

GERINOTES

SECTION ON GERIATRICS, AMERICAN PHYSICAL THERAPY ASSOCIATION

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Age Defying Fitness: A Book for Health Promotion

Happy 30th Anniversary Section on Geriatrics!



Joan Mills, First Chairman
Organized petition to establish "Long Term Care Section"



Bette Horstman

FOUNDING MEMBERS **Section on Geriatrics** **JUNE 1978**



Robert McNeil

Other Founders:

Osa Jackson-Schulte
Clara Bright
Carol Bernstein (Lewis)
Mike Higginbotham
Mary Spieker
Ray Gatian Jr
Steve Gudas
J.T. Gilbert
Lauren Hebert



Marilyn Miller-
Program Chair 1981



Margaret Kreisle-
Gave geri•topics its
name in 1981

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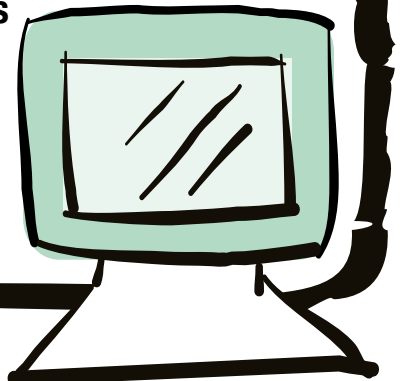
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www.geriaticspt.org



EDITOR'S MESSAGE

Exercise...That Would Be Us

Carol Schunk, PT, PsyD



This issue of *GeriNotes* is quite extraordinary. In 2004, the Section Board of Directors approved funding for a Task Force on Exercise for the Aging Adult

later renamed the Task Force on Promoting Physical Therapists as Exercise Experts for the Aging Population also known as the Task Force on Exercise for the Aging Adult. This was yet another progressive action by the Section, recognizing that with the beginning edge of the baby boom population just turning 60 it was essential for physical therapists to be recognized as the experts we are. The area of expertise in this case is exercise, our foundation, our often forgotten area where we are the best. In the past we were the only ones, other than physical education teachers, who even paid any attention to exercise. Then came Jack LaLane and Jane Fonda.....fast forward, here we are today with shelves and shelves in the video store and book store filled with every celebrity and his or her version of an exercise program. The celebrities will come and go, but in the interim, several other groups have joined the exercise field. We now have athletic trainers and exercise physiologists and fitness specialists and personal trainers all there to guide in the area of exercise. We need to remember that as physical therapists we are a double edge sword. We know exercise, and we know physiology and medicine. This makes us definitely "outstanding in our field" as the old cliché goes.

Task Force Chair, Dr Marilyn Moffat details the amazing productivity of the Task Force in her article which leads off this issue. The content continues with the fruits of the labor of the Task Force. This should serve to remind any of us who have forgotten our humble

beginnings to remember that we are the experts and have the best knowledge base and skill set for exercise. I have always taken pride in the fact that content of *GeriNotes* is easily clinically applicable. This issue takes this philosophy to a new level in that most of the articles need no interpretation in the area of applicability. Included are 3 consumer guidelines for exercise, 2 community screening forms, grass root advocate program, exercise recommendations, and an informational page for OB-GYNs. In addition the issue contains 2 exercise related but non-Task Force generated articles on exercise for osteoporotic individuals and aquatic exercises. Below is a statement by Task Force member, Carole Lewis on how she has used some of the Task Force material which is presented to you in this issue:

"The Exercise Task Force has developed some extremely useful products ranging from guides to PowerPoint presentations to Community Screening Forms. I love all the products but I am most excited about the two different screening forms. One form is for more robust older persons and the other for older people who are more towards frail. What excites me about these forms is that we now truly have an evidence-based vehicle that can begin the screening process. For

years I have been advocating that Physical Therapist do annual evaluations similar to Dentists. Finally the House of Delegates passed this motion this past year. Now Section members have two wonderful tools for doing this screening. Who better to protect and encourage the health and productivity of older persons than physical therapists. The possibilities are endless. This has been such an exciting effort and the screening end products are priceless." Carole Lewis

An issue I have addressed in previous Editorials is that it is one thing for us to recognize our expertise but another to get the consumer to see physical therapists as leaders in the field. The question of "Will they Choose Us?" prevails. Two Task Force members, Carole Lewis and Marilyn Moffat have addressed this question with the publication of their consumer-oriented book, *Age Defying Fitness: A Handbook for Health Promotion*. The authors saw a void in exercise books written for the general public in that there were very few written by physical therapists. The details of their book and the process of writing a book is detailed in this issue to encourage others to take the plunge and publish consumer articles or books to continue to promote the profession as exercise experts.

Audio CDs Available

Audio CDs are an **Affordable & Convenient** way to bring therapy staff up-to-date

■ "Documentation to Support Skilled Therapy Services: Understanding Medicare & Other Payers' Rules & Regulations" presented April 3, 2007, 2 hours, 2 CDs
Presenters: Rick Gawenda, PT and Angela Phillips, PT
see course description and details on reverse side

■ "Prevention & Management of Claims Denials" presented September 12, 2007, 2 hours, 2 CDs
Presenters: Rick Gawenda, PT and Angela Phillips, PT
see course description and details on reverse side

Purchase of either of the above courses includes a two-disk set which may be played on your stereo CD player or on your computer through audio CD playing software. Software and technical support are not included with this product; most newer computers include built-in audio/media players. A copy of the handout from the presentation is also included and all prices include postage.

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- \$119 for HPA Section Members
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- \$179 for Non-APTA Members

Order forms are available from www.aptaahpa.org or by contacting the Section on Health Policy & Administration (HPA). Be sure to check out the schedule on Upcoming Audio Conferences in 2008.



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PRESIDENT'S PERSPECTIVE:

Our Bountiful Harvest

John O. Barr, PT, PhD



Having just celebrated the Thanksgiving holiday as I sit down to compose this 'Perspective,' images of a bountiful harvest, many blessings, and expressions of thankfulness are still fresh in my mind. As a professional organization, the Section on Geriatrics has also enjoyed a harvest of success for which we should be thankful. I want to take this opportunity to call your attention to a sample from our bountiful harvest for 2007.

In response to a motion during our Members Meeting at the Combined Sections Meeting in 2004, the Board established the Task Force on Exercise for the Aging Adult with the purpose of promoting the power and effectiveness of exercise to positively influence the health and well-being of America's older adults through the physical therapist's role in promoting exercise for older adults. The Task Force has been most ably chaired by Marilyn Moffat and comprised of Dale Avers, Marybeth Brown, Anne Coffman, Karen Kemmis, Carole Lewis, Michelle Lusardi, Katie Mangione, Mark Richards, Anthony Walker, Steve Wolf, and Rita Wong. Outcomes to date from this Task Force number more than a dozen "products" that will be of direct value to physical therapists, physical therapist assistants, students, consumers, patients, and other health care colleagues. These products, many of which are discussed in this issue of *GeriNotes* and will be available through our website, include: exercise recommendations for aging adults; community screening forms for aging and frail adults; consumer brochures on physical activity and exercise for the aging adult (including those with diabetes or osteoporosis); consumer PowerPoint

presentations related to exercise; the regional continuing education courses "Physical Therapists as the Exercise Experts for the Aging Adult: Evidence-based Assessment and Exercise Prescription;" pocket cards & desk references "Evidence-based Guide to Safe and Effective Physical Activity and Exercise for the Aging Adult" for diabetes and osteoporosis; and the marketing tool "Be a Hip MD" which will be directed to gynecologists. Your further feedback on any of these products would be appreciated. Please consider extending your personal thanks to the members of this important Task Force when you have the opportunity.

Through our Adopt-A-Doc program, the Section has recognized outstanding postprofessional doctoral students committed to geriatric physical therapy and interested in pursuing faculty positions. Financial support of up to \$5000 to offset tuition and doctoral research expenses and a Board mentor, have been provided to awardees. Since 2004, eleven individuals have benefited from this program. While all have yet to become faculty members, one measurable outcome has been a total of 13 peer-reviewed publications produced by these awardees. Two-time recipient Michael L. Puthoff, an assistant professor in the Physical Therapy Department at St. Ambrose University, was recognized in October 2007 as being one of 25 APTA members to receive an "Emerging Leader" award for extraordinary service early in his physical therapy career.

The Section on Geriatrics has contributed an amazing \$220,000 in gifts and pledges to the Foundation for Physical Therapy since 1995, when the Geriatric Endowment Fund (GEF) was established. Through 2000, our donations to the GEF had totaled \$100,000. Additionally, Section donations to the Clinical Research Center and Network

have totaled \$120,000. This fall, the Section participated in the Foundation's on-line auction by donating two "PT for Successful Aging" continuing education packages that garnered over \$800 toward the \$24,725 raised by this event. Critically, in 2007 the Section Board pledged to match up to \$50,000 in member donations made to the GEF. While we are sorry we did not reach that goal, we are very pleased to announce that we have received \$29,529 in gifts from members to date. In an attempt to secure additional member donations, we've extended our matching plan until the conclusion of the 2008 Annual Conference and hope to raise the remaining \$20,000 by that time. Please give thoughtful consideration to how you and your colleagues might assist us in reaching our goal of enhanced giving to the GEF.

We've been blessed by the number of members stepping forward to assume critical leadership roles for the Section in 2007. These individuals include: Bill Staples, Treasurer; Alice Bell and Jill Heitzman, Board of Directors; Leon Bradway, Chair, Membership Committee; Jean Reynolds, PTA Advocate; Kerri Bednarcik, Chair, Public Relations Committee; Lucy Jones, Nominating Committee; Jessie VanSwearingen, Chair, Research Committee; Marilyn Moffat and Dale Avers, co-chairs, Advanced Clinical Exercise for Aging Adults Committee; Judy Daniel, Chair, Balance and Falls SIG; Michelle Lusardi, Editor, *Journal of Geriatric Physical Therapy*; Jason Hardage, Editor, Home Study Course series; Ellen Miller, Chair, Physical Activity and Exercise Conference Committee; and Greg Hartley, Advanced Clinical Practice Committee. Each and every one of these individuals are to be commended for giving of their time and talents in service to the Section and our profession.

Our website www.geriaticsppt.org has undergone significant revisions un-

der the leadership of webmaster Lucy Jones, with the assistance of Section Executive, Jess Sabo. We've been receiving recognition for our improvements via APTA's *PT Bulletin Online*. In addition to greater ease of locating key information, we've enhanced our information for consumers and now have welcoming resource information for the international physical therapy community.

Please appreciate that the seeds for the bountiful harvest of 2007 were, in many instances, planted years ago and came to fruition through ongoing planning, hard work, and dedication of a series of Boards of Directors, committees, Task Forces, and members. Most sincere thanks!

Dr. Barr is a Professor in the PT Department at St. Ambrose University, Davenport, Iowa. A previous member of the Section's Board of Directors, he served on the Editorial Board of the Journal of Geriatric Physical Therapy.

CSM HOTLINE: BALANCE IN FALLS PREVENTION

The Section on Geriatrics is pleased to announce that APTA will dedicate its consumer hotline at CSM 2008 to the importance of balance in falls prevention. The nationwide toll-free hotline will be held on Friday February 8, from 9 am until 5 pm ET in the Public Relations office at the convention center. Please consider volunteering for a one- or two-hour shift for this important public service to consumers from across the country. Contact Cheryl Harrison at cherylharrison@apta.org in the APTA Public Relations Department to volunteer for this fun and rewarding experience!

Home Health Audio CDs Available

■“The Proposed Therapy Threshold: What Does It Mean for Physical Therapy Practice?”

Presenter: Cindy Krafft, PT, MS, COS-C
Originally presented July 24, 2007, 90 min.

■“Therapy Documentation: The Roadmap to Reasonable & Necessary”

Presenter: Cindy Krafft, PT, MS, COS-C
Originally presented November 6, 2007, 90 min.

Each title includes a recording of the entire presentation on CD (90 minutes), which may be played on your stereo CD player or on your computer through audio CD playing software. Software is not included with this product;

most newer computers include built in audio players.

A copy of the handout from the presentation is included and all prices include postage.

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TASK FORCE ON EXERCISE FOR THE AGING ADULT: ACCOMPLISHMENTS 2004-2007

Marilyn Moffat, PT, DPT, PhD, FAPTA, Chair



In 2004, the Section on Geriatrics saw the need to give enhanced recognition to the role of physical therapists as exercise experts with older adults. The Section Board appointed a Task Force to fulfill this need. The initial members of the Task Force were Marilyn Moffat (Chair), Dale Avers, Marybeth Brown, Carole Lewis, Michelle Lusardi, Anthony Walker, Steve Wolf, and Rita Wong. Anne Coffman served as the Board liaison. Karen Kemmis and Katie Magione joined the Task Force the second year as Anthony Walker and Michelle Lusardi completed their terms. The Task Force had a preliminary meeting at Combined Sections Meeting in 2004 and then met officially later in 2004. A strategic plan with goals and objectives (see pg 8) was developed based upon the following background information. Exercise is a powerful intervention for the mediation of chronic disease and functional disability. No other intervention has been shown to be as effective in addressing deficiencies in muscle mass, bone mineral content, muscle strength, dynamic balance, overall physical activity level, gait, speed, cognitive function, physical function, and quality of life. With a large percentage of older Americans classified as obese and almost 50% reporting sedentary lifestyles, it is imperative that effective strategies for exercise are developed and implemented. As experts in movement and exercise and with a thorough knowledge of pathology and its effects on all systems, physical therapists are the ideal professionals to promote, guide, and manage the exercise activities and efforts of America's older adults. A concerted effort by the Section on Geriatrics to promote the 'power' and effectiveness of exercise would positively

influence the health and well-being of America's older adults. The strategic plan focused on the promotion of the physical therapist's role in promoting exercise for older adults.

It was apparent that in order to complete as many of the activities as possible, the Task Force would require Section funding for a period of 2 to 3 years. The Task Force aimed to address professional education needs, patient/client education, research, reimbursement issues, exercise programs high-

As experts in movement and exercise and with a thorough knowledge of pathology and its effects on all systems, physical therapists are the ideal professionals to promote, guide, and manage the exercise activities and efforts of America's older adults.

lighting the physical therapist's role, and public awareness to name a few areas. Coordinating activities with the American Physical Therapy Association was to be done whenever possible.

With approval for funding, the Task Force began the activities, many of which are detailed in this issue of *GeriNotes*. The first completed activity was the annotated bibliography, which was submitted to APTA's "Hooked on Evidence," and from that starting point, patient/client scenarios to accompany Hooked on Evidence were also developed. The Task Force gathered a total of over 1200 articles, which were annotated and sorted. A member of the Task Force has been charged by the Board of Directors of the Section to continue to update this most important aspect of research data for physical therapist practice in this area.

See this issue of *GeriNotes* for some tips on accessing this information.

Work was also centered around the development of physical therapist guidelines for safe exercise programs for the aging population (patients and clients) with multiple conditions in multiple settings, based, when feasible, on available evidence. Those guidelines, totally based on consensus data, are part of this issue of *GeriNotes*.

The early activity on the development of sample curricular content for entry-level programs was also begun at this time and was completed in 2007. It is being reviewed by the Section Board, and will be shared with all accredited PT and PTA programs when it is completed.

In 2004, the Task Force decided that their activities related to Goal IV for disease-specific guidelines would center around the development of guidelines for the physical therapist management of exercise programs for aging adults with diabetes, osteoarthritis, and osteoporosis since the Section already had a guideline as it pertains to balance and falls, and the Neurology Section had stroke guidelines. The results of this activity, which included 3 consumer brochures and 2 guidelines for physical therapists (Diabetes: Guide to Safe and Effective Physical Activity and Exercise for the Aging Adult; Osteoporosis: Guide to Safe and Effective Physical Activity and Exercise for the Aging Adult; Diabetes: Evidence-based Guide to Safe and Effective Physical Activity and Exercise for the Aging Adult; and Osteoporosis: Evidence-based Guide to Physical Activity and Exercise for the Aging Adult) are included in this issue of *GeriNotes*. Two smaller pocket guides for physical therapists and physicians were also finalized, and will be shared with Section on Geriatrics members

for free. See www.geriaticsppt.org for more information.

A major educational program in power point format was begun in 2005 and was completed in 2007. We will offer this as a 2-day program twice in 2008, in Portland or Kansas. See the ad in this issue, or www.geriaticsppt.org, for details. We don't plan to stop there: we would like this 2-day continuing education program to evolve into a 3-part program consisting of: (1) introduction to facts pertaining to the older population and delineation of all of the tests and measures for effective examination of older adults; (2) exercise prescription for older adults; and (3) exercise prescription for special populations, barriers and motivations for exercise, and pharmacological considerations for exercise with older adults. This project then evolved into the development of a proposal for a certification program to recognize those who complete the 3-course sequence as exercise experts with older adults. The Task Force also developed a brief quiz to be taken by participants prior to the beginning of each course. The Section will consider planning for and implementation of this program in 2008. As part of the examination portion of this activity was the recognition that the standard examination form in the *Guide to Physical Therapist Practice* should have additions for the aging population. Suggestions have been made for additions to the History form and to the Systems Review.

Two community power point presentations ("From Frail to Function to Fun" and "So You Want To Begin Exercising") were developed for members to use in their communities as educational tools and as means of creating increasing awareness of the roles of physical therapists in exercise and physical activity programs for aging adults. These are currently available for free to Section members on the Section website.

Two community screening forms—one for aging adults and one for sedentary, functionally limited, or potentially frail adults—were completed and are included in this issue of *GeriNotes*.

As part of a brain storming session at one meeting, the Task Force envisioned the role of physical therapists

as exercise experts to include an annual physical therapist check-up visit in recognition of the need for health promotion, wellness, and fitness ongoing activities as one ages. This idea reached fruition with the presentation of a motion to that effect to the 2007 House of Delegates, which was passed by the House. The House also passed a motion that in effect would have APTA's staff look at the possibility of having physical therapists involved in the Welcome to Medicare preventive examination. The Section will also introduce a motion to the 2008 House of Delegates to have physical therapists serve as role models for their patients/clients by meeting national guidelines of participation in at least moderate physical activity/exercise 30 minutes per day, 5 or more days/week.

A pocket card was developed as marketing tool for physical therapists to provide an easily accessible guide for physical therapists and physicians to use to counsel their patients/clients about an appropriate exercise prescription. The card also may serve as a marketing tool for physical therapist practices (see card in this issue of *GeriNotes*).

The Task Force developed a marketing tool entitled "Be a Hip MD" to make gynecologists aware of what they could do to address their patients/clients decreased range of hip motion. It is anticipated that this tool could be promoted to gynecologists as another means to promote physical therapist exercise expertise in enhancing range of motion and function in the aging female population.

A session has been approved for CSM 2008 to share information about the various national and international groups that overlap physical therapy. People who already serve on multidisciplinary boards and groups will share experience on how they got involved and what it takes to be active on these committees. Suggestions will be made to get others involved and a mentor system will begin to help therapists pursue this avenue and spread the word.

As is evident from the above, the activities of the Task Force have been varied and intense over the 3-year period of time. The results will hopefully

be useful to physical therapists practicing with aging adults in multiple venues. All members of the Task Force have gotten a great deal of satisfaction from serving on this Task Force and look forward to having members using the products of our deliberations and actions. I personally am indebted to all of the Task Force members, who were untiring in their efforts on behalf of the Section and who have enriched my life throughout this process.

GOALS AND OBJECTIVES

GOAL I – To assure a comprehensive knowledge base for physical therapist professional education regarding the examination and intervention for the exercise needs of the aging population.

Objectives

Provide sample curricula content on exercise and physical activity for older adults to all physical therapist professional education programs.

Address the multifaceted nature of the physiological decline that occurs in the aging population, including differentiating between disuse or consequences of insufficient activity and physiological aging decline.

Develop educational materials for the physical therapist about the unique opportunities to promote physical well-being for the aging population.

Provide educational and practice resources to all physical therapist educational programs about exercise for older adults.

Design a certification program within the APTA/Section on Geriatrics for physical therapists to become Certified Exercise Specialists for the Aging Population.

Present programming on exercise programs for the aging population at state and national physical therapy conferences.

Develop a series of continuing education programs that will assure that all physical therapists have expertise in exercise prescription and programs for the aging population. Content to include materi-

als listed above in curriculum bullet and in Appendix A.

Provide the opportunity for Section members one time each year to take the Section's Focus course at no cost.

GOAL II – To establish practice guidelines for safe and effective exercise parameters for the aging population.

Objectives

Develop guidelines for safe exercise programs for the aging population (patients and clients) with multiple conditions in multiple settings, based, when feasible, on available evidence.

Develop guidelines for community screening programs for the exercise needs of the aging population.

Promote the physical therapist as a first line of defense for screening (assess strength, flexibility, balance, posture, aerobic capacity/endurance) for exercise programs for the aging population.

Investigate feasibility of APTA's Department of Reimbursement promoting with payers the role of physical therapists in conducting preventive exercise programs for the aging population and the cost effectiveness of that inclusion.

Establish a Section advisory group that would be available to payers for consultation of design of exercise programs for the aging population including appropriate exercise prescriptions (intensity, frequency, duration, modes, supervision required, etc).

Create an awareness of models of and develop mechanisms for fee-for-service payment for physical therapists conducting exercise programs for the aging population.

GOAL III – To identify the needs for and enable consistent integration of the best evidence to support exercise for the aging population.

Objectives

Create and update an annotated bibliography on evidence-based literature on exercise for the aging population.

(Utilize APTA Hooked on Evidence database as a beginning for the bibliography.)

Develop a research agenda for studies on exercise programs for the aging population.

Establish a research advisory group within the Section that may provide design support for research on exercise for the aging population.

Publicize funding sources for research on exercise programs for the aging population.

GOAL IV – To effectively educate the professional communities about the role and benefits of physical therapists as exercise experts for the aging population.

Objectives

Establish a regular column in the official publication of the Section on Geriatrics on exercise for the aging population.

Disseminate the annotated bibliography on efficacy of exercise for the aging population in the most expeditious and cost effective way.

Establish state networking groups for generation of new ideas about the role of physical therapists as exercise experts in exercise programs for the aging population.

Raise awareness within the medical profession of the important role of physical therapists as exercise experts in the provision of exercise programs for the aging population.

Establish a mechanism (eg, web site, forum) for physical therapist information exchange on exercise for the aging population.

GOAL V – To effectively educate the consumer communities of the role and benefits of physical therapists as exercise experts for the aging population.

Objectives

APTA and Section on Geriatrics coordinate communications strategies to

inform the public of the evidence supporting exercise for the aging population and the unique role physical therapists, as exercise experts, play in such exercise programs.

Provide resource materials (eg, web site, brochures, interactive formats, etc) for the public on the importance and role of physical therapists as experts in exercise programs for the aging population.

APTA and Section for Geriatrics coordinate communications strategies to publicize the role of physical therapists as exercise experts in exercise programs for the aging population, the educational content for such programs, and the effective exercise prescriptions and programs for the aging population.

Educate the public on alternative payment models (fee-for-service vs. reimbursement) for exercise programs provided by physical therapists for the aging population.

Establish links with related organizations (eg, AARP, NOF, NAF) to promote the role of physical therapists as exercise experts for the aging population.

APTA and Section on Geriatrics coordinate mechanisms to disseminate access to physical therapist practices in multiple environments that focus on exercise programs for the aging population.

Work with community planners to promote physical activity for the aging population.

This "Exercise Prescription" card will be posted online at www.geriatricspt.org for your use, with free access to Section on Geriatrics members.

Exercise Prescription for Older Patients with Chronic Disease

ACTIVE INGREDIENTS

- 30 minutes of well-balanced moderate activity most days of the week
 - o Cardiovascular
 - o Flexibility
 - o Strengthening
 - o Balance Training
- Behavioral Modification Strategies

USES

- Obesity
- Diabetes
- Metabolic Syndrome
- Hypertension
- Cardiovascular Disease
- Osteoarthritis
- Osteoporosis
- Frailty/Falls
- Chronic Low Back Pain

WARNINGS

- Dyspnea
- Unstable cardiac disease or recent MI
- Acute infection or joint inflammation
- Acute Hypertension (SBP > 200 or DPB > 100)
- Tachycardia (RHR > 120)

DIRECTIONS

1. Ask & Assess

- Ask patients during their history & physical if they are exercising for 30 minutes most days of the week
- Ask patients if they include regular physical activity in daily activities such as taking the stairs or parking the car further away
- Help patients to recognize their barriers to regular exercise

2. Advise

- Recognize individual barriers, such as fear, time, access to facilities, health, etc.
- Have patients talk to someone who is physically active or find a role model
- Review the benefits of regular exercise, especially its role in preventing & managing chronic diseases

3. Assist

- Recommend patients slowly add physical activity to their daily lives such as walking a dog, riding a bike or walking rather than driving, or getting a pedometer
- Prescribe individualized exercise programs (visit www.firststeptoactivehealth.com)
- Refer patients to a local physical therapist (visit www.apta.org)

COMPLIMENTS OF

PHYSICAL THERAPISTS AS GRASSROOTS ADVOCATES THROUGH AGING ORGANIZATIONS

Carole Lewis, DPT, PT, GTC, GCS, MSG, MPA, PhD, FAPTA

Physical therapists are the exercise experts for the aging population, and it is important that we spread this word. Physical therapists are health care practitioners that work extensively in the area of exercise and wellness for older adults. They have the educational background and experience in conditions encountered by our increasingly aging population and that would be positively affected by exercise (eg, arthritis, stroke, musculoskeletal disorders, etc.).

Various national and international groups may benefit from physical therapy involvement in their organization. While some physical therapists already serve on multidisciplinary boards and groups, there are many others that would benefit from physical therapist involvement.

A sample introduction letter is provided below as a first step in getting involved with related organizations. Orga-

nizations related to aging are identified for liaison purposes, and a list of ideas and reasons are provided that would support physical therapist involvement in these organizations.

The sample letter is below and is also posted for you to easily edit and use at the Section on Geriatrics' website, www.geriatricspt.org, under "Members." The Section on Geriatrics encourages anyone involved in a relevant organization to make the Section aware of your role in order to improve information sharing between our Section and other groups.

Insert any of the below to the above if appropriate.

Reasons organizations should work with physical therapists

Physical therapists are the health care practitioners who work extensively in

the area of exercise and wellness. Their education and work with conditions positively affected by exercise (eg, arthritis, stroke, musculoskeletal disorders, etc.) brings a breadth of experience that will be useful to anyone working to improve the health of aging adults. The following are ways your organization may benefit from working with physical therapists. Physical therapists can:

- Improve the health, function, and quality of life of those you serve.
- Reduce the physical, emotional, financial, and societal burden of the costs of health care.
- Promote your mission through the dissemination of your educational materials and/or health care products.
- Be content experts to you when generating marketing materials, consumer resources, and press releases.
- Provide education and or information for your clinical education participants, practitioners, and caregivers.

Sample organizations that could benefit from liaising with physical therapists

1. Health Care
 - a. American Diabetic Association
 - b. Parkinson Foundation
 - c. National Stroke Association
 - d. Arthritis Foundation
 - e. American Medical Association
 - f. American Nursing Association
 - g. Alzheimer's Association
 - h. National Osteoporosis Foundation
2. Exercise Equipment Companies
3. United States Government
4. White House Conference on Aging
5. Rehabilitation Companies
 - a. Consultant to aging content of treatment in exercise for older persons (local)
6. Consultant to aging content of treatment in exercise for older persons

Sample Letter

Dear _____

In 2010 there will be 40 million people over the age of 65. Numerous studies have shown that increased physical activity improves almost every aspect of life, from longevity to mental health to physical performance. Unfortunately, not everyone is committed to an exercise program or is following a safe and well-designed exercise program.

As a physical therapist with expertise in the area of exercise for older persons, my experience and educational background may be very valuable to your organization. I would like to have the opportunity to speak with you about how I might be of service to your group. Some areas to consider are as follows:

1. Program planning for fitness and wellness for the aging adult
2. Program modification of current exercise programs to meet the needs of aging adults
3. Educational programs on fitness and wellness for the aging adult

My curriculum vita is attached for your information. I will call you in a week to follow up. Thank you for your time and interest.

Sincerely,

7. Fitness Industry
 - a. Consultant to aging content of treatment in exercise for older persons- (local)
 - b. Board member and expert—(eg, Gold's Gym)
8. Business
 - a. Consultant to mandatory fitness programs for the over 55 employee (local)
 - b. Consultant to mandatory fitness programs for the over 55 employee (eg, AARP BOD—national)
9. Publications
 - a. Columnist for New York Times
 - b. Columnist for local paper
10. Communication Industry
 - a. Anchor for Fitness Show
 - b. Radio talk show host/hostess
11. School System
 - a. Advisor to fitness segments in curricula in neighborhood for healthy aging
 - b. National School Board Fitness Consultant
12. University System
 - a. Advisor to content on fitness segments for healthy aging
 - b. Consultant to National Board for Fitness
13. International Companies
 - a. Fitness consultant-International lecturer on fitness-
14. SNF/ Homecare
 - a. Geriatric Case Manager
 - b. AHCA- On National BOD

The possibilities for involvement are limitless. It is worth a letter and a call to spread the word about physical therapists as exercise experts.



Carole Lewis is a private practice and consulting clinician and specialist for Professional Sport Care and Rehab. She lectures exclusively for GREAT Seminars

and Books. Dr Lewis is also the author of numerous textbooks. Her website address is www.greatseminarsandbooks.com.

MORE EXERCISE INFORMATION FROM APTA'S HOOKED ON EVIDENCE

Kathleen Kline Mangione, PT, PhD, GCS, Task Force on Exercise Member

Which is the most effective means of returning these patients to their prior level of function? Would you do high intensity strength training or is functional training more effective? Is there any evidence to support using aerobic training with these patients?

- A 90-year-old woman who was **hospitalized on bedrest** for 9 days for urinary tract infection, pneumonia, and exacerbation of underlying congestive heart failure.
- A 78-year-old man with a history of peripheral neuropathy, generalized osteoarthritis, and hypertension reports 2 falls in the past month.
- An 82-year-old woman has mild residual left hemiparesis **2 years after a stroke**. She lives alone and is able to ambulate in the community with a single-point cane.
- An 86-year-old man with a history of dementia lives in a residential care facility. He ambulates independently but tends to wander and has **2 falls in the past week**.
- An 82-year-old man with a 10-year history of Parkinson disease demonstrates a **functional decline over the last 3 months**.
- A 66-year-old woman has a 10-year history of chronic obstructive pulmonary disease with intermittent steroid use. She experienced a **sudden onset of back pain** after a sneeze; radiographs revealed a burst compression fracture of T7.
- An 82-year-old woman, **2 weeks after an open reduction and internal fixation (ORIF)** of a fracture of the right hip, wants to return to her previous level of activity.
- A 66-year-old man received an elective, cemented, **total hip arthroplasty** using a posterolateral surgical approach 4 days ago. He is weight bearing as tolerated and is ambulating with a single-point cane.

The answers to these common and important clinical questions can be quickly and easily found on the Hooked on Evidence page on the APTA website. APTA members and staff have searched the hundreds of articles supporting the use of exercise and organized them around common patient scenarios. So the next time you have a patient with a new history of falls, check out “hooked” to make sure you are providing the most effective treatments.

Simply log on to the APTA website, click on the far left tab called tools, then select Hooked on Evidence. From the menu on the left click “search clinical scenarios.” From there, select a practice pattern group, a condition, and then the clinical scenario that most fits your needs. It's that simple...all the rest of the work has been done for you.

PHYSICAL THERAPIST COMMUNITY SCREENING FORM FOR AGING ADULTS

This fitness screening is being conducted by _____ and is intended to help prevent exercise-related injuries through an examination of certain aspects of an individual's level of fitness. This screening is not intended to serve as a replacement for an individual's regular physical examination or other health services. Each individual who participates in this screening does so voluntarily and assumes all risks involved with such participation.

Consent and Release Form

I hereby request to participate in this screening, and I hereby release from all claims and liabilities the volunteer physical therapists and all organizations involved in the development of this form and in the coordination, sponsorship, and staffing of this screening. I understand that this screening is not a substitute for a medical or physical examination. I understand that I must use my best judgment in participating, and I affirm that I have disclosed all information that is material to my participation in this screening.

I have read this consent and release form and understand its contents.

Signature of Participant

Date

REGISTRATION (PLEASE PRINT)

Name (Last Name) (First Name) (Middle Initial) (_____) Home Phone _____ M/F
Age Sex

Street Address City State Zip Code

GENERAL HEALTH HISTORY

Are you currently being treated for any illness/injury?	Yes	No
Have you had any muscle, bone, or joint injuries or pain recently?	Yes	No
Do you have arthritis?	Yes	No
Do you smoke?	Yes	No
Have you ever smoked?	Yes	No
Do you have a family or personal history of heart disease/diabetes?	Yes	No
Are you fearful of falling?	Yes	No
Have you had a fall in the last year? If so, how many falls?	Yes	No
Have you been sad or blue lately?	Yes	No
Do you walk over 6 blocks (1/2 mile) a day?	Yes	No

How many medications are you taking? _____

Please list all medications:

COMMUNITY SCREENING FORM FOR AGING ADULTS

Test	Reference Standard	Results	Further Exam Recommended	Comments
Blood Pressure				
Resting BP	<120/80 normal		Yes No	
Cardiovascular Response to 2-minute Walk				
Resting HR	<100 normal	HR_____	Yes No	
2 minute walk	Change in HR <30 ≤ 13 or moderate on Borg's RPE Scale ≤ 3 on Borg's CR10 Scale	Post walk HR_____ Post walk BP_____ Post walk RPE_____ Distance_____	Yes No	
Body Structure/Posture				
Standing posture	WN ranges identified by PT	<input type="checkbox"/> Head (forward) <input type="checkbox"/> Back (abnormal postural curves) <input type="checkbox"/> Knees (malalignment) <input type="checkbox"/> Feet (malalignment)	Yes No	
Flexibility				
Back scratch test	Male/female norms (see table below)		Yes No	
Neck rotation	≥45° is normal		Yes No	
Ankle dorsiflexion	≥8° is normal		Yes No	

Test	Reference Standard	Results	Further Exam Recommended	Comments
Static Balance				
One leg stand test with eyes open	<5 sec increased risk of falls >20 sec is normal	Left_____seconds Right _____seconds	Yes No	

Test	Reference Standard	Results	Further Exam Recommended	Comments
Dynamic Balance				
4 square step test (FSST)	<15 sec and no touch of canes is normal	_____seconds	Yes No	
Relative Strength				
Grip dynamometer	Right/left normal values <u>Men</u> R=66# L=55# <u>Women</u> R=43# L=38#	Right _____ lbs of force Left _____ lbs of force	Yes No	
OR				
Biceps curls	Normal values <u>Men</u> >13 times <u>Women</u> >12 times		Yes No	
Sit to stand test	Norms - see attached		Yes No	

We recommend that you see your physical therapist or physician for any values identified in the screening program as needing further examination (see **Further Examination Recommended** column). Although abnormal values should not be a cause for alarm, such a test result may indicate the need to make an adjustment in your fitness program and may indicate the need for further examination. The need for further screening should be determined in consultation with your personal health care provider.

If you should have any questions regarding the results of your fitness screening, please feel free to contact the following physical therapist.

Name _____ Phone Number _____

INSTRUCTIONS FOR PHYSICAL THERAPIST

- Before screening, ensure that participant signs consent form.
- Participant may be screened without or with assistive device.
- Take blood pressure one time and retake if uncertain of results.

Equipment Needed

- Straight-back armless chair (set against the wall)
- Blood pressure cuff
- Stethoscope
- Masking tape
- Goniometer
- Grip dynamometer **or** 5 and 8-pound weights

- 4 canes
- Stop watch
- Tape measure

Testing

- **This 2-minute walk test** is used to evaluate an individual's cardiovascular response to exercise. Mark off a 50-foot distance with tape. While participant is seated, take resting heart rate at the radial pulse. Have participant stand at first tape line. Instruct the participant to walk as quickly and safely as possible between the 2 taped lines when they hear the word "GO." At 2 minutes, the participant stops,

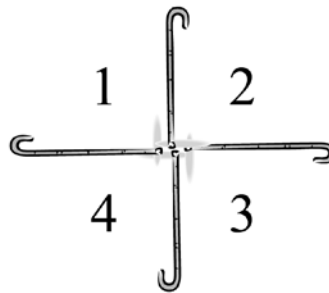
and the distance is recorded. Take and record heart rate immediately after the walk. Normal fitness indicates the HR should not increase more than 30 beats. Record the perceived exertion, which should be no more than "13 = somewhat hard" on Borg's RPE Scale or "3 = moderate" on Borg's CR10 Scale. Take and record the ending blood pressure. It is normal for systolic pressure to rise, and diastolic pressure should stay close to baseline measure.

- If the participant walks less than 2 minutes, if the HR increases 30 beats or more, or if diastolic pres-

sure increases, the participant should be referred to the physical therapist for examination and exercise prescription.

- For **body structure**, have the participant stand while the PT examines the participant from side and back views and notes the presence of any of the following: forward head, abnormal postural curves (scoliosis, kyphosis, lordosis) malalignment of the knees, and malalignment of the feet.
 - If any of these are present, the participant should consider a consultation with a physical therapist for examination and exercise prescription.
- For **flexibility**
 - For the **Back Scratch Test**, have the participant in a standing position place the preferred hand (one that results in the better score) behind the same-side shoulder, palm toward back and fingers extended, reaching down the middle of the back as far as possible (elbow pointed up). The other hand is placed behind the back, palm out, reaching up as far as possible in an attempt to touch or overlap the extended middle fingers of both hands. The tester helps to see that the middle fingers of each hand are directed toward each other without moving the participant's hands. The fingers are not allowed to be pulled/grabbed together by the participant. First the tester demonstrates, and then the participant determines the preferred hand, and is then given 2 practice (stretching) trials, followed by 2 test trials. Although it is important to work on flexibility on both sides of the body, only the "better" side has been used in developing norms.

- For **neck rotation**, have the participant sit and turn head to look over shoulder.
- For **dorsiflexion**, have the participant sit with the legs out straight and heels on the floor. Ask the participant to pull the toes toward them, and measure range with goniometer.
- If the participant lacks 5 inches on either reach of the Back Scratch Test, if the neck turn is less than 45°, or if the participant cannot dorsiflex the ankles 8° past neutral, the participant should be referred to a physical therapist for examination and exercise prescription.
- For **static balance**, have the participant stand on one leg with his/her eyes open and arms crossed over the chest. The test is stopped if the person uncrosses the arms, touches the lifted foot, tilts the trunk more than 25°, moves the stationary leg, or when 20 seconds is reached.
- If the participant is unable to stand on one leg for 5 seconds then he/she should be referred to a physical therapist for examination and an exercise prescription for balance and strength. If the participant cannot stand on each leg for 20 seconds, then they should be referred to a physical therapist for examination and exercise prescription for strength deficits.



- For **dynamic balance**, 4 canes are placed perpendicular to each other forming a large + sign. Demonstrate the test first. Ask the participant to stand in square 1 facing square 2 and then step as quickly and safely as possible forward to square 2, sideway to 3, and backward to 4, and then sideway to 1, sideway to 4, forward to 3, sideway to 2, and backward to 1. The participant should always face forward during the test if possible, and both feet must be in each square. Begin timing when the first foot makes initial contact in square 2 and end timing when the second foot returns to square 1.

- If the participant takes longer than 15 seconds to perform the test, then he/she should be referred to a physical therapist for examination and exercise prescription. [Dite W, Temple VA. Development of a Clinical Measure of Turning for Older Adults. *Am J Phys Med Rehabil*. 2002;81:857–866.]

• For relative strength

- **Grip strength**, have the participant seated with the dynamometer set in the second smallest grip position. Have the participant squeeze as hard as possible with right and left hands separately.
 - If the grip strength score is below the established norms, then the participant should be referred to a physical therapist for examination and exercise prescription.
- **OR biceps curls**, the participant sit upright with his/her back against the backrest of an armless chair. Have female participants lift a 5 lb and male participants an 8 lb dumbbell with their preferred arm. Instruct the participant to perform the biceps curl from full extension (soft elbow) to full flexion using good form. Do

AGE	65-69	70-74	75-79	80-84	85-89	90-94
WOMEN (in inches)	-3.5 ± 1.5	-4.0 ± 1.0	-5.0 ± 0.5	-5.5 ± 0.0	-7.0 ± 1.0	-8.0 ± 1.0
MEN (in inches)	-7.5 ± 1.0	-8.0 ± 1.0	-9.0 ± 2.0	-9.5 ± 2.0	-9.5 ± 3.0	-10.5 ± 4.0

These Back Scratch Test norms for older adults by age and gender are from: Rikli RE, Jones CJ. *Senior Fitness Test Manual* Champagne, IL: Human Kinetics; 2001.

Grip Strength

AGE	HAND	MEN (Kg)	WOMEN (Kg)
65-69	R	41	23
	L	35	19
70-74	R	34	23
	L	29	19
75-79	R	33	22
	L	31	19
80-84	R	30	17
	L	27	17
85-89	R	26	17
	L	25	16
90-94	R	19	15
	L	19	15

The above norms for frail individuals are from: Luna-Heredia E, Martin-Pena G, Ruiz-Galiana J. Handgrip dynamometry in healthy adults. *Clin Nutr.* 2005;24:250-258.

not allow forward bend of trunk. The score is the number of biceps curls that can be completed in 30 seconds.

- **For sit to stand**, have the participant wearing low-heeled sneaker-like shoes sit in a in a good supporting arm-less chair. Have the participant place his/her arms across the chest. Start the clock and time how long it takes the participant to rise from sitting to a complete erect stand 10 times in a row. Quit timing when the participant completes the 10th repetition and buttocks touch the seat of the chair. Stop the clock. Compare the time with the norms below.

Biceps Curl

AGE	65-69	70-74	75-79	80-84	85-89	90-94
WOMEN	12-18	12-17	11-17	10-16	10-15	8-13
MEN	15-21	14-21	13-19	13-19	11-17	10-14

These biceps curl norms are from: Rikli RE, Jones CJ. *Senior Fitness Test Manual* Champagne, IL: Human Kinetics; 2001.

Average Predicted Time for Each Age Group for 10 Repetition Chair Rise

AGE (in years)	WOMEN (Average in seconds)	MEN (Average in seconds)
65	18.4	17.6
70	19.3	18.5
75	20.1	19.5
80	20.9	20.5
85	21.8	21.5

These sit to stand norms are from: Cszuka ME, McCarty DJ. Simple method for measurement of lower extremity strength. *Am J Med.* 1985; 78:77-81.

THE SECTION ON GERIATRICS "IN MEMORIUM" FUND

Individuals Honored in 2007

Walter L. Kauffman • Willard T. Staples

As each of us pass through life, we are supported, assisted, and nurtured by others. There is no better way to provide a lasting tribute to these individuals than by making a memorial donation in the individual's name. The Section on Geriatrics has established the "In Memorium" fund, which supports geriatric research either directly (eg, via the Adopt-A-Doc Program) or by a pass-through contribution to the Foundation for Physical Therapy.

Donations payable to the "Section on Geriatrics – APTA" should be sent to: Jessica Sabo, Section on Geriatrics Executive Administrator, 1111 N Fairfax Street, Alexandria, VA 22314.

When sending a donation, please include the honored individual's name and information about any other person you would like notified about your contribution.

COMMUNITY SCREENING FORM FOR SEDENTARY, FUNCTIONALLY LIMITED, OR POTENTIALLY FRAIL ADULTS

This fitness screening is being conducted by _____ and is intended to help prevent exercise-related injuries through an examination of certain aspects of an individual's level of fitness. This screening is not intended to serve as a replacement for an individual's regular physical examination or other health services. Each individual who participates in this screening does so voluntarily and assumes all risks involved with such participation.

Consent and Release Form

I hereby request to participate in this screening, and I hereby release from all claims and liabilities the volunteer physical therapists and all organizations involved in the development of this form and in the coordination, sponsorship, and staffing of this screening. I understand that this screening is not a substitute for a medical or physical examination. I understand that I must use my best judgment in participating, and I affirm that I have disclosed all information that is material to my participation in this screening.

I have read this consent and release form and understand its contents.

Signature of Participant

Date

REGISTRATION (PLEASE PRINT)

Name (Last Name) (First Name) (Middle Initial) (_____) Home Phone _____ Age _____ M/F Sex

Street Address _____ City _____ State _____ Zip Code

GENERAL HEALTH HISTORY

Are you currently being treated for any illness/injury?	Yes	No
Have you had any muscle, bone, or joint injuries or pain recently?	Yes	No
Do you have arthritis?	Yes	No
Do you smoke?	Yes	No
Have you ever smoked?	Yes	No
Do you have a family or personal history of heart disease/diabetes?	Yes	No
Are you fearful of falling?	Yes	No
Have you had a fall in the last year?	Yes	No
Have you been sad or blue lately?	Yes	No
Do you walk over a block a day?	Yes	No

How many medications are you taking? _____

Please list all medications:

Note: PTs look at Fried's classification of frailty if needed. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, et al. Frailty in Older Adults. Evidence for a Phenotype. *J Gerontol.* 2001;56: M146–M157.

FURTHER EXAM

Test	Reference Standard	Results	Further Exam Recommended	Comments
Blood Pressure				
Resting BP	<120/80 normal		Yes No	
Resting heart rate	<100 normal		Yes No	
Body Structure/Posture				
Standing posture	WN ranges identified by PT	<input type="checkbox"/> Head (forward) <input type="checkbox"/> Back (abnormal postural curves) <input type="checkbox"/> Knees (malalignment) <input type="checkbox"/> Feet (malalignment)	Yes No	
Flexibility				
Back scratch test	Male/female norms (see table below)		Yes No	
Neck rotation	≥45° is normal		Yes No	
Ankle dorsiflexion	≥8° is normal		Yes No	
Relative Strength				
Grip dynamometer	Dominant/nondominant norms (see table below)	Right _____ kg of force Left _____ kg of force	Yes No	
OR				
Biceps curls	Normal: <u>Men</u> >8 times <u>Women</u> >6 times		Yes No	

Test	Reference Standard	Results	Further Exam Recommended	Comments
Short Physical Performance Battery (Guralnik JM. Short physical performance battery assessing lower extremity function: association with self-reported disability and prediction of mortality and nursing home admission. <i>J Gerontol.</i> 1994;49:M85-M94.)				
Balance				
Semi-tandem stance	10 sec	_____seconds	Yes	Score: _____ 0
Side-by-side stance	10 sec	_____seconds	No	_____ 1
Or				_____ 2
Tandem stance				_____ 3
	10 sec	or _____seconds		_____ 4
Walk Test				
8 foot walk distance	3.1 sec or less	_____to nearest tenth of a second for first trial	Yes	Score: _____ 0
		_____to nearest tenth of a second for second trial	No	_____ 1
				_____ 2
				_____ 3
				_____ 4
Chair Stand Test				
Sit to stand	11.1 sec or less	1x without arms	Yes	Score: _____ 0
		5x: 1 st trial _____ seconds	No	_____ 1
		5x: 2 nd trial _____ seconds		_____ 2
		(optional)		_____ 3
				_____ 4
Total Score for Short Performance Battery: _____/12				

We recommend that you see your physical therapist or physician for any values identified in the screening program as needing further examination (see **Further Examination Recommended** column). Although abnormal values should not be a cause for alarm, such a test result may indicate the need to make an adjustment in your fitness program and may indicate the need for further examination. The need for further screening should be determined in consultation with your personal health care provider.

If you should have any questions regarding the results of your fitness screening, please feel free to contact the following physical therapist.

Name _____ Phone Number _____

INSTRUCTIONS FOR PHYSICAL THERAPIST

- Before screening, ensure that participant signs consent form.
- Participant may be screened without or with assistive device.

Equipment Needed

- Straight-back armless chair (set against the wall)

- Blood pressure cuff
- Stethoscope
- Masking tape
- Goniometer
- Grip dynamometer **or** 5 and 8-pound weights
- Stop watch
- Tape measure

Testing

- **For the cardiovascular system**, take resting heart rate and blood pressure while participant is seated. Take the radial pulse. Take blood pressure one time and retake if uncertain of results.

- **For body structure**, have the participant stand, PT examines the participant from side and back views and notes the presence of any of the following: forward head, abnormal postural curves (scoliosis, kyphosis, lordosis) malalignment of the knees, and malalignment of the feet.
- If any of these are present, the participant should consider a consultation with a physical therapist for examination and exercise prescription.
- **For flexibility**
 - For the **Back Scratch Test**, have the participant stand place the preferred hand (one that results in the better score) behind the same-side shoulder, palm toward back and fingers extended, reaching down the middle of the back as far as possible (elbow pointed up). The other hand is placed behind the back, palm out, reaching up as far as possible in an attempt to touch or overlap the extended middle fingers of both hands. The tester helps to see that the middle fingers of each hand are directed toward each other without moving the participant's hands. The fingers are not allowed to be pulled/grabbed together by the participant. After the tester demonstrates the test,

- If the participant lacks 8 inches on the Back Scratch Test, if neck rotation is less than 45°, or if the participant cannot dorsiflex the ankles 8° past neutral, the participant should be referred to a physical therapist for examination and exercise prescription.

- **For relative strength**

- For **grip strength**, have the participant seated with the dynamometer set in the second smallest grip position. Have the participant squeeze as hard as possible with right and left hands.
- If the participant scores below the established norms, then participant should be referred to a physical therapist for examination and exercise prescription.
- **OR biceps curls**, have the participant sit upright with his/her back against the backrest of an armless chair. Have female participants lift

number of biceps curls that can be completed in 30 seconds.

- **For Short Performance Battery** (Guralnik JM. Short physical performance battery assessing lower extremity function: association with self-reported disability and prediction of mortality and nursing home admission. *J Gerontol.* 1994;49:M85-M94.)
- **For balance** screen, have the participant stand with his/her feet in 3 different positions:
 - Side-by-side: The feet are lined up together and touching. This is the easiest of the 3 tests.
 - Semi-tandem: The feet are side by side but the big toe of one foot is next to the heel of the other. The participant can choose which foot is forward and which is back.
 - Tandem: The feet are in a line with one foot in front of the other (heel to toe). This is the most challenging of the 3 tests. The

Grip Strength

HAND	MEN (Kg)	WOMEN (Kg)
Dominant	21-24	12-18
Non-dominant	20-23	10-16

Shechtman O, Mann WC, Justiss MD, Tomita M. Grip strength in the frail elderly. *Am J Phys Med Rehabil.* 2004;83:819-826.

Back Scratch

AGE	60-64	65-69	70-74	75-79	80-84	85-89	90-94
WOMEN (in inches)	-3.0 ± 1.5	-3.5 ± 1.5	-4.0 ± 1.0	-5.0 ± 0.5	-5.5 ± 0.0	-7.0 ± 1.0	-8.0 ± 1.0
MEN (in inches)	-6.5 ± 0.0	-7.5 ± 1.0	-8.0 ± 1.0	-9.0 ± 2.0	-9.5 ± 2.0	-9.5 ± 3.0	-10.5 ± 4.0

These Back Scratch Test norms for older adults by age and gender are from: Rikli RE, Jones CJ. *Senior Fitness Test Manual*. Champagne, IL: Human Kinetics; 2001.

the participant is given two practice (stretching) trials, followed by two test trials. The best score is recorded. Although it is important to work on flexibility on both sides of the body, only the "better" side has been used in developing norms.

- For **neck rotation**, have the participant sit and turn head to look over shoulder, making sure proper posture is maintained.
- For **dorsiflexion**, have the participant sit with the legs out straight and heels on the floor. Ask the participant to pull the foot and toes toward them (measure with goniometer).

a 5 lb and male participants an 8 lb dumbbell with their preferred arm. Instruct the participant to perform the biceps curl from full extension (soft elbow) to full flexion using good form. Do not allow forward bend of trunk. The score is the

participant can choose which foot is placed in front of the other.

The tests are done with eyes open. Participants cannot use walking aids. Time how long they can hold each position without losing

Biceps Curl

AGE	65-69	70-74	75-79	80-84	85-89	90-94
WOMEN	12-18	12-17	11-17	10-16	10-15	8-13
MEN	15-21	14-21	13-19	13-19	11-17	10-14

These biceps curl norms are from: Rikli RE, Jones CJ. *Senior Fitness Test Manual*. Champagne, IL: Human Kinetics; 2001.

their balance. If they make it to 10 seconds without a loss of balance, stop timing.

Begin with the semi-tandem test. If the participant is unable to hold semi-tandem for 10 seconds, go to the side-by-side test. Do not perform the tandem test. If the participant can hold the semi-tandem position for 10 seconds, then progress to the tandem position. Do not perform the side-by-side test for these participants.

Stand facing the side of the participant. Hold the arm closest to you. Hold the stopwatch in your other hand. Have them put their feet in the side-by-side position. Place your hand holding the stopwatch behind the participant's back and do not touch them while they try to keep their balance. When you say, "Go", release the arm, start the stopwatch, and allow them to move their arms and trunk and bend their knees to keep their balance. Stop the watch when:

- They move their feet out of position, or
- They reach out to grab you, or
- If 10 seconds goes by and they're still balanced

Record the score for side-by-side test to the nearest tenth of a second. Perform the semi-tandem and tandem tests using the same instructions given for the side-by-side test. Record the score using the following rating scale:

Balance: _____

- 0—If the participant could not attain the side-by-side position or could not hold the side-by-side position for 10 seconds.
- 1—If the participant held the side-by-side position for ten seconds but was unable to hold the semi-tandem position for 10 seconds.
- 2—If the participant held the semi-tandem stand position for 10 seconds but was unable to hold the full-tandem stand position more than 2 seconds.

3—If the participant stood in the full-tandem position for 3 to 9 seconds.

4—If the participant stood in the full-tandem position for 10 seconds.

- **The walk test** time is the time it takes the participant to walk 8 feet. Walking aides can be used during this test. Perform 2 trials and record the time for each, to the nearest tenth of a second. Use the score that is the fastest of the two trials. Have the participant stand with his/her toes on the starting line. When you say go, start timing and have the participant walk at his/her usual pace, "just as if they were walking down the street." Stop the watch when the first foot has completely crossed the finish line. If the first foot steps on the finish line, keep timing until the opposite foot fully crosses the line.

Walk closely enough to the participants to provide assistance in case he/she stumbles or experiences a loss of balance, but not so closely as to impede the participant.

Score the effort using the following rating scale:

- 0—If the participant was unable to complete the walking test, or did not attempt it
- 1—5.7 seconds or greater
- 2—4.1 to 5.6 seconds
- 3—3.2 to 4.0 seconds
- 4—3.1 seconds or less

- **For chair stand test**, have the participant wearing low-heeled sneaker-like shoes sit in a in a good supporting armless chair placed against a wall. Have the participant sit on the front edge of the chair and cross his/her arms across his/her chest. Have the participant attempt to stand without using his/her arms. If a participant cannot stand without using his/her arms, this is the end of the test, and record No for standing 1/x.

If the participant was able to stand, then proceed to timing the partici-

pant's ability to rise 5 times. Instruct the participant to put his/her arms across his/her chest, while sitting on the front edge of the chair. Instruct the participant to "stand up straight and as quickly as you can 5 times without stopping in between." Start the watch upon "go." Stop the watch when he/she is fully upright the fifth time. Record the time to the nearest tenth of a second. Reasons to stop the chair stand test (5x) are:

- The participant wants to stop;
- 60 seconds elapse and the participant has not completed 5 stands;
- The participant has a significant loss of balance.

Use the following rating scale to score this test:

- 0—The participant did not attempt the test or, completed fewer than 5 stands, or used his/her arms to rise one or more repetitions, or took longer than 60 seconds to complete 5 stands
- 1—16.7 to 59.9 seconds
- 2—13.7 to 16.6 seconds
- 3—11.2 to 13.6 seconds
- 4—11.1 seconds or less

- Add up the scores from the 3 tests (balance, walk, and chair stand) and report results to the participant according to the following:
 - Score 10-12 Great job; keep up the good work!
 - Score 7-9 Fair performance; further examination warranted.
 - Score 4-6 Physical performance problems; consult a physical therapist.

BE A HIP MD

Purpose: Early screening intervention for your patients who exhibit hip tightness that may make dressing, walking, and moving normally more difficult as they age.

Why OB-GYN? Usually women after the age of 50 are candidates for developing hip tightness and may become aware of this when getting into position for their pelvic exam. As an ob/gyn physician, this is an excellent opportunity to screen for hip tightness.

Importance: Early screening of hip tightness can afford patients quick, effective, and cost saving improvement in range of motion, leading to an immediate referral to a physical therapist. If the problem is not identified early, the treatment obviously takes longer and may not lead to the most optimal results. As gynecological physicians, you are in a position to save the health care system money and at the same time, improve your patient's quality of life.

Case Example: Mrs. Smith, age 50, complains to her gynecologist of tightness of her hips and difficulty in getting to the stirrups for a pelvic exam. She is told to exercise and stretch. Mrs. Smith complies and exercises and stretches and gets slight relief for a few years. Mrs. Smith at age 65 now notes she is unable

to get into position for her physical, and she has constant pains and complaints of stiffness. She walks bent at the hips and takes slow steps whenever she sits for more than 20 minutes. Now she is sent to see a physical therapist.

On Mrs. Smith's initial visit she has significant functional deficits as noted on a health/functional status survey in the areas of walking, stooping, bathