validity, reliability, objectivity, feasibility, sensitivity, meaningfulness)

Data reduction and analysis

Results

Discussion /conclusions

Clinical relevance as stated in the article

Assessment of the article by the abstractor – relevance to personal clinical practice known to the abstractor, relevance to contribution of this knowledge to basis for evidence within animal rehabilitation, terms and concepts are stated in professional language and are defined operationally

A research abstract should include the following topics with topic headings in bold and in the format indicated below.

Title: Mechanism of Injury for Stifle Arthritis in Dogs.

Authors: Doe JD, Lake AP, and Fonton LL.

Journal: J Orthop Sports Phys Ther. 2001; 20(3): 150-55.

Purpose:

Background:

Subjects:

Methods:

Data Analysis:

Results:

Discussion/Conclusion:

Clinical Relevance:

Abstractor assessment:

Format for Abstracts for Original or Published Case Reports

Purpose, question or problem

Brief statement of relevant literature/clinical background / why the study was needed

Clinically relevant description of the patient

Relevant patient history/examination, evaluation, intervention/treatment procedures, outcome measures used

Results of the rehabilitation program

Terms and concepts are stated in professional language and are defined operationally

Discussion / conclusion

Clinical relevance as stated in the article

Assessment of the article by the abstractor – relevance to personal clinical practice known to the abstractor, relevance to contribution of this knowledge to basis for evidence within animal rehabilitation, terms and concepts are stated in professional language and are defined operationally.

A case report abstract should include the following topics with topic headings in bold and in the format indicated below.

Title : Mechanism of Injury for Laminitis in a Racing Horse.

Authors: Doe JD, Lake AP, and Fonton LL.

Journal (if published): J Orthop Sports Phys Ther. 2001; 20(3): 150-55.

Purpose:

Background:

Subject Description:

Outcome Measures used:

Evaluation /Treatment Intervention:

Results / outcomes:

Conclusion:

Clinical Relevance:

Abstractor assessment (if published):

Submission Requirements

Due Date: February 20, 2003

Notification of acceptance: March 30, 2003

Submit abstracts to: Cheryl Riegger-Krugh ScD, PT
Physical Therapy Program,
University of Colorado Health
Sciences Center
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303-372-9141
cheryl.riegger-krugh@uchsc.edu

Submit the abstract on disc with the word processing application (Microsoft Word 7.0, for example) written on the disc with your name and title of abstract). Use Microsoft Word if possible.

Submit the abstract in hard copy accompanied by the Information Sheet provided below

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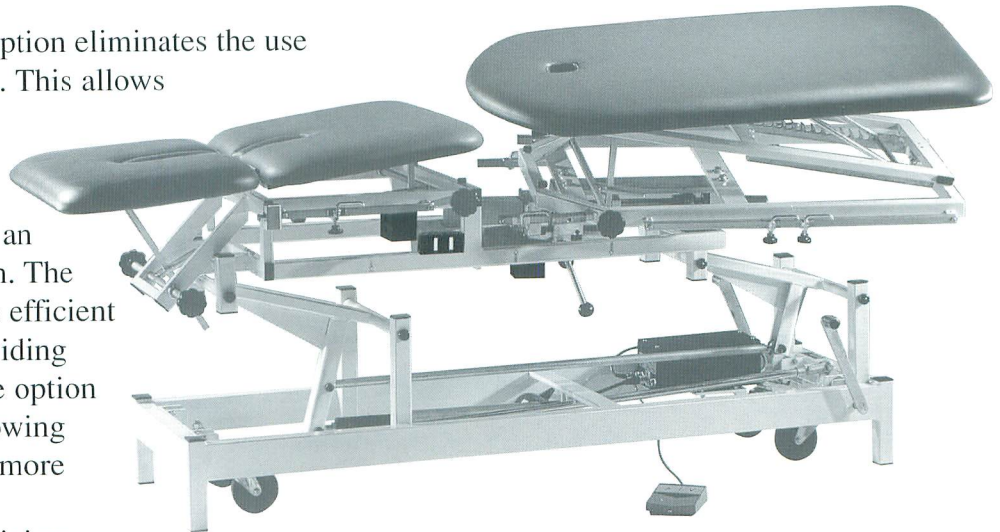
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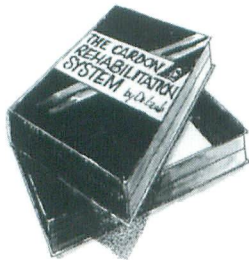
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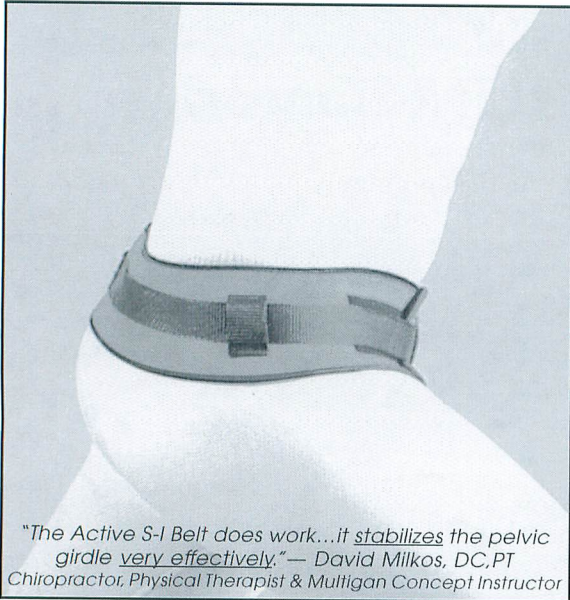
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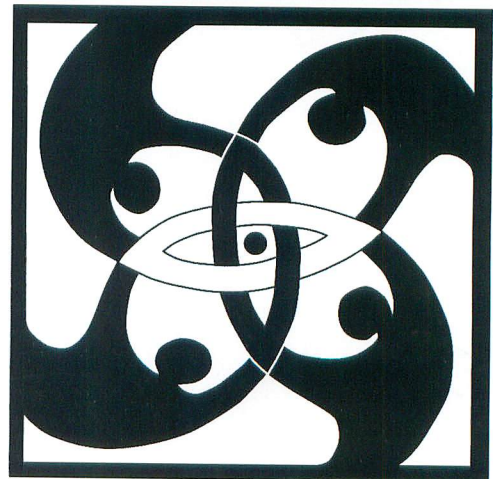
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