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CSM 2014 Highlights

The Physical Therapy Management of a Patient in a Nursing Home with a Diagnosis of Morbid Obesity Who is Completely Dependent

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Joan Mills Award Winner Letter

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**IN HONOR/MEMORIAM FUND**  
Each of us, as we pass through life, is supported, assisted and nurtured by others. There is no better way to make a lasting tribute to these individuals than by making a memorial or honorary contribution in the individual’s name. The Academy of Geriatric Physical Therapy has established such a fund which supports geriatric research. Send contributions to:  

The Academy of Geriatric Physical Therapy  |  3510 East Washington Avenue  |  Madison, WI 53704

Also, when sending a contribution, please include the individual’s name and any other person you would like notified about your contribution. If you are honoring someone, a letter will be sent to that person and if you are memorializing someone, the surviving family will be notified of your contribution.

In the field of geriatric physical therapy, we receive many rewards from our patients, associates and our mentors. A commemorative gift to the Academy of Geriatric Physical Therapy In Honor/Memoriam Fund is a wonderful expressive memorial.

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**WANTED: ARTICLES FOR GERINOTES**

**TOPICS:** Anything related to older adults  
**CLINICIANS:** Send me an article or an idea  
**STUDENTS AT ANY LEVEL:** Send me papers you wrote for class  
**EDUCATORS:** Send me student papers

Everyone loves to publish and it is easy!  
Contact Meri Goehring, GeriNotes Editor, at goehrmn@gvsu.edu
Welcome to the Academy of Geriatric Physical Therapy (AGPT)! I want to thank everyone for their effort to push this forward. We are the first component of the APTA to become an Academy. To do this took a lot of effort from everyone involved. First, we had unanimous consent to change our articles of incorporation followed by a unanimous vote for the name change at our Member’s Meeting at the Combined Sections Meeting (CSM) in Las Vegas. I especially want to thank 4 main people involved in this process. First, Cathy Ciolek, who with the now disbanded Governance Work Group, helped to develop the concept and rationale for the name change to an Academy; Greg Hartley who helped craft the actual motions with the help from our APTA Board liaison, Laurie Hack; and Jack Bennet the APTA’s legal counsel. My belief is that other Sections will follow suit within the next two years.

To celebrate the name change, the Academy has pledged $100,000 to the Foundation for Physical Therapy. We have designated $70,000 toward the Section on Geriatric Fund and $30,000 toward the Center of Excellence (COE) for Health Services/Health Policy Research campaign. In 2013, the then Section donated $50,000 to the Foundation, including a $25,000 gift to the COE. This most recent gift brings the Academy’s total contribution for the campaign to $55,000. The COE is a new initiative created by the Foundation to provide health services and health policy research training to prepare physical therapist scientists to examine physical therapy resource utilization, costs, and quality. The purpose of the research is to identify the most effective ways to deliver, organize, finance, and assess outcomes of health care services. We hope that our recent donations will help spur this initiative. Your Board of Directors believes that it is an honor for the Academy to be able to fund research in geriatric physical therapy and the new initiatives for the profession through the Foundation.

Much like the new APTA vision statement that has us “Transforming society by optimizing movement to improve the human experience,” I envision the Academy moving outside of our box and expanding to partner with other like-minded groups. With more than 5,700 members, the Section on Geriatrics was formed in 1978 to address the needs of physical therapy practitioners working with older adults in a range of practice settings. The research fund for Geriatric Research was established to support emerging investigators that are examining methods to facilitate the translation of research into current physical therapy practice with aging adults. As an Academy, it is our responsibility to enable a research rich environment that supports what we do with our patients.

At the Member’s Meeting at CSM, I was able to present awards and certificates of thanks to several members. Katie Mangione was awarded the Joan Mills Award for her years of outstanding service and dedication to the Section (Academy). This is the most prestigious award that the Academy presents and was initiated in 1980 to honor individuals who have generously, unselfishly, and creatively given of their time and gifts in service to the Section (Academy). Two people were selected to receive the President’s Award this year. The award was presented to Michelle Lusardi for her leadership as Editor of the Journal of Geriatric Physical Therapy, and Melanie Sponholz for her duties as Editor of GeriNotes for their contributions to the mission and goals of the Section (Academy), both of whom have moved on in their lives and careers.

We also recognized outgoing Committee Chairs and Board of Director members: Greg Hartley as Secretary; Cathy Ciolek as Delegate; Missy Criss as Nominating Chair, 2013-2014; Marilyn Moffat and Karen Kemnis as CEEAA Co-chairs; Bob Thomas as the State Advocate Coordinator; and Tsega Mehreteab as the Cultural Diversity Chair. I want to give special thanks to Karen and Marilyn who took the original exercise task force work and helped shape and blaze the trail with our very successful CEEAA program.

Lee Ann Eagler, the Awards Chair assisted in presentation of the awards including the Research Award winners and Tamara Gravano presented the student winners. All of these people shared their time and expertise over the past several years to make the Academy a stronger and better entity, and they all deserve a big thank you.

During our new officer installation ceremony we welcomed: Ann Medley as Secretary, Steven Chesbro as Delegate, and Veronica Southard to the Nominating Committee. Danille Parker was re-installed as Director for a second term.

Lastly, I want to give a huge shout-out and thank you to our Gold Sponsors for the meeting, Aegis Rehab and RehabCare!
2:00 PM INTRODUCTION OF MEMBERS AND GUESTS, CALL TO ORDER

Members in attendance: Jason Hardage, Lisa Dehner, Tamara Gravano, Greg Hartley, Sara Knox (Board Liaison), Jennifer Blackwood, Alice Bell, Bob Nithman, Michelle Lusardi, Amie Flores, Rania Karim.

2:05 PM OLD BUSINESS/STANDING ACTION ITEMS

I. Subcommittee on PTNow Portal (Reported by Greg on behalf of Ken Miller & Joe Libera, Co-Chairs)
   A. PTNow Updates (clinician portal)
   B. MoveForwardPT Updates (consumer portal)
   C. Group needs:
      i. Continue to submit and recommend authors, Neva Kirk-Sanchez is now working with PTNow.

II. Subcommittee on Geriatric Specialization (GCS) and Advanced Proficiency: Geriatrics for PTAs (Amie Flores, Chair; Lisa Dehner [GCS]; Greg Hartley [PTA APP])
   A. GCS Updates (specialist prep, letters, resource list, website, promotion)
      i. Video testimonials for our webpage (potential people to do them):
         1. Katy Brewer
         2. Alice will give a couple of names
         3. Jennifer Cabrera (new GCS, residency graduate from Greg’s program)
   B. AP for PTAs Update (APTA Task Force, Greg)
   C. Group needs:
      i. Need status update for HSC Focus issue for PTAs

III. Subcommittee on Residency/Fellowships (Tamara Gravano, Chair; and Greg)
   A. Residency/Fellowship Grant Update (budget)
   B. Number of Credentialed Programs
   C. Programs in Development
   D. Model Curriculum
   E. Preconference Courses (R/F 101 & Mentoring Course)
   F. Group needs:
      i. Define fellowship areas (ideas):
         1. Cognitive Impairment
         2. Optimal Aging
         3. Interprofessional Care Delivery and Telemedicine?
         4. Could we survey residency graduates to find out what areas of practice they might be focusing on?

IV. Subcommittee on CPG/EBDs (Chair, Jason Hardage)
   A. Updates on current project
   B. Plans for future CPGs
   C. Group needs
      i. Subcommittee would like to request matching funds from the AGPT for APTA grant funds in 2015.
      Will be budgeted for 2015.

V. Smartphone App Development Workgroup (Jennifer Blackwood, Coordinator)
   A. Status:
      i. GeriEDGE can look at a particular tool
      ii. Should this be something that PTNow does? CEEAA App?
      iii. Member benefit?
      iv. Jennifer to research background, proposal, cost, technical cost, revenue?

VI. Home Study Course Update: (Cheryl Anderson, Editor)
   A. Not present

VII. APTA EDGE Task Force (Michelle Lusardi/Alice Bell, Liaisons)
   A. Updates relevant to Practice Comm.
      i. Abstract reviews completed (3,000) of community dwelling older adults. Grading to begin now. Product will be SR.
      ii. GeriEDGE will likely be a permanent group for the production of SRs and EBDs. Should they then be a
permanent part of the Practice Committee? Greg will ask BOD tomorrow.

iii. GeriEDGE for EBDs will replace R/F Subcommittee. Alice Bell will be the Subcommittee Chair. Bob N.

3:00 PM NEW BUSINESS:

I. Practice Comm. Goals and Objectives relative to the Section's Strategic Plan. Assignments, priorities, specific strategies budgetary implications.
   a. Each Subcommittee Chair must write one article for GeriNotes each 12-month period. Schedule for this as below:
      i. May: Jason (CPGs/CGS)
      ii. July: Tamara/Greg (R/F)
      iii. Sept: Amie/Lisa (GCS)
      iv. November: Ken/Joe (PTNow)
   b. Liaison to CEEAA: in light of the work being done by GeriEDGE and the CPG group, there may be a need to have a Liaison from the Practice Committee to the CEEAA Course Administrator. Greg to discuss with the BOD and/or new Course Administrator.
   c. R/F Subcommittee to develop list of fellowships areas (see above, continue).
   d. See if we could survey residency program graduates to see what areas they might be working in for potential ideas for fellowships.
   e. R/F Subcommittee to prepare a proposal to convert to a SIG. (Tamara and Greg to work with Jill H., see below).
   f. CPG Subcommittee: CSM Programming tomorrow, continue CGS/CPG development.
   g. Jason to develop a proposal/budget to request Academy matching funds when APTA funds the CPG group (for 2015 budget, see below).
   h. Lisa/Amie to develop a proposal for the GCS video testimonials.
   i. Greg to request an update re: HSC for PTAs/APP.
   j. Jennifer to develop a proposal for the smart phone application, which would include costs, feasibility, objectives, strategies to partner with other Academy initiatives (CEEEA), and potential revenue.
   k. Greg to follow up with BOD re: making GeriEDGE a permanent part of the Practice Committee (completed, see below).

4:20 PM ADJOURN

Post-Meeting Notes:

• AGPT BOD approved concept of funding matching amounts (up to $10,000) for CPG Work Groups.
• AGPT BOD approved moving GeriEDGE to become a permanent part of this Committee. Structure will now be one sub-committee for EBDs made up of the CPG and GeriEDGE Workgroups. Greg will request funding for one day at CSM for each of these group Chairs.
• AGPT approved the concept of forming a R/F SIG.

PUBLIc RELAtIOns: KNOW IT, TAKE IT, RUN WITH IT

Karleen Cordeau, PT, MS, Chair, Public Relations

On February 2nd I flew to “Sin City,” Las Vegas for the 2014 APTA Combined Sections Meeting. No sinning for me just re-inspiration of my support for the Academy of Geriatric Physical Therapy. I know that I was not alone. Walking the long, and I mean long, path from the hotel to the conference rooms I studied faces. Short of being buried in the extensive list of wonderful courses to choose from I saw the smiles and the groups of therapists coming together to talk about their work.

I had the pleasure of manning our booth with great volunteers. Our goal was to thank those who were already members for their support of the Academy and to update them on current and upcoming activities. It was also a time to educate non-members on what it means to be a member and what the Academy has to offer. The booth had journals, magazines, handouts and tools for education and also offered products for sale that are also sold regularly on the website. Not to mention our raffle!

Green ribbons were handed out to members to stick onto their name tags identifying them as Academy members. Looking around searching for the 783 Academy members in attendance wearing those little green ribbons became a fun mission. Ribbons were proudly displayed to non-members as well as a sign of their unity with other members of the Academy.

Continue on page 6
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Our Academy also created an “I Spy” game. The purpose of this game was to encourage members to share their experiences at CSM with those unable to attend by way of Facebook. Members at the conference had to have their pictures taken with an Academy “spy,” post it and get “liked” by others. The therapists that received the most “likes” won prizes that were graciously donated by supporters of our Academy. These supporters were Hoggan Scientific, HCR Manor Care, Great Seminars and Books, Rehab Care and Maney Publishing. Upon review of all of the “likes” combined with the views of our site over those few days we had over 7,000 views during that event.

Looking back, all of these activities and interactions are considered public relations. The Public Relations Society of America defines public relations as “a strategic communication process that builds mutually beneficial relationships between organizations and their publics.” Mission accomplished!

The Academy offers members unlimited resources for their ongoing “public” and “public domain” relations. This includes information from regional courses, education modules, literature, newsletters, special interest groups, marketing tools, products, certifications, website and information on upcoming events. The Academy promises to offer members continued resources for member public relations activities. Having these, the Public Relations Committee encourages members to TAKE IT and RUN WITH IT!

Karleen Cordeau is Public Relations Chair for the Academy of Geriatric Physical Therapy. She is Co-Chair of the Practice Committee for the Connecticut Physical Therapy Association and their liaison to National Government Services. She is Co-Owner of The Center of Evidence and a private consultant in the area of post-acute settings for practice, compliance and reimbursement.

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EDITOR'S MESSAGE: WINTER IS OVER!!

Meri Goehring, PT, PhD, GCS

It has been a long winter for many and now that spring is finally here I want to welcome you to the May issue of GeriNotes. This issue has some important content that we hope you will enjoy. There are two case reports that provide important information regarding physical therapy involvement. One case report is about an older adult with obesity. The other is a case report regarding an older adult with disc herniation. These cases will provide readers with valuable examination and treatment ideas. These are conditions that most clinicians will need to know how to manage, as they are both quite common.

This issue also provides us a chance to remember the wonderful time we had at the Combined Sections Meeting in Las Vegas. Photographs of some of the award winners are provided. As you make plans for the future, remember that CSM in Indianapolis will be great. And, although the deadline for educational sessions has passed, keep in mind that you can still submit a poster abstract, as the deadline for submission is June 2.

I would also like to remind our readers that we would love to hear from you! I have taken the initiative to begin to contact some of the PTA members individually, so if you receive a message from the Academy of Geriatric Physical Therapy with my name, please know that we value your participation and want to have your input for GeriNotes. I am also contacting recent recipients of the Geriatric Academy awards to see if you would consider writing about your experiences.

Finally, if you have ideas on topics you would like to see addressed or know of individuals who would enjoy sharing their knowledge in GeriNotes, please let me know. I would be happy to speak with anyone regarding the content of GeriNotes. This newsletter is for you and your participation is essential to the success of GeriNotes.

Meri is an Assistant Professor in the Physical Therapy Program at Grand Valley State University (GVSU) and works as a clinician at Spectrum Center for Acute Rehabilitation at Blodgett Hospital in Grand Rapids, Michigan.
We also welcomed our incoming Secretary, Ann Medley, incoming Delegate, Steven Chesbro, re-elected Director Danille Parker and new Nominating Committee member Veronica Southard.

2014 AWARDS PRESENTED

The Academy is pleased to announce the following award recipients for 2014. The awards were presented at the Academy’s annual member meeting on February 4th at The Venetian Resort in Las Vegas, during APTA’s Combined Sections Meeting.

Joan Mills Award - Kate Kline Mangione, PT, PhD, GCS. Unfortunately winter weather kept Kate from joining us and she was sent her award and watch as our newest Joan M. Mills award winner. Bill shared these thoughts regarding Kate’s service. “Dr. Mangione has served the Section on Geriatrics as past chair of the Geriatric Specialty Council where she was largely responsible for the recertification process and helped develop the Description of Specialty Practice. She was among the first 14 specialists to earn Board Certification in Geriatric Physical Therapy. She served as interim editor of the Journal of Geriatric Physical Therapy and has authored many peer-reviewed publications and also reviews manuscripts for Physical Therapy, Topics in Geriatric Rehabilitation, and the Section’s Journal. She also volunteered for the Section’s Physical Activity Conference, was on the original CEEAA Task Force and was recently the co-chair of our GeriEdge Task Force and a panel member for the Clinical Practice Guidelines for Hip Fracture. Dr. Mangione’s research is focused on older adults and she is a strong advocate for issues affecting older adults. She is an enthusiastic volunteer and in the words of her colleagues, a wonderful faculty member at Arcadia University’s Department of Physical Therapy. Dr. Mangione has been very generous with her time and energy on behalf of the Section and the APTA. It is with great honor and respect that I present this most prestigious award on behalf of the membership of the Section on Geriatrics to Kate Mangione. This celebrated award is given to a most deserving individual. A heartfelt congratulations to you and thank you for all you do.”

President’s Award - Melanie Sponholz, MSPT, GCS, CCEP, CHC, (not in attendance) and Michelle Lusardi, PT, DPT, PhD

Clinical Excellence Award - This award for outstanding clinical practice in a geriatric health care setting was presented to Mike Studer. He is co-owner of Northwest Rehabilitation Associates, which focuses on patient satisfaction and quality care. He is dedicated to improving geriatric patients through consultation services on new technologies and quantifies gait and balance deficits, taught numerous

OUTGOING BOARD AND COMMITTEE CHAIRS RECOGNIZED BY PRESIDENT BILL STAPLES AT MEMBER’S MEETING

Greg Hartley, PT, DPT, GCS, CEEAA -Secretary - 2011-2014

Cathy Ciolek, PT, DPT, GCS - Section Delegate - 2008-2013

Melanie Sponholz – GeriNotes Editor – 2011-2013

Missy Criss – Nominating Committee Chair 2013-2014

Marilyn Moffat – CEEAA Administrator – 2009-2013

Karen Kemmis – CEEAA Administrator – 2009-2013

Tsega Mehreteab – Cultural Diversity Committee Chair – 2008-2013

Alice Bell – Liaison to Coalition of Rehab Therapies for Joint Commission – 2008-2013

Michelle Lusardi and Bill Staples
CE courses, and has been active in the Balance and Falls SIG as well as contributing to the CEEAA.

**Distinguished Educator Award** - Wendy K Anemaet, PhD, has been awarded the Distinguished Educator Award for excellence in teaching. She is an Associate Professor at Regis University. Dr. Anemaet teaches students on topics that focus on geriatrics as well as leading them through the research process. Her teaching goes beyond the classroom and included numerous research publications, books and chapters in books, and local and national presentations. Her students consider her a role model.

**Lynn Phillippi Advocacy for Older Adults Award** - This year’s recipient for the Lynn Phillippi advocacy award is David Taylor, PT, DPT, GCS. Dr. Taylor has created and expanded a service learning project for students at Mercer University. For the past two years, he has developed a weekly exercise program for an independent living facility that has improved from a chair exercise class to a circuit training class with patient goals. One of his participants has described him as “magic with old people.”

**Volunteers In Action** - William Doerhoff, PT, MS, GSC, was awarded the Volunteers in Action Award for his contributions in his community of Maumelle, AR. While serving on City Council he supported legislation and funding for Senior Wellness services as well as providing handicap access to community walking paths. He has organized health care providers to provide education and resources for diet and exercise for Maumelle’s citizens and regularly provides consultation on a variety of projects that impact the older adults of the community.

**RESEARCH AWARDS:**

**Adopt-a-Doc Awards** were awarded to the each of the following physical therapists to support their doctoral studies at the institutions named, with a brief description of their doctoral research interest described: Andrew Kittleson, DPT, University of Colorado-Anschutz Medical Campus, studying the pain experience among older adults with knee osteoarthritis; Jennifer L Vincenzo, PT, MPH, University of Arkansas, interested in the evaluation of smart-device assisted, balance assessment in older adults; and Amy Elaine Wagner, MPT, DPT, Texas Woman’s University, investigating balance and fall prevention in older adults – applications for Pilates exercise intervention.


The **Student Research Award** was awarded to Shannon E Roth, DPT, University of Nebraska Medical Center, Division of Physical Therapy Education. Shannon has been involved in research as a research assistant for study “The Effects of Dual-Task Training in Older Adults with Cognitive Impairment,” and submitted an abstract on the work which was accepted to present the findings at the International Society for Posture and Gait, international conference.

**THANK YOU BOOTH VOLUNTEERS!**

Many thanks to the many dedicated Academy members who volunteered at the booth at CSM 2014 in Las Vegas. This year was a great success as every
Membership Committee Chair, Tamara Gravano recognized Outstanding PTA Student Briana Allen!

A volunteer slot was filled! For each hour volunteered at the booth, members were eligible to be placed in a drawing for one free year of geriatrics membership. This year, the winner was Natalie Weeks-O'Neal!

Please be sure to sign up for the booth at annual conference, now known as NEXT, in Charlotte in June for another chance to win. Also at CSM, the Academy raffled off a Hand-held dynamometer. Five tickets were available to members, and one ticket to those who stopped by or referred friends to the booth. This year we received hundreds of entries. We are excited to announce that the winner of the dynamometer is Kristen Luttrell. Congratulations to Kristen on being the lucky winner of this year's raffle.

We also congratulate Jill Hackney, Briana Allen, Sherry Roberts, and Kristen Luttrell as prize winners of the PR Committee’s “Spy” Contest. They were photographed with Academy spies and received the most likes on our Facebook page! We would like to thank our sponsors for all the prizes they gave out HCR ManorCare for the Nikon Camera, Hoggan Scientific, LLC. for the Dynamometer, Great Seminars and Books for the Book and Journal and RehabCare for the Bluetooth speakers. We would like to thank everybody who participated during #CSM2014. We also thank our CSM Gold Sponsors Aegis Therapies and RehabCare.

VOLUNTEERS:
William Doerhoff
Jane Jackson
Megan Sions
Patrice Hazan
Karleen Cordeau
Josette Pierre-Philippe
Carol Schunk
Nicole Volek
Jennifer Vincenzo
Joan Norman
Sheila Thomas Watts
Bernardina Wilcox
Tracey Collins
Aileen Ledingham
Cathy Ciolek
Lisa Dehner
Barbara Gresham
Jane Killough
Veronica Southard
Meryl McCormack
Jerri Landrum
Lora Mock
Jim Mathews
Olumide Aderoba
Jacqueline Osborne
Anton du Preez
Laurel Daniels Abbruzzese
Barb Helgeson
Beth Black
Joseph Libera
Larry Hochreiter
Cory Christiansen
Tasala Rufai

Kristin Schulz
Judy Thackaberry
Sue Schuerman
Carol McFarland
Nancy Prickett
Amy Shevlin
Michelle Suchomel
Anton du Preez, SPT
Mona Fazzina
Christine Beuthin
THE PHYSICAL THERAPY MANAGEMENT OF A PATIENT IN A NURSING HOME WITH A DIAGNOSIS OF MORBID OBESITY WHO IS COMPLETELY DEPENDENT

Edward Evanchick, PT, DPT

INTRODUCTION

Statistics indicate that nearly two-thirds of all adults in the United States are overweight (defined as a body mass index (BMI) of 25 kg/m² or greater) and one-third of all adults are obese (defined as a BMI greater than or equal to 30 kg/m²). Analyses of recent trends over a 10-year period shows that the prevalence of obesity is holding steady at these high levels. Furthermore, the prevalence of extreme obesity (defined as 40 kg/m² or greater) was found to be increasing. Research has demonstrated that even those with a BMI of higher than 30 kg/m², which is considered to be mild obesity, were found to have functional limitations. In another study, people with a BMI of greater than 35 kg/m² were shown to have a high correlation of self-reported difficulty with mobility. A follow up to the proceeding study had demonstrated that subjects with above normal BMI also had limitations with their ability to efficiently transition to a standing position and with walking.

In light of the above findings, it would seem likely that those with obesity may require a greater degree of nursing homes services because of limited mobility. Admissions to nursing homes of patients who are obese have increased as the obesity epidemic has worsened. In fact, in some states, admissions of patients with obesity into skilled nursing homes were found to increase by a factor of 4 from the years 1992 to 2002, and 30% of these people were under 65 years of age which does not match the typical age distribution found in nursing homes. A critical review done on this subject reinforces these findings and shows stronger evidence that obesity increases the risk of nursing home admissions. The authors of this review also raised important questions, the most basic question being, “are nursing homes prepared to deal with the obesity epidemic?”

Hospitals have also needed to address the question of preparedness. Hospitals have been found to be deficient in meeting some basic needs of patients with obesity. These needs include not having appropriate size beds, commodes, chairs, mechanical lifts or transfer devices, and having inadequately trained staff to safely assist these patients. This is likely to be the case in nursing homes. In order to provide comprehensive care for a patient with obesity, many issues need to be addressed. In a comprehensive description of the care required for the morbidly obese individual, physical therapy is seen as being a key component in order to restore a patient’s functional mobility. It is expected that physical therapists are the health care providers who can transition the morbidly obese patient from the non-ambulatory to the ambulatory status. These expectations fall in line with one of the primary roles of the physical therapist, which is the remediation of functional limitations.

"Admissions to nursing homes of patients who are obese have increased as the obesity epidemic has worsened."

Literature that addresses the role of the physical therapist in the care of the morbidly obese patient is scant. When dealing with obese individuals, the role of the physical therapist is mainly seen as one in which the therapist uses his or her expertise in health and exercise to assist with weight reduction and lifestyle modifications. However, one research study indicates that while the majority of physical therapists have worked with patients who are obese, only slightly more than half recommended weight loss for their patients and less than half felt competent in providing weight loss interventions. The conclusion of this study was that physical therapists need more education in the area of obesity. Even therapists with higher levels of experience were unprepared to deal with this population. If physical therapists are not adequately able to address wellness issues when working with patients who are obese, can it be expected that the average physical therapist is any better prepared to help this group remediate functional limitations? Therapists who routinely work with obese patients would say no. They advocate that physical therapists need to be better prepared to meet the challenges involved in helping patients with obesity regaining mobility. Furthermore, they suggest that special training of therapists and the use of special equipment are needed to ensure the safety of the patients and the therapists.

In the field of physical therapy, like in other health care fields, it is becoming more common for physical therapists to work with obese individuals. The literature that addresses the treatment options available to physical therapists to assist an individual with obesity in regaining his or her mobility is sparse. The purpose of this case report is to describe the overall physical therapy management of a morbidly obese individual in the nursing home setting who was completely dependent with all functional mobility. Where plausible, rationale will be provided for the type of treatment selected. There are several special considerations in this case. For example, rehabilitation departments need to have appropriate equipment such as properly sized wheelchairs, appropriately rated lifts, and appropriate
sized gait belts. Another consideration is that when performing transfers with patients who are obese, more than one therapist usually is needed to assist, and all therapists assisting in these situations need to understand key points of control. One key point of control is the knees; when working with obese patients, the knees can quickly buckle leading to falls. With proper technique, falls are preventable and preventing them is the responsibility of the therapists.

**HISTORY**

The patient was a 28-year-old African American female who was admitted to the nursing home with diagnoses of sepsis, respiratory failure, renal failure, and morbid obesity (at the time of admission the patient weighed 349 pounds and her calculated BMI was 60 kg/m²). The history of her present illness was as follows: Three months prior to being admitted to a nursing home, she underwent a cesarean section to deliver her second child. The patient had returned home after the birth of her child and was completely independent. Shortly after returning home from the hospital her surgical wound dehisced, this was because the adipose tissue in her abdomen did not provide an appropriate base for the sutures to hold the wound closed. She was then readmitted to the hospital with a diagnosis of sepsis. Once in the hospital, the patient went into respiratory failure and renal failure, and as a result required dialysis and the use of a respirator. During the majority of time the patient was in the hospital, she was in the intensive care unit where she had a prolonged period of immobility that lasted nearly 3 months. Shortly after her medical condition stabilized and she could be taken off the ventilator, she was transferred to a skilled nursing home to begin her rehabilitation. At this time, she no longer required dialysis. Other diagnoses of note were anemia and hypertension.

The preceding information was obtained from the patient’s hospital records since she was unaware of what had transpired in the hospital. Social history was obtained from family members since the patient was not able to communicate effectively with the therapist during the initial encounter due to the presence of a tracheotomy tube. The patient was a mother of two children—one in elementary school and the other a newborn. She worked part time in a department store and spent the rest of her time raising her children and helping to maintain the home where she lived with her mother, brother, and aunt. Goals for the patient were stated by her mother. The primary goal was for the patient to return home and be able to care for her children.

This patient’s level of dependency, along with her size, presented challenges to the therapists beyond what they would normally encounter. The specific challenge was to progress this patient from being bedbound to her previous level of function without causing injury to either the patient or the physical therapists working with her.

**EXAMINATION**

When first evaluated by the physical therapist in the nursing home, the patient was seen bedside. The primary reason for this was that the nursing staff was concerned that they could not safely transfer the patient. Even though this was their responsibility, they deferred this responsibility to the physical therapists. Even though the physical therapists allotted time to do the transfer, it could not be done because the facility did not have a wheel chair that could accommodate the patient’s size. At the start of the initial evaluation, vital signs were taken and found to be as follows: heart rate was 98 beats per minute, blood pressure was 130/80 mm/Hg, respiratory rate was 18 respirations per minute, and her oxygen saturation level was 94%. Passive range of motion was then assessed with the head of the bed slightly elevated. Assessment of upper extremity range of motion was done visually by observing whether the patient’s joints could be moved through their expected normal ranges. Upper extremity range of motion was found to be within functional limits. Passive range of motion of the lower extremities was done in the same manner except when obvious limitations were observed, then ranges were measured using a goniometer. Most joint ranges were found to be within functional limits. However, the two movements that required further measurement were hip flexion, which was found to be 0° to 85° on both sides, and knee flexion, which was found to be 0° to 95° on both sides. These movements were limited due to excessive soft tissue. These measurements were not of concern because they did not appear to be indicative of any pathology other than the obesity. One research study has determined that even those with mild obesity have a greater incidence of limited range of motion in the lower extremities, specifically the knees, when compared to cohorts with a normal BMI. The patient was also found to have limited internal rotation of the left hip, which could not be rotated to a neutral position and was fixed.

Manual muscle testing was used to assess the strength in the patient’s upper and lower extremities. Manual muscle testing has been found to be a valid and reliable tool for this purpose. Because the patient was in bed, only certain motions could be properly tested by the evaluating therapist. Therefore, the strength of each muscle group needed to be estimated by observing the patient’s movements. The values for the manual muscle testing are found in Table 1. All muscle groups that were tested were found to be impaired. This supported the initial impression that the patient’s decreased muscle strength was the primary problem.

Levels of assistance were used to assess the patient’s functional mobility. Assessment of the patient’s functional mobility revealed she was nearly dependent with all movements. During the examination, the patient was able to initiate rolling to the left and right but in order to bring her to a sidelying position, she required the assist of two therapists to complete the movement. The next step of the evaluation was to assist the patient to a sitting position at the edge of the bed. She was completely dependent with this transition. Once sitting on the edge of the bed, the patient was completely dependent on the therapist to remain upright. Due to the patient’s level of dependency with these activities, she was scored as being dependent with all other functional mobility. The level of assistance required for various functional activities are found in Table 1.

Other areas noted during the evaluation included cognition, tone, and pain. The patient’s cognition was intact; she was oriented to person, place, and time; and she was able to
follow directions appropriately 100% of the time. The patient’s tone was generally low throughout her extremities and trunk; this was attributable to her prolonged period of immobility. The patient also reported back pain when seated at the edge of the bed, but she reported that her pain decreased after sitting for a few minutes. Sensation was not tested and she had no open wounds.

The Barthel Index was being used in this case report to help objectify the outcome. This index scores the patient on their level of independence in 11 different areas including: feeding, moving from wheelchair to bed, personal hygiene, getting on and off the toilet, bathing, walking on level surfaces, propelling a wheelchair, climbing stairs, dressing and undressing, continence of bowel, and continence of bladder. The Barthel Index has been found to be valid and reliable. The examination confirmed the initial impression that decreased muscle strength was the primary impairment of this patient. According to the Guide to Physical Therapist Practice, this patient’s treatment would be best described under practice pattern 4C Impaired Muscle Performance. The plan was to see this patient 5 times per week and to proceed with a strengthening program and functional training as appropriate. To implement a safe and effective treatment plan successfully, the therapists involved would need to consider special treatment approaches due to her diagnosis of morbid obesity. Progress, if achieved, was expected to be slow; therefore, the patient’s goals would be reviewed on a monthly basis and updated as needed.

## INTERVENTION

### Week 1

Initially the patient was being seen bedside because an appropriate size wheelchair had not yet been obtained. During the initial sessions, treatment consisted of rolling activities and getting the patient seated at the edge of the bed; both were being done to increase trunk strength. Once at the edge of the bed, special attention needed to be paid to lower extremity positioning. Since the patient did not have the strength to sit on her own, keeping her hips and knees as close as possible to a 90° angle was essential. With the hips being kept in a position close to a 90° angle, there was less risk that the patient could slide off the bed; and with the knees at a 90° angle, the patient had a better base of support that promoted weight bearing through the legs. Two therapists were required during these sessions and a rehab aide also was present to assist the therapists.

### Weeks 2-4

When a wheelchair was obtained for the patient and she was able to get up in the chair, trunk strengthening was addressed by having her lean forward and laterally to reach for objects while encouraging her not to use the backrest for support. With this activity, as long as the patient’s lower extremities were positioned properly, weight bearing was also occurring through the legs. On a few occasions, the patient was unable to get out of bed because of nausea, and on one to two other occasions, the patient was unable to get out of bed because of a problem with the Hoyer lift. In these situations lower extremity strengthening was done with the patient in the bed, which included performing active range of motion exercises. As the patient progressed and was able to move her extremities through the full available range of motion, manual resistance was applied by the therapist; however, this type of exercise was not emphasized because the therapist could not provide enough resistance to effectively strengthen the patient. Due to the patient’s large size, it was theorized that all exercises would need to be done against heavy resistance in order to return her to a level of strength that would enable her to stabilize and mobilize her body; therefore, activities that promoted weight bearing were used whenever possible. This theory was supported by a randomized trial in which the authors found that strengthening patients with weight bearing exercises helped improve their functional mobility to a greater degree than patients that performed nonweight-bearing exercises. As the patient’s trunk control improved, wheelchair pushups were introduced into the therapy program. Initially the patient was unable to lift herself from the chair; regardless, by performing this exercise isometrically she was able to use her own weight as resistance while accepting more weight onto her lower extremities.

### Table 1. Manual Muscle Strength and Levels of Assistance at Initial Evaluation

<table>
<thead>
<tr>
<th>Manual Muscle Strength</th>
<th>Level of Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>L Shoulder Flexors = 2/5</td>
<td>Rolling R = Maximum Assistance of 2 Therapists</td>
</tr>
<tr>
<td>L Shoulder Flexors = 2/5</td>
<td>Rolling L= Maximum assistance of 2 Therapists</td>
</tr>
<tr>
<td>L Elbow Flexors = 3/5</td>
<td>Sitting at Edge of Bed = Dependent</td>
</tr>
<tr>
<td>R Elbow Flexors = 3/5</td>
<td>Bed Mobility:</td>
</tr>
<tr>
<td>R Elbow Extensors = 2+/5</td>
<td>Sit &lt; &gt; Supine = Dependent</td>
</tr>
<tr>
<td>L Elbow Extensors = 2+/5</td>
<td>Transfer:</td>
</tr>
<tr>
<td>R Hip Flexors = 2+/5</td>
<td>Bed &lt; &gt; Wheelchair = Dependent</td>
</tr>
<tr>
<td>L Hip Flexors = 2+/5</td>
<td>Ambulation = Dependent</td>
</tr>
<tr>
<td>R Hip Extensors = N/A</td>
<td>Stair Climbing = Dependent</td>
</tr>
<tr>
<td>L Hip Extensors = N/A</td>
<td></td>
</tr>
<tr>
<td>R Knee Extensors = 2+/5</td>
<td></td>
</tr>
<tr>
<td>L Knee Extensors = 2+/5</td>
<td></td>
</tr>
<tr>
<td>R Knee Flexors = N/A</td>
<td></td>
</tr>
<tr>
<td>L Knee Flexors = N/A</td>
<td></td>
</tr>
<tr>
<td>R Ankle Dorsiflexors = 2+/5</td>
<td></td>
</tr>
<tr>
<td>L Ankle Dorsiflexors = 0/5</td>
<td></td>
</tr>
<tr>
<td>R Ankle Plantar Flexors = 2+/5</td>
<td></td>
</tr>
<tr>
<td>L Ankle Plantar Flexors = 2/5</td>
<td></td>
</tr>
</tbody>
</table>
Weeks 5-6
After one month, the patient had enough strength in her trunk and extremities to transfer from the bed to the wheelchair and from the wheelchair to the bed using a slide board. Two therapists were needed to assist with this transfer. The next goal was to get the patient to a standing position. Initially the therapists had difficulty bringing the patient to a standing position; therefore, attempts were made to use a mechanical lift. Even though the lift had a sufficient weight capacity, it could not be used because the patient could not be properly positioned in the lift due to her body proportions. With multiple attempts and extensive effort of 3 therapists, the patient was able to pull to a standing position. Once standing, she was encouraged to stay upright as long as possible. As the patient progressed to higher level activities, previously learned tasks (such as bed mobility and slide board transfers) were being practiced to increase independence with these activities. The emphasis of therapy at this point was on performing functional tasks. Precedence for this approach was provided by two studies which indicated that task specific training was an effective means of improving a person’s ability to transfer, and it was even more effective than performing resistance exercises.23,24 The patient was progressing steadily but after 6 weeks in therapy she suffered a setback and was readmitted to the hospital with gallstones where she remained for two weeks. While in the hospital, the patient had a cholecystectomy.

Weeks 7-8
After being readmitted to the nursing home to continue with her rehabilitation, the new evaluation revealed that the patient was still able to transition sit to supine and supine to sit with assistance, but she was unable to transfer bed to wheelchair with the slide board. Using the previous treatment rationale and activities, the patient quickly regained her previous status, which included performing slide board transfers with assist and maintaining standing with the assist of two therapists. Even though the patient was able to maintain standing, she was unable to transition from the sitting to the standing position using proper technique and both the therapists and the patient were being taxed unnecessarily. The patient was only able to stand by pulling up on the parallel bars while two therapists assisted. At this point, the patient’s progress in the area of transfers was stagnated and unfortunately, the therapists did not know how to properly facilitate this movement with the patient.

Weeks 9-17
Being aware that deficiencies in the therapists’ skill level were partly responsible for the patient’s inability to improve her transfer status, one of the therapists from the rehab team attended continuing education specifically to learn proper transferring techniques for patients with obesity. The day after receiving this education, the therapists were able to facilitate a proper sit to stand transition with the patient. The patient was now able to push up to a standing position with significantly less assist than she required previously. At this point, transfers were practiced repetitively during the therapy sessions to improve the consistency with which the patient was able to get to the edge of the bed and transition to standing. Once the patient was able to get herself to a standing position with only minimal assist, staff members working on the unit were trained to assist her with transfers to augment the training done in therapy. Over the next two months, the patient became independent with transfers. One other technique used to achieve independence with transfers was to have her transfer from an elevated surface using proper technique, then gradually decreasing the surface height until she was able to stand up independently from a 17-inch high surface, which was the height of her wheelchair.

Weeks 10-22
Gait training was initiated as the patient became more and more independent with transfers. The patient was unable to use the parallel bars for gait training because her wheelchair was too large to be placed inside the parallel bars; therefore, gait training was initiated with the standard walker. Gait training was only attempted after the patient was able to demonstrate the ability to accept her full body weight on each lower extremity. During the first month, a gait belt was used and a wheelchair follow was provided at all times to promote safety during gait training. Over the course of therapy, the patient was progressed from a standard walker, to a rolling walker, to a straight cane. Due to a left foot drop, the patient also needed to be fitted and trained with a molded ankle foot orthosis. Another special consideration for this patient was that the therapist guarding the patient had to be careful not to block the patient’s lateral trunk lean during gait. Excessive lateral lean was a technique this patient used to help advance the contralateral limb.

Weeks 15-22
Since the long-term goal was for the patient to return home, stair training needed to be addressed. By the time this task was undertaken, the patient’s strength had improved greatly and stair training was routine. A home evaluation was also done before the patient returned home in order to assess if she could do so safely. Only minor modifications needed to be made to the home environment, the most significant of which was to discard some loose rugs that presented a fall risk. Finally, equipment needed to be ordered for the patient including a heavy duty walker, an appropriately sized hospital bed, and an appropriately sized wheelchair to be used when going out into the community. Upon discharge, outpatient therapy had been set up for the patient.

OUTCOME
The outcome measurements used in this case report were levels of assistance required to complete functional activities and the Barthel Index. Even though muscle strength was recorded at the time of the initial evaluation, this was only done to assess the patient’s level of impairment as it pertained to muscle strength, since this was believed to be the patient’s major deficit. At the time of the initial evaluation, the patient was dependent with all functional mobility. Functional areas considered in the rehabilitation of this patient included sitting at the edge of the bed, transitioning from lying in the bed to sitting at the edge of the bed, transferring sit to stand, stand to sit, transferring bed to wheelchair, wheelchair to bed, ambulation status, and ability to climb stairs. The patient’s status was recorded on a monthly basis. In this
case, the patient had an unplanned discharge to the hospital; her status at this point is represented in the column labeled unplanned discharge. Table 2 summarizes the functional outcomes. The levels of assistance used in the chart are defined as follows: dependent is defined as the patient performs less than 25% to the activity; maximum assist is defined as the patient performs 25% to 50% of the activity; moderate assist is defined as the patient performs 50% to 75% of the activity; minimum assist is defined as the patient performs greater than 75% of the activity; contact guard assist is defined as the patient requires contact from the therapist to help provide stability during a movement in order to maintain balance; supervision is defined as the patient requires instruction or cues to properly and safely complete the activity; and independent is defined as the patient performs the activity without any assist or cueing from the therapist. The levels of assistance being used in this case have not been specifically tested for validity and reliability; however, these levels are widely used in therapy clinics due to their face validity.

At the time of the initial evaluation, the patient scored 0 on the Barthel Index and at the time of discharge the patient scored 85. Areas of deficiency were bathing and dressing since the patient was not completely independent in these areas; she scored 0 and 5 respectively. The patient scored only 5 out of a possible 10 in stair climbing because she only demonstrated the ability to climb 4 stairs and not a full flight, but she only needed to negotiate 4 stairs to enter and leave her home. Table 3 summarizes the Barthel scores at initial evaluation and at discharge.

**DISCUSSION**

The purpose of this case report was to describe the physical therapy management of a completely dependent individual with morbid obesity, and describe the treatments that were used to improve her functional mobility. Even though this case had a positive outcome, it illustrated some of the challenges involved in managing patients with significant functional limitations.
shortcomings institutions and health care professionals have when treating patients with obesity. First, the institution was unprepared and did not have a wheelchair to accommodate this patient, although it is unlikely that this shortcoming had a negative effect on the patient’s treatment. Second, the nursing staff was not adequately trained and therefore reluctant to move the patient. Due to their inadequate training, the nursing staff was likely fearful of injury to themselves or the patient. These shortcomings were also identified as being an area of concern for hospitals and skilled nursing homes in previous literature. It is the physical therapist that is in a prime position to identify and rectify these areas of deficiency whether it is through acquiring the proper equipment or training staff to assist these patients properly and safely.

As far as the physical therapy was concerned, the patient benefited from the therapy program created by the therapist, which emphasized weight-bearing exercises to help strengthen this individual. However, the treating physical therapists were not completely prepared to implement the weight bearing activities in a safe and effective manner until special training was obtained. Through this training, the therapist learned how movement patterns differ between people who are obese and those who are not. By understanding the different movement patterns in this group, the therapists were able to facilitate familiar patterns instead of trying to force the patient to move in unfamiliar ways. The training also provided insight on using gait belts and slings to elevate safely the patient onto her feet while preventing her knees from buckling. This all needed to be done without mechanical lifts since this equipment was not available. In this specific therapy department, there were 3 physical therapists with over 30 years of combined experience; regardless of their clinical experience, further training was needed. Once one of the therapists learned how to assist the patient properly, her transfer status improved immediately and it became much easier to assist the patient with weight bearing exercises and functional training safely. Only one other study has addressed the preparedness of physical therapists as it pertains to the treatment of patients with obesity. This case report has demonstrated similar findings, specifically that the physical therapists in this clinic were not completely prepared to address the issues of patients with obesity and that years of experience was of no benefit in this area.

One possible explanation as to why the therapists had difficulty mobilizing this patient could be that the therapists were unaware of the different movement patterns used by individuals with obesity. One research study looking at the movement patterns in this group concluded that forward flexion of the trunk is restricted in both sitting and standing that may adversely affect their ability to perform certain functional movements. It is also likely that the excessive lateral sway observed during gait is a compensatory strategy used to compensate for range of motion restrictions in the hips. By better understanding the movement patterns of patients who are obese, therapists may gain insight as to why patients are unable to perform certain functional activities, thereby providing a basis on how therapists should go about correcting these functional limitations.

In this case, gait training was initiated soon after the patient was able to transfer to a standing position. A critical question is, what indicated that this patient was ready for gait training? The physical therapists used the criteria that the patient was able to transition to a standing position although with assist and that the patient was able to accept her full body weight onto each lower extremity. This approach was partially supported by a research study that determined that the ability to move sit to stand moderately correlates to walking independence. Prior to initiating gait training, it would have been much more prudent in this case to employ the Egress test to better protect the patient and the therapist. The Egress test is used to determine if obese patients are ready to support their weight for transfers. This test requires that the patient perform 3 repetitions of a sit to stand transfer, 3 steps marching in place and 3 repetitions of advancing each foot forward and back, as an indicator of the patient’s preparedness to take steps.

Safety of the patient and therapists needed to be considered during every step of the therapy intervention, but the therapists could not become apprehensive about treating this patient or she would likely not have progressed. Considering that research has found that work related injuries to physical thera-
Pist occur most often when transferring patients,28,29 one might suspect that therapists may be apprehensive about working with this population especially with those who are completely dependent. In this case, even though the overall management of this patient may have been handled better in certain aspects, with special considerations and special training, the therapists were able to challenge the patient at an appropriate level while keeping both parties safe.

Since there is very little research that combines the subjects of physical therapy and obesity, it appears the opportunities for further research are vast. One of the most basic questions to investigate would be, do most physical therapists feel adequately prepared to remediate functional limitations in individuals with obesity, and if not why? Another question may be, what are physical therapists doing to address the functional limitations in patients with obesity and have these treatments been effective? Once these basic questions are answered, broader research can be done to assess the effectiveness of different treatment methods. The noted shortcomings of the physical therapists in this case may indicate that physical therapy schools need to do more to prepare their students for cases such as this. Specifically, schools may need to educate their students on the unique movement patterns of patients with obesity and safe transfer techniques that are critical to preventing falls and injury.

CONCLUSION

As obesity has become more prevalent in the United States, the number of nursing home admissions of people with obesity has increased. The treatment of this group requires special considerations of all health care providers, including the physical therapist. This case report describes the physical therapy management of a 28-year-old morbidly obese female who was dependent with all functional activities. Following a treatment plan that emphasized weight bearing exercises and functional training, the patient regained a level of independence that enabled her to return home to her previous living arrangement. In order to progress the patient through the rehab process safely, extra training was necessary for the therapists. This raises the question of whether physical therapists are adequately meeting the needs of patients with obesity. Specific research may be needed to assess the preparedness of physical therapists to work with this group.

REFERENCES


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**Congratulations To Our 2014 Honors And Awards Recipients**

The American Physical Therapy Association (APTA) has announced the 2014 Honors and Awards Program recipients have been selected by APTA’s Board of Directors to receive the following awards:

<table>
<thead>
<tr>
<th>Name</th>
<th>Award</th>
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<tbody>
<tr>
<td>Dale Lynn Avers, PT, DPT, PhD, FAPTA</td>
<td>Catherine Worthingham Fellow of APTA</td>
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<tr>
<td>Meryl I. Cohen, PT, DPT, MS, CCS, FAPTA</td>
<td>Catherine Worthingham Fellow of APTA</td>
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<tr>
<td>Kathleen Kline Mangione, PT, PhD, FAPTA</td>
<td>Catherine Worthingham Fellow of APTA</td>
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<tr>
<td>Cathy Haines Ciolek, PT, DPT, GCS</td>
<td>Lucy Blair Service Award</td>
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<tr>
<td>William H. Staples, PT, DHSc, DPT, GCS</td>
<td>Lucy Blair Service Award</td>
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<tr>
<td>Mary C. Thompson, PT, PhD, GCS</td>
<td>Lucy Blair Service Award</td>
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<tr>
<td>Yi-Chung “Clive” Pai, PT, PhD</td>
<td>Marian Williams Award for Research in Physical Therapy</td>
</tr>
<tr>
<td>Gemma Longfellow, PT, GCS</td>
<td>Signe Brunnström Award for Excellence in Clinical Teaching</td>
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<tr>
<td>Sandra A. Billinger, PT, PhD, FAHA</td>
<td>Margaret L. Moore Award for Outstanding New Academic Faculty Member</td>
</tr>
<tr>
<td>Lee Dibble, PT, PhD, ATC</td>
<td>Chattanooga Research Award</td>
</tr>
<tr>
<td>Samantha Paige Grubb, SPTA</td>
<td>Mary McMillan Scholarship Award</td>
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</tbody>
</table>

**Award recipients will be recognized at APTA’s Honors and Awards Ceremony on Thursday, June 12, 2014, from 5:30 pm – 6:30 pm, during the NEXT Conference and Exposition in Charlotte, North Carolina.**

*Edward Evanchick became a PTA in 1997. He received his MSPT in 2002, his tDPT in 2010, and is CEEAA certified. He currently works in an assisted living facility with aging adults, and in Integrated Medical Center’s outpatient practice in Butler, NJ.*
Dear Colleagues,

I received an email from President, Bill Staples right after CSM this past February. He informed me that I was the recipient of the Joan Mills Award for 2014! I was in shock. I missed the meeting at the last minute because of the ice storm that hit our home and left us without power, heat, or water for 5 days.

I cannot thank the Awards Committee enough for considering me for this most important Section award. I am so humbled to be standing among a group of previous recipients who have helped make the Academy what it is today, and more importantly, who have improved care provided to older adults.

I have been a PT for 29 years and all of those years have been a member of our Section. The wisdom of Joan Mills is still manifest today. In our historical documents, Joan is quoted as saying that she wanted to… “improve physical therapy care for long-term patients by generating educational resources, research, and setting up standards of care.” ([Our Rich History](http://www.geriatricspt.org/pdfs/Section-on-Geriatrics-History.pdf); accessed on 3/15/2014). We have come a long way in addressing these issues due to the contributions of many of you, our past leaders and previous award recipients. Over these past several decades, I have tried to improve care for older adults through clinical care, through service to the Section (Academy) and to the APTA, through education of PTs and PT students, and through research. Older adults, especially as they become more frail, need our knowledge and skills to keep their quality of life at its highest levels. If we all continue to keep their needs at the forefront, our mission to provide best practice physical therapy and to advocate for optimal aging will be easily attained.

Thank you again for this spectacular honor and for allowing me the opportunity to serve our profession.

Sincerely,
Kathleen Kline Mangione, PT, PhD, FAPTA

Kathleen Kline Mangione was among the first 14 specialists to earn Board Certification in Geriatric Physical Therapy. Dr. Mangione’s research is focused on older adults. She has had continuous federal or foundation funding beginning with her doctoral work. She has given numerous invited and scientific presentations and has published in premier journals for physical therapy and geriatrics.

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**WHAT HAPPENS IN VEGAS DOESN'T ALWAYS STAY IN VEGAS!**

Tiffany Hilton, PT, PhD & Sue Wenker, PT, MS, GCS
Academy of Geriatrics Physical Therapy Program Co-Chairs

Learning, fun, and networking were experienced by all at CSM 2014. Members unanimously voted to approve our new name, “Academy of Geriatric Physical Therapy” at the Member’s Meeting. Programming jumpstarted with 3 preconference courses and continued through Thursday afternoon with educational sessions, SIG meetings, and Academy of Geriatric Physical Therapy sponsored events. We want to say thank you to the organizations that supported the Academy and CEEAA courses: Aegis Therapies, RehabCare, Total Gym, Hygenic, Med Patent USA, and McGraw Hill publishers. We hope to see all of you at CSM 2015, February 4-7, 2015, in Indianapolis, IN, for another exciting meeting. Abstract/Poster submissions are due by June 2, 2014.
THE EFFECTS OF STABILIZATION TRAINING ON PAIN AND FUNCTION IN A PATIENT WITH LUMBAR DISC HERNIATION: A CASE REPORT

Mitzi Ouano Cabahug, PT, DPT, CKTP

INTRODUCTION

A herniated disc occurs when the spongy, soft material that cushions the bones of the spine (vertebrae) slips out of place or becomes damaged. While recent studies have discussed pharmacological and surgical management options, the current literature available for effectiveness of lumbar stabilization training, a conservative approach in physical therapy, is limited. The purpose of this case report is to investigate the effects of stabilization training on pain and function in a patient, specifically, with a diagnosis of lumbar disc herniation and intolerance to medication side effects.

BACKGROUND AND PURPOSE

Nearly 80% of people experience low back pain at a certain time during their lives. Low back pain (LBP) in the United States is the second most frequent reason for visit to physicians, fifth ranking cause of administration to hospitals, and the third most common cause of surgical procedures. Disc herniation belongs to 97% of mechanical factors that causes low back pain. A herniated disc occurs when the spongy soft material that cushions the bones of the spine (vertebrae) slips out of place or becomes damaged. Any part of the spine can be affected. The most commonly affected are the lumbar (L4-5) followed by the lumbosacral area (L5-S1). When a herniated disc presses on a nerve, it can cause pain, numbness, and weakness in the area of the body where the nerve travels.

Lumbar disc herniation remains among the most common diagnosis encountered in clinical practice. Treatment approaches involve a variety of medications, steroid injections, physical therapy, and surgery. One study by Rhee et al noted commonly prescribed medications including nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, muscle relaxants, and opioid pain medications. The NSAIDs have been helpful for acute management of LBP but a meta-analysis of the literature demonstrated no benefit in treatment of radiculopathy compared with a control group (odds ratio=0.99). Corticosteroids are administered orally or by injection; however, two RCTs showed no benefit (odds ratio=0.8) and the other showed modest benefit (odds ratio=2.0). Another study by Eisenberg et al discussed that the medication, lamotrigine, showed significant improvement in patients with chronic sciatica (p < 0.05).

Gagne et al discussed a case report of a 49-year-old male patient with lumbar disc herniation; patient was treated with physical therapy involving extension exercises and mechanical traction. Results of this study were no pain, increased functional status, and decreased pain-related disability after 14 visits. Brosseau et al also discussed positive results of physical therapy modalities used in treating disc herniation. An outcome study by Saal et al noted that outcomes of nonoperative treatment have been better in studies employing active lumbar stabilization exercises than there were in older controlled trials that employed passive treatment modalities.

Since medications produce adverse side effects, physical therapy can be an alternative approach towards treatment of pain related to disc herniation. Lumbar stabilization exercises have been proven to have moderate evidence in treating back pain and are used by many therapists. Therefore, the purpose of this case report is to explore the effects of stabilization training on pain and functional performance in a patient with lumbar disc herniation. Another objective is to determine if this type of treatment can be a method that helps decrease the need for pain medications, reducing adverse side effects.

CASE DESCRIPTION

Patient History

Patient “LM” was a 69-year-old female who was referred to physical therapy on February 23, 2011, with a diagnosis of lumbar disc herniation and sciatic pain. Her MRI findings confirmed narrowing of the spinal canal at L4-5, disc protrusion at L5-S1 level and impingement on S1 nerve root. Chief complaint was pain at the lumbosacral area and left buttock with occasional numbness and tingling sensation at the left posterior leg. On a numeric pain scale validity and reliability of 0 to 10, 0 being “no pain” and 10 being “severe pain,” she verbally rated her pain at that time as 10/10. Initial medication given for pain was Advil (ibuprofen), but there was minimal symptom relief. This resulted in her limited ability to walk with a rollator walker to her meals and perform independent self-care. After a week, LM’s primary care physician ordered Advil to be changed to Celebrex (celecoxib). This new medication lowered her pain to 5/10; however, LM complained of frequent episodes of dizziness, nausea, drowsiness, and stomach upset while on this medication. LM also experienced palpitations several times. Her past medical history includes hypertension, GERD, moderate OA of L3-5 vertebrae and right knee, and DVT. Patient admitted compliance in taking her medications (refer to Table 1) as instructed.

On March 9, 2011, LM was brought to the hospital due to excruciating pain on her lower right thigh. Clinical findings showed a blood clot in that area and the patient had to be placed on bed rest for 7 days with Coumadin treatment. Celebrex had to be discontinued due to interaction with Coumadin. Tylenol...
extra strength was prescribed as needed. This period of immobility caused LM to be generally deconditioned. Upon her return to the assisted living facility, LM was very concerned of falling when standing and requested a wheelchair transport. Her low back pain increased to an 8/10 intensity and worsened with prolonged periods of sitting (>30 min), standing (>4 min.), reaching for clothes in the closet, and transitional movements. Numbness and tingling sensation on the left posterior leg woke her frequently at night. LM had not been participating in routine recreational activities. LM expressed that her goals in physical therapy are to relieve back pain and walk again with her rollator walker without the fear of falling. LM expressed frustration with her limitation in pain medications due to side effects and interaction with Coumadin and hoped for an alternative approach that would relieve her symptoms. An informed consent was obtained from LM prior to participation in this study.

### Examination

#### Systems Review

During the initial evaluation (IE), blood pressure, heart rate, and respiratory rate were monitored and remained stable throughout the session. Cognitive assessment revealed LM was alert and oriented to person, place, and time. LM followed multistep commands and make her needs known. Skin was intact over the involved areas without evidence of increased temperature, edema, or erythema. Neurological

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Indications &amp; Therapeutic Action</th>
<th>Route of Administration</th>
<th>Side Effects</th>
<th>Normal Dose Range &amp; Patient Dose</th>
</tr>
</thead>
</table>
| Advil (ibuprofen) | **Indications**: Rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, primary dysmenorrhea, gout, dental pain, musculoskeletal disorders, fever, migraine  
**Therapeutic Action**: Inhibits prostaglandin synthesis by decreasing enzyme needed for biosynthesis: analgesic, anti-inflammatory, antipyretic | PO via tablets. For postcataract surgery, available in ophthalmic solution | CNS: Dizziness, headache, drowsiness, fatigue, insomnia, anxiety, depression, tremors, confusion  
CV: Tachycardia, peripheral edema, palpitations, dysrhythmias, CV thrombotic events, MI, stroke  
EENT: Tinnitus, hearing loss, blurred vision  
GI: Nausea, anorexia, vomiting, diarrhea, jaundice, hepatitis, constipation, flatulence, cramps, dry mouth, peptic ulcer, GI bleeding  
GU: Nephrotoxicity  
HEMA: Blood dyscrasias, increased bleeding time INTEG: rash, pruritus, sweating  
SYST: Anaphylaxis | Normal dose: Adult: PO 200-400 mg q4-6hr, max 3.2 g/day; OTC use max 1200 mg/day  
Child: PO 4-10 mg/kg/dose q6-8hr  
Patient dose: 100 mg/day |
| Celebrex (celecoxib) | **Indications**: acute and chronic osteoarthritis, RA, acute pain, ankylosing spondylitis  
**Therapeutic Action**: NSAID inhibits prostaglandin synthesis by selectively inhibiting the enzyme, cyclooxygenase 2 | PO via caps | CNS: dizziness, fatigue, anxiety, depression  
CV: stroke, MI, tachycardia, CHF  
GI: nausea, vomiting, constipation, gastritis  
HEMA: platelet aggregation  
INTEG: Steve-Johnson syndrome  
RESP: dyspnea | Normal dose: 400 mg initially, 200 mg bid on subsequent days  
Patient dose: 200 mg bid |
| Senormin (atenolol) | **Indications**: mild to moderate hypertension, angina pectoris, MI (IV use)  
**Therapeutic action**: blocks stimulation of B-adrenergic receptor within vascular smooth muscle; decreases heart rate | PO via tablets | CNS: insomnia, fatigue, dizziness, memory loss, hallucinations, depression  
CV: profound hypotension, CHF  
GI: nausea, diarrhea, vomiting  
RESP: bronchospasm, dyspnea, wheezing | Normal dose: Adult PO 25-50 mg/day  
Patient dose: 25 mg daily |
<table>
<thead>
<tr>
<th>Medicine</th>
<th>Indications</th>
<th>Therapeutic Action</th>
<th>Route</th>
<th>CNS:</th>
<th>GI:</th>
<th>GU:</th>
<th>HEMA:</th>
<th>TOXICITY:</th>
<th>Normal Dose:</th>
<th>Patient Dose:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tylenol extra</td>
<td><strong>Indications</strong>: mild to moderate pain or fever, arthritis, headache, OA</td>
<td>blocks pain impulses peripherally in response to inhibition of prostaglandin synthesis; antipyretic action</td>
<td>PO/RECT</td>
<td>stimulation, drowsiness</td>
<td>Nausea, hepatotoxicity, Gl bleeding</td>
<td>renal failure</td>
<td>leukopenia, neutropenia, thrombocytopenia</td>
<td>hypersensitivity</td>
<td>cyanosis, anemia, delirium, seizures, coma</td>
<td>Adult and child &gt;1yr: PO/RECT 325-650 mg q4-6hr, max 4 g/day</td>
</tr>
<tr>
<td>strength (acetaminophen)</td>
<td><strong>Therapeutic action</strong>: blocks pain impulses peripherally in response to inhibition of prostaglandin synthesis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Patient dose: 650 mg q4-6hr prn</td>
</tr>
<tr>
<td>Nexium (esomeprazole)</td>
<td><strong>Indications</strong>: GERD, erosive esophagitis, duodenal ulcers</td>
<td>suppresses gastric secretion by inhibiting hydrogen/potassium ATPase in gastric parietal cell</td>
<td>PO/IV</td>
<td>Headache, dizziness</td>
<td>Gl: diarrhea, nausea, stomach pain, constipation gas, dry mouth</td>
<td>MISC: heart failure</td>
<td>INTEG: rash</td>
<td></td>
<td>Normal dose: PO 40 mg/day x 10 days</td>
<td></td>
</tr>
<tr>
<td>Dyrenium (triamterene)</td>
<td><strong>Indications</strong>: edema, hypertension</td>
<td>acts on distal tubule to inhibit reabsorption of sodium, chloride; increase potassium retention</td>
<td>PO via caps</td>
<td>weakness, headache, dizziness, headache, fatigue</td>
<td>CV: hypotension, CHF, bradycardia</td>
<td>ELECT: hyponatremia</td>
<td>Gl: nausea, diarrhea, vomiting</td>
<td>increased BUN, creatinine</td>
<td>INTEG: photosensitivity</td>
<td>Normal dose: 50-100 mg bid after meals Patient dose: 37.5/25 mg daily</td>
</tr>
<tr>
<td>Coumadin (warfarin)</td>
<td><strong>Indications</strong>: DVT, MI, arterial embolism prophylaxis, post MI, stroke prophylaxis</td>
<td>depresses hepatic synthesis of vit K-dependent coagulation factors(II, VII, IX, X)</td>
<td>PO/IV</td>
<td>Fever, dizziness, fatigue, headache, lethargy</td>
<td>Angina, chest pain, edema, hypotension, syncope</td>
<td>Gl: diarrhea, nausea, vomiting, hepatitis</td>
<td>Gl: hematuria</td>
<td>HEMA: hemorrhage, leukopenia, eosinophilia, petechia</td>
<td>Ms: bone fractures INTEG: rash, pruritus SYST: Anaphylaxis, coma, purple toe syndrome</td>
<td>Normal dose: Adult PO/IV 2.5-10 mg/day x 3 days Geriatric PO/IV 2-10 mg/ day Patient dose: PO 2 mg tablet daily except Tuesday and Thursday</td>
</tr>
</tbody>
</table>

Symptom present was numbness and tingling sensation on the left posterior leg. Review of musculoskeletal systems showed active and passive range of motion of trunk and bilateral lower extremities were grossly within normal limits (WNL) except active right thoracic lateral flexion (-50%), left thoracic lateral flexion (-25%), lumbar flexion (-75%), lumbar extension (-50%), and left hip flexion(80°). Strength was grossly WNL except for weakness with trunk flexors/extensors (2/5), left hip extensors (3-/5), and right knee extensors (3-/5). Grip strength was grossly WNL. Gross muscle flexibility was WNL except the left bilateral hamstrings. Sitting posture was fair with mild thoracic kyphosis and round shoulders. Standing posture was poor with trunk rigidity and some left lateral trunk deviation (10° from midline) due to possible guarding from pain. Sensation was intact except impaired sensation to light touch at the left posterior outer calf (dermatomal path of S1).

**Tests and Measures**
- The following tests and measures were chosen based upon their reliability and validity along with LM's subjective history, functional complaints, and objective measures during the systems review. To evaluate joint function, active/passive range of motion was performed on the thoracic, lumbar spine and bilateral hips, knees and ankles with the use of a universal goniometer as described by Norkin and White. The universal goniometer appears to be a mechanically sound instrument, the use of a standardized testing procedure still allows excessive variability between therapists resulting in poor reliability. Therefore, ROM measurements will not be used as a primary basis for a clinically meaningful change. Active range of motion was...
found to be WNL for bilateral hips except left hip flexion (80°), WNL for bilateral knees, and WNL for bilateral ankles. Thoracic and lumbar ROM were measured based from the procedures by Reese et al.14 Active ROM was noted to be impaired in thoracic right lateral flexion (-50%), left lateral flexion, (-25%) lumbar spine flexion(-75%), and extension(-50%). Passive ROM on all major joints of the lower extremity was found to be WNL. Trunk and bilateral lower extremity strength were assessed according to the outlined procedures by Hislop and Montgomery.15 Strength was grossly WNL except thoracic and lumbar extension (2/5), trunk flexion (2/5), left hip extensors(3-/5), and right knee extensors(3-/5). Muscle flexibility was found to be WNL except left hamstrings as seen with a straight leg raise test (45°). A slump test was performed to identify sciatic nerve compression; patient was seated with neck flexed and was told to actively extend the knee while the hip remained flexed. The result was positive with pain at the low back. Tenderness to palpation was noted at the left lumbosacral paraspinals (L3-5 area) just directly above the left PSIS. Bilateral lower extremity sensation was assessed along the dermatomal path of L2-S1 distribution using therapist’s fingers for light touch to rule out peripheral nerve involvement. Sensation was intact except for decreased to light touch at the left posterior outer calf.

The Timed Up and Go (TUG) test16 was used to assess basic mobility and dynamic standing balance. It is a multistep functional performance measure that measures the time required for a patient to rise from a standard chair, walk 10 feet, turn around, return, and sit down. The patient must be able to transfer and ambulate with or without an assistive device to complete the activity safely. Persons who are independent in functional mobility typically complete the task in less than 10 to 20 seconds and patients who need more than 30 seconds are likely to have impaired mobility or at high risk for falls. This test has high test retest reliability with a calculated minimal detectable change of 4.09 seconds at 90% confidence interval.16 The test was administered with LM scoring 33 seconds during initial evaluation indicating increased risk for falls.

Functional limitation was also assessed using the modified Oswestry Low Back Pain Disability Questionnaire. The modified Oswestry Low Back Pain Disability Questionnaire is a tool used to measure a patient’s perception of his functional limitation related to his degree of low back pain. The questionnaire consists of 10 sections that address pain intensity, personal care, lifting, walking, sitting, standing, sleeping, social life, travelling, and changing degree of pain. Each question is scored on a 6-point scale (0-5), summed to reach the patient’s score, divided by the maximum score, and multiplied by 100 to reach a percentage score. The higher percentage score, the greater the activity limitation. This questionnaire has shown high test-retest reliability, responsiveness, and has a minimum clinically important difference of approximately 6 points.17 LM scored at 76% during initial evaluation.

During gait assessment, LM demonstrated decreased step length, right knee hyperextension during midstance, less push off time on the left foot, and slow cadence during 50 feet of ambulation with a rollator walker.

**CLINICAL IMPRESSION**

Based upon LM’s subjective reports and objective deficits as noted during the IE, physical therapy is recommended as an adjunct to her pharmaceutical management for pain from disc herniation. Since LM has been limited in pain medications due to adverse side effects and interaction with recent Coumadin treatment, it would be imperative to use another treatment option that would decrease her need for analgesics to manage her symptoms. Therefore, the plan of care would be 3 times a week for 4 weeks to address the following goals: decrease low back pain and radiating symptoms; improve muscle flexibility; increase ROM; and improve strength, balance, and ambulation. The treatment will also address her functional limitations including difficulty sitting (>30 minutes), standing (>4 minutes), getting up from chairs, self-care, and participation in recreational activities. A follow-up evaluation will take place in 4 weeks to reassess all impairments and functional limitations based on scores from the TUG and modified Oswestry Low Back Pain Disability Questionnaire.

**INTERVENTION**

LM’s treatment plan was developed based upon the evidence of lumbar stabilization exercises for lumbar disc herniation as described by Bakhtiary et al18 and dynamic stabilization exercises for lumbar microdiscectomy by Yilmaz et al.3 After the initial evaluation, LM was treated with moist heat on the low back area to decrease pain and facilitate tissue extensibility prior to beginning exercise. Education on avoiding sitting too long (more than 1 hour), forward bending, and heavy lifting were provided. LM was advised to alternate lying down with short walks as tolerated without pain and wearing proper footwear. Proper positioning and maintaining a neutral spine alignment were stressed with PT giving a demonstration. Gentle pelvic tilts, bridging, and passive left hamstring stretches followed as tolerated, all done in supine. As part of her home exercise program, LM was provided a handout with instructions on stretching of bilateral hamstrings, pelvic tilts and wall slides, all obtained from the VHI Kit (Visual Health Information, Tacoma, WA) at the RehabCentral web site in the therapy department. These exercises were to be done daily. Biofreeze® pain relieving gel (The Hygenic Corporation, Akron OH) was provided and instructed to be applied if back symptoms occurred at home.

During each follow up visit, the intervention included neutral spine alignment positioning, moist heat at the low back area for 15 minutes, bilateral hamstring stretches, and lumbar stabilization exercise protocol. Please refer to Table 2 for the lumbar stabilization exercise protocol provided for each week of Physical Therapy treatment. The stabilization exercises were to be performed for two sets of 10 repetitions. All exercises were a combination based from procedures by Bakhtiary et al, 18 Stanford, 19 and Kisner and Colby.20

At the end of each treatment week, an additional home exercise program handout was provided with figures/drawings of the exercises done that week. On the third week, resistance in the form of ankle weights (2 lbs) was applied on each arm secondary to reports of improving symptoms. On the fourth week, resistance increased to 3 lb ankle weights on the arms and legs to further challenge LM and increase her strength.
LM attended a total of 12 visits of physical therapy treatment.

OUTCOMES

At the end of the fourth week, LM was re-evaluated with reports of decreased back pain to 4/10 and less tingling on the left posterior calf. She has been taking Tylenol twice a week compared to daily prior to PT treatment. Overall function has improved with LM being able to tolerate sitting for an hour, standing for 7 minutes, getting up from chairs easily, and tolerating 100 feet of ambulation with a rollator walker from the apartment to her meals. Also, LM reported improved steadiness during ambulation with a rollator walker of ambulation with a rollator walker. She is enjoying her routine social activities. All active/passive ROM testing was measured WNL except active ROM lumbar spine flexion (-25%; 50% increase from IE) and active ROM thoracic spine left lateral flexion (-25%; no change from IE).

Bilateral lower extremity strength testing was performed and found to be WNL except thoracic and lumbar extensors (3-/5; 2/5 at IE), trunk flexors (3/5; 2/5 at IE), left hip extensors (4/5; 3-/5 at IE), and right knee extensors (4/5; 3-/5 at IE). Muscle flexibility was reassessed at the left hamstrings (80°; improved from 45° at IE) as seen with a SLR test. The slump test was still positive but LM demonstrated normal step length, more push off time on the left foot, and normal cadence. LM also performed the TUG test and completed the task in 17 seconds (a 16-point decrease from her score at IE). At the end of reevaluation, the Modified Oswestry Low Back Pain Disability Questionnaire was reassessed and the calculated score was 61%, a significant 15% decrease from her score at IE. The last two outcome measures mentioned are proven to have high reliability and are important indicators for evidence of effectiveness and a clinically relevant change.

DISCUSSION

The purpose of this case report was to investigate the effects of a lumbar stabilization training program on pain and function in a patient with lumbar disc herniation. By initiating modalities, stretching and stabilization exercises in physical therapy, LM experienced a decrease in symptoms from disc herniation and improvement in overall functional performance with less dependence on pharmacological intervention for pain. Even though NSAIDs play a vital role in pain management and antiinflammation, adverse side effects and drug interactions are limitations that make clinicians seek

<table>
<thead>
<tr>
<th>First week</th>
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<tbody>
<tr>
<td>1) Position: Hook-lying or supine. Teach the patient to perform a posterior pelvic tilt by slipping the hand under the low back and pushing the spine down on the hand. Use the phrase “tuck your stomach in”. Then, have the patient arch the back doing an anterior pelvic tilt.</td>
</tr>
<tr>
<td>2) Position: Hook-lying. Place an elastic band (green Theraband® was used) around the knees. While the abdomen is tucked in, abduct the legs against the resistance of the band.</td>
</tr>
<tr>
<td>3) Position: Hook-lying. Perform heel slides alternately while keeping abdomen tucked in.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second week</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Position: All fours (quadruped). Perform anterior and posterior pelvic tilts, being sure the motion is in pelvis and lumbar spine, not the thoracic spine</td>
</tr>
<tr>
<td>2) Position: Hook-lying. Bridging exercises are carried out by slowly raising the buttocks and low back from mat and keeping the stomach tight at the same time. Hold each lift for 5sec.</td>
</tr>
<tr>
<td>3) Position: Hook-lying. While keeping the abdomen tucked in, perform straight leg raise on one leg. Do the same thing on the other leg. Raise and hold for 3 sec.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third week</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Position: Hook-lying. While keeping your abdomen tucked in, raise one arm over your head and raise the opposite leg. Repeat with the other side. Do not let the back arch.</td>
</tr>
<tr>
<td>2) Position: Quadruped. Alternately lift one arm, then the other. While keeping the spine stabilized, lift one leg toward hip extension, return and repeat with the other leg.</td>
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</table>

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<thead>
<tr>
<th>Fourth week</th>
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<tbody>
<tr>
<td>2) Stair stepping. Position: Standing with 1 standard height stair directly in front of feet. Perform a step-up while maintaining the abdomen tucked. Step down and repeat with opposite leg.</td>
</tr>
<tr>
<td>3) Large Therapy ball. Position: Sitting. Make sure patient is not nervous and ready for this exercise. PT should closely supervise or support the patient’s pelvis as needed when sitting. Advised patient to maintain a neutral spine position with abdomen tucked in. Progress by alternately flexing one arm overhead, then the other.</td>
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</tbody>
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*The Hygenic Corporation, Akron, OH

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**Table 2. Lumbar Stabilization Exercise Protocol**

<table>
<thead>
<tr>
<th>Week</th>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Hook-lying or supine.</td>
</tr>
<tr>
<td>Second</td>
<td>All fours (quadruped).</td>
</tr>
<tr>
<td>Third</td>
<td>Hook-lying.</td>
</tr>
<tr>
<td>Fourth</td>
<td>Hook-lying.</td>
</tr>
</tbody>
</table>

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alternative treatment options. Therefore, the results could create an impact on PT practice by highlighting the role of stabilization training as an adjunct to managing disc herniation. As therapists, our concern should not only treat the current pain episode but prevent future episodes as well. Lumbar stabilization exercises are proven to strengthen the spine musculature that produces a long-term effect of less recurrence of symptoms.19

Following 4 weeks of physical therapy, results have shown an improvement in her overall ROM, strength, flexibility, balance, ambulation, and participation in recreational activities. LM experienced a significant decrease in low back pain symptoms, decreasing her need for pain medications over time and suffering less side effects that affect her daily function. The strong primary indicators such as the TUG16 and Modified Oswestry Low Back Pain Disability Questionnaire17 have significant changes in scores compared at IE. For the TUG, a 16-point decrease from the initial score is sufficient to indicate a clinically relevant change in mobility and balance.16 For the modified Oswestry, there was a 15% decrease from the initial score, which is more than the minimum clinically important difference of 6 points.17 It could be hypothesized that if LM continues physical therapy treatment for another 4 weeks, trunk and lumbar musculature strength will be further strengthened and possibly relieve disc herniation symptoms. However, this study was only performed on one subject and cannot be generalized to other patients. This case report was created to encourage further research with a large sample size. Randomized control trials are still needed to continue investigating the effects of stabilization training on patients with disc herniation, with a control group only managed pharmacologically.

REFERENCES

Mitzi Ouano Cabahug has been a practicing Physical Therapist for 14 years and is a certified Kinesio tape practitioner. She recently received her doctorate degree in 2012 at the University of Scranton, PA. Mitzi is currently a program manager for Genesis Rehab Services at Mount Arlington Senior Living in Mount Arlington, NJ. She has directed an in-house outpatient rehab facility that involved pain management, fitness and fall risk/balance assessment, and development of treatment programs specific for the older adults for optimum functional independence in an assisted living setting.
OUR PROGRAM

The Cincinnati Veterans Affairs (VA) Medical Center and University of Cincinnati PostProfessional Residency in Geriatric Physical Therapy was recently credentialed by the American Board of Physical Therapy Residency and Fellowship Education (ABPPTFE) in November 2013 becoming the first Geriatric Physical Therapy (PT) Residency Program in our country’s largest health care system, the Veterans Health Administration (VHA). It joins the Milwaukee VA (Neurology), Ann Arbor VA (Cardiopulmonary), and Tampa VA (Neurology and Orthopedic) as credentialed and fully funded year-long residencies through the VA’s Office of Academic Affiliations (OAA). The VA has a long history of partnership with academic institutions that makes it ideal for developing postprofessional physical therapy (PT) programs. With respect to demographics, there are 11 credentialed Geriatric Residency Programs throughout the United States, and only two within a 5-hour drive from Cincinnati. According to the latest census, the Cincinnati area has experienced over 10% growth in its geriatric population, which adds to the value of this Residency Program.1

The Program’s mission is “to transform entry-level PTs into advanced PT practitioners in the management of the geriatric patient.” Goals of the Program include (1) to have participants successfully pass the American Board of Physical Therapy Specialties (ABPTS) geriatric specialty board exam upon completion of the Residency; (2) to position the VHA to be in the forefront of supporting professional development in PT and geriatric practice; (3) to provide a Residency in a location that is currently underserved; (4) to improve care and access to services for our Veterans; and (5) to serve as a proactive retention and recruitment strategy for highly competent and trained staff.2

The Residency Program readily embodies the current VHA Strategic framework: provide Veterans personalized, proactive, patient-driven health care; achieve measurable improvements in health outcomes; and align resources to deliver sustained value to Veterans.3 As an academic partner within walking distance of the VA, the University of Cincinnati (UC) provides unparalleled resources as a Level I urban research university. These resources are available to residents as they are provided a Volunteer Clinical Faculty Appointment through the College of Allied Health Sciences. Additionally, many other unique opportunities are available including guest speaking in geriatric-related classes, assisting in labs that are neuromuscular or acute care based and attending Grand Rounds. The UC also provides the residents the opportunity to earn Clinical Instructor credentialing through the APTA Credentialed Clinical Instructor Program (CCIP).

Each year, between July and November, the Program accepts two residents for full-time, 12 month positions. As one of the clinical goals of our program is to develop a PT presence in an area that is underserved, Madeline Versteeg, our first graduate resident, now works as a staff PT in an integrated neuromovement clinic alongside neurologists and speech therapists. She provides balance assessments for patients with Parkinson disease, Huntington disease, and other neuromovement disorders. Her role has been integral to our proactive approach to reducing falls. In addition, Madeline teaches a functional circuit training class for patients identified as a fall risk. Since the inception of the class, she has seen significant results on tests such as the Mini-Best and the 30-second chair rise test.

Our current residents are developing similar roles in multidisciplinary clinics. Emily Kallen is working with the Spinal Cord Injury and Dysfunction (SCI&D) Clinic. She plans to utilize a pressure mapping system to better diagnose and deter pressure ulcer formation. As the PT member of the SCI&D team, Emily is treating patients with spinal cord injuries as well as motor neuron diseases that impact the function of the spinal cord such as multiple sclerosis and amyotrophic lateral sclerosis.

Michelle Riggs, another current resident, is exploring how a PT may impact care in a head and neck cancer clinic. The effects of a radical neck dissection on shoulder function are tremendous. Working with speech pathologists and physicians within the Ear, Nose, and Throat (ENT) Service, she provides education prior to surgery and treatment for neck and shoulder impairments postsurgically.

The benefits of the geriatric residency program are tremendous. As we begin to
decentralize our care to specialty clinics, we simultaneously improve access to our Veteran population. The following are reflections from our residents, one having completed the program and the other two just starting out as entry-level therapists.

A GRADUATE RESIDENT’S REFLECTION ON INTEGRATED PROGRAM DEVELOPMENT

Sometimes opportunities present themselves at completely unexpected, but perfectly timed, points in our lives. This is how I view my participation as the first resident in the Cincinnati VA Medical Center’s geriatric residency program. With many years of clinical experience in the outpatient, hospital, rehab, home health, and skilled care settings, I was already focusing my practice towards the care of the older adult. I carefully chose my continuing education courses and my self-study activities to improve my ability to provide quality therapy to the older adult, with the intent to apply for and take the examination to become a geriatric clinical specialist. But, accomplishing that goal was more difficult than I had anticipated, as I juggled my roles as a clinician in my professional life, with my roles in my personal life.

The geriatric residency program provided me with a structure and the support to reach my goal to take the national examination. Clinically, I was able to work with patients with many different diagnoses, so that I could strengthen my knowledge of disease processes and functional impairments and improve my clinical skills when developing and implementing the therapy program. I was able to work with all of the therapists in the department to review specialized skills, consult for assistance with difficult assessments, and develop treatment plans that appropriately addressed the therapy goals for each patient. Having access to multiple patient diagnoses and multiple therapists was a definite strength for this residency. I was able to work with providers of additional services that are available for our patients, such as pulmonary rehabilitation and nutritional counseling, so that I could understand and advocate for services that would appropriately address all of the medical and social needs of the adult patient. I also had access to multiple written materials from which to study. The geriatric residency library has self-study resources, textbooks, and journal articles to use for the didactic portion of the learning program.

Since the residency program is also supported by the University of Cincinnati, I was given access to the university library as well as the DPT program and its faculty. In fact, one faculty member functions as a mentor for specific learning experiences, and is always available to assist the resident in any component of the residency program. Each resident is required to deliver a lecture to a university health science class; this is a great opportunity to work on teaching skills and share our knowledge about the older adult.

During my residency, I was also involved in program development. First, I began working with the Neuromovement Disorders Clinic, and established physical therapy as an integrated service provided in this weekly clinic. Working with the neurologists, I evaluate their patients, determining who may be at risk for falls, and then identifying the appropriate intervention strategy to address their risk, such as home health PT, outpatient PT, or home exercise programs for those who cannot travel the distance to the VA. I have also developed an outpatient exercise class that focuses on exercises and activities to improve dynamic balance control. Now that I have completed the residency program, I am fortunate to stay on as a permanent employee so that I can continue and expand these programs.

This geriatric residency program was the structure and the support that I needed to improve my knowledge and skills as a therapist for the older adult. Having the VA as an employer, who completely supported my goal to become a geriatric clinical specialist by providing clinical opportunities and resources to ensure great learning experiences, was the ultimate strength of this residency. I am glad I spent this last year in partnership with the VA/UC to learn, improve, and work towards my goal of the clinical specialization.

Madeline Lobby Versteeg grew up in New Jersey, received her BS in PT from the University of Delaware and her MMSc from Emory University. She lives in Cincinnati, and is now employed as a staff physical therapist at the Cincinnati VA Medical Center.

REFLECTIONS ON A TEAM APPROACH TO SPECIALIZED PATIENT CARE

During physical therapy school, the idea of being in a residency program had not really appealed to me; I wanted to be out treating patients, not stuck behind a desk doing classroom learning for another year. A fortuitously timed email from a respected faculty member brought this residency program to my attention, and while it looked promising on paper, the time I have spent as a resident thus far has surpassed all of my expectations.

This residency at the VA has provided more opportunities than I thought possible. I treat Veterans in both acute and outpatient settings, including specialty clinics such as spinal cord injury/disorder (SCI) and seating/power mobility. I participate in interdisciplinary meetings for patients with Amyotrophic Lateral Sclerosis and work closely with Recreational Therapy to integrate PT goals into adaptive sports programming. As part of the SCI clinic team, I develop algorithms and implement training across the hospital for safe-handling of Veterans with spinal cord injury. I attended the National Student Conclave in Louisville, KY, in October to help promote the residency and the VA system. All in the first few months!

The mentorship provided at this residency is exceptional, and I find it the perfect balance of guidance and self-driven learning. I am not monitored and overseen as a student during a clinical experience, yet I am given the support system to excel as a new and progressively specialized clinician. Education modules are self-paced and grouped to address various areas of practice, and each module has an experienced mentor to discuss ideas and provide feedback and reflection. This is far from the deskbound classroom learning I associated with being a resident!

Patients at the VA are a special population, and I am learning so much about treating competently and compassion-
ately while honing my skills as a general clinician and as a specialist. I look forward to the rest of this year-long program, and I know that every time I have here will benefit my professional life to come.

Emily Kallen grew up in Los Angeles, CA, and graduated from the University of Southern California in 2010 with a BS in Kinesiology and a BA in Neuroscience. She earned her DPT from Washington University in St. Louis in 2013. After completing this residency she plans to continue to work in the VA system, serving an older Veteran population.

FROM CLINICAL TO RESIDENCY

My final clinical rotation for my DPT program took place at the VA Medical Center in Cincinnati, OH. Since I do not come from a military background, I was unsure what to expect for my 12-week experience. The only thing I knew at that time was that I had a love for hippotherapy and aquatic therapy, neither of which would be applicable while at this VA location. So I put those thoughts on hold and embraced the world of the VA and the opportunities it held. I never could have dreamed my experience with Veterans would change the course of my professional career.

Soon I was caught up in a whirlwind of PT assisted programs offered to Veterans, those people who dedicate their lives to the service of our wonderful country. From the multidisciplinary amputee clinic to a chronic pain support group, a structured weight loss program to an educational “back school,” PTs here at the VA helped create programs to support Veterans on a much larger scale in addition to standard services offered through inpatient and outpatient clinics. I had the opportunity to participate or observe in each, and I was very impressed that these services were available to men and women of the VA system who were within a large radius of the Cincinnati area, extending to parts of both Kentucky and Indiana.

Halfway through my clinical rotation I started to gather information related to the “…newly developed Geriatric PT Residency Program” which was currently accepting applications. I was not sure that I liked the idea of completing over 4 years of undergraduate work, followed by 3 years of PT school, just to continue for yet another year of study. My curiosity got the best of me however, and I was fortunate enough to be able to discuss the residency with the program’s current and first PT Geriatric Resident. She made her love of geriatrics obvious and I was inspired by her passion to return to a learning environment after being a practicing PT for many years. As I continued to consider this opportunity, I thought back to my clinical rotations throughout school, as well as my experience serving as a PT technician for over two years. I was surprised to realize that nearly all of my most memorable and “favorite” patients fell into that category of “over the hill.” Suddenly I realized just what a golden opportunity this was… to be able to continue to work for an organization that truly seeks the best for their Veteran population, a chance to expand my knowledge base, and to offer my services to people I could affectionately think of as akin to my grandparents, most of whom I have lost since high school.

I have no less of a love for hippotherapy and aquatic therapy, even with having to put it off for a year residency in geriatrics. I see no reason why I cannot share the best of both worlds and hope to work for a facility that allows me to practice what I love in the future. Now more than ever I feel strongly that both therapies can have a very positive impact with geriatric populations, and my goal will be to prove just that.

Michelle Riggs was born and raised in Elizabethtown, KY, and attended Western Kentucky University where she graduated from their Honors College with a BS in Biology in 2009. She graduated from the DPT program at the University of Kentucky in 2013. Following her geriatric residency at the Cincinnati VA, she intends to practice in Kentucky and will pursue opportunities to continue working with Veterans, seeking the chance to work with specialty programs such as Horses for Heroes.

REFERENCES


The picture caption (from left to right): Emily Kallen, PT, DPT; Madeline L Versteeg, PT, MMSc, CEEAA; and Michelle Riggs, PT, DPT.
When looking at what makes a good measurement tool, one must first understand scales and levels of measurement. There are many tools available to measure various components of patient attributes and function. Rehabmeasures.org has over 100 different tools that can be used for assessing a patient’s level of function as well as other characteristics.1 Understanding why the specific tool used a specific scale as well as how the data from the tool is going to be used, may impact which type of scale should be utilized.

A scale is “is a system of ordered marks at fixed intervals used as a reference standard in measurement; a progressive classification, as of size, amount, importance or rank.”2 Each item on the scale should be individually separated from the other items on the scale. This is called mutually exclusive and exhaustive.3,4 A discussion about this mutually exclusive criteria will be presented later in this article.

The classical theory of research, there are 4 levels (scales) for tests and measures: ratio, interval, ordinal, and nominal.4 The ratio and interval scales are quantitative scales. These are scales that represent quantities of specific characteristic/phenomena. These tools can be used to detect small change in an attribute. Qualitative scales on the other hand have defined categories that have no known size or quantities and are used to test qualities not quantities of a specific attribute.5 These qualitative scales are more often used in clinical practice as they reflect how a patient functions in everyday life. A combination of both types of tools can be beneficial to the clinician to show that change did occur and how that affected function. To understand this, a discussion of the levels of scales is needed.

A ratio scale has a zero point that represents the complete absence of the quantity represented and cannot have a negative value. Intervals between all successive units on the scale must be equal in size.3,4 A timer is a good example of a ratio scale. Each unit on a timer is equal distance apart whether you use seconds or fractions of seconds. There is no negative. Measurements on the ratio scale can be added, subtracted, multiplied, or divided. Look at gait speed with a timer that has an absolute zero. One can measure the time an individual took to walk a specific distance, then take a group of people with the same characteristics. Using the time, one can average the speed of the group and determine the individual’s speed in relation to this average. This assists the therapist to determine how an individual performs in relation to their peers. The average speed can be classified as the norm for that specific group of people.

Interval scales have units of equal size but the zero point does not represent an “absence” of the quantity being measured.3,4 The zero on a temperature scale (Celsius) is the point at which water freezes not a lack of temperature present. Because of the absence of zero, ratios should not be formed from interval scales. Interval scales can be added or subtracted but ratios/percentages should not be generated. However, unlike ratio scales, interval scales can also have a negative number.

Likert scale is used to determine opinions and to measure attitudes, knowledge, perceptions, values, and behavioral changes. A Likert-type scale involves a series of statements that respondents may choose from in order to rate their responses to evaluative questions.2 This tool contains a list of declarative statements, each followed by a scale on which the subject is to indicate degrees of intensity of a given feeling or rate their level of response to given evaluative questions.2 These usually have extremes from agreement to disagreement. The behavior questionnaires such as the Dizziness Handicap Inventory are examples of Likert scale.

Ordinal scales utilize numbers or categories to represent order or rank of an attribute. These scales could be dichotomous, that is having two categories that represent presence or absence of an attribute.3,4 This order can be where more is better (independent or dependent in an activity) or the absence is better (presence of disease or not). Most ordinal scales in physical therapy have more than one category. Manual muscle testing is one of the most misused ordinal scales. Each of the 5 categories has a specific description of what the attribute (muscle strength) should be in that category. The numbers 1 through 5 indicate ORDER ONLY and should not be considered percentages. Changing the ordinal grade of muscle strength to a percentage of 1/5, 2/5, 3/5, 4/5, 5/5 violates the use of ordinal scales. The confusion continues when mode and median are determined for ordinal scale, which is an acceptable use. This mode (most often occurring score) and median (the middle value) is not the same as a ratio or percentage.3 The frequency data of ordinal scales is used to determine the sum of people that have the specific attribute and these sums can be a percentage of the count of people tested which is different than determining a percentage of the ordinal scale. The point is when ordinal scales are used for purposes the level of measurement was not developed for, validity errors can occur. That is the measurement outcome of the tool is not valid for the purpose intended.

The Berg Balance Scale is another form of ordinal scale measurement. Each criteria of the BBS has a specific attribute with a number assigned to this. The ordinal scale for each item is 0-4 based on the description to perform
the task, with the higher number being a better performance than the lower number. There is no specific distance between the criteria but only description of performance. When each item is totaled, a potential maximum score is 56. However, a person that scores 42 out of 56 is not to be changed into a ratio of what that means. The logistic regression of the BBS done by Shumway-Cook et al. discussed that though the decrease in BBS does tend to lead to an increase risk of falls with a cutoff at $\leq 49/56$ being at $\geq25\%$ increase risk of falls, this decline was not linear. By using the curve of the predicted probability of falls with declining scores on BBS, a score of 36/56, the risk for falls was nearing 100% and that any further decline would not affect this already extremely high risk. If one had used the ratio of BBS, then at 49/56 a person would be at 87% of full function and 36/56 would be at 56% which is clearly not what the logistic regression demonstrated related to fall risk. This becomes a problem when trying to move the BBS into a g-code category of percentage of functional decline.

Nominal scales represent differences in an attribute without any order or rank. There are labels assigned that could be number, letters, or words, but these do not imply any order or rank. The process is to differentiate things or people into groups with no value assigned to any ranking or order. This is the simplest form of measurement in that the separation is based on similarities and differences. However, though simple, one must still adhere to operational definitions and have mutually exclusive elements. That is a person or thing cannot be in more than one group. In the simplest form, gender is a nominal scale. A person may be assigned a number 1 if male or a number 2 if female. They cannot be in both groups and there is no order. The clinical prediction rule is based on this phenomenon. In the most basic form, clinical prediction rules or red flags are nominal scales. The description of the condition places the patient in one group or another, not both.

Understanding what makes a good measure will allow an understanding of which tools to use and how, how to compare tools, and how to make predictions based on the rules. Often the interval or ratio scales are used to assign a patient to an ordinal or nominal group for clinical intervention. Clinically the decision of if the patient has achieved a specific functional ability (ordinal/ nominal) is based on the objective data from a ratio/interval scale. Transforming ordinal/nominal scales to ratio/interval scales is typically looked upon with disfavor. However, the Rasch analysis has developed a way to compare the ordinal/nominal comparison and has been able to demonstrate redundancy of tools, floor/ceiling affects of tools, and discrepancies when using tools for different populations. (A more detailed discussion of Rasch analysis will be in future issues.)

What makes a good measurement tool? There are 5 requirements of a good measure:

1. **The scale should be a ratio or interval scale**: These are the parametric measures in classical test theory. These scales have the ability to show relationships to each other based on specific unit increments.

2. **Conjoint additivity**: Math procedures can actually be done with the numbers. If one measures a distance of 2” and then measures another distance of 8”, the math to determine how much longer the second measure is than the first (8-2=6) can be performed.

3. **Unidimensional**: The tool only measures one thing. An example of this is that a ruler can only measure length not weight. This is not dependent on what is measured but that the tool only measures one thing. In gait speed, timers only measure speed.

4. **Scale invariance**: The population or characteristics of the item being measured cannot change the scale. If a thermometer is used to measure temperature of a baby, child, adult or various ethnicities or those with various diagnoses, the thermometer is still only measuring temperature.

5. **Local Independence**: Each item is independent of the other measures. The items cannot be connected or biased by the other items of the measure. If one measures height by a ruler, weight by a scale, or temperature by a thermometer to determine overall health, each measure will not affect the other measure and each measure is measuring only one unique component of overall health. This becomes important when looking at ordinal scales and trying to have as few as necessary items for assessing a patient.

Now, that a review of levels of measurements and a discussion of scales, next time a review of the levels of research will be presented.

**REFERENCES**


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Jill Heitzman graduated from St. Louis University with her PT degree in 1978 and returned to get her DPT degree at Creighton University as one of the first members of their t-DPT graduation class in 2002. Dr Heitzman currently serves on the Board of Directors for the Academy of Geriatric Physical Therapy. She has written and lectured nationally on various topics related to the aging adult and is self employed providing contract physical therapy services in the Auburn, Alabama area.
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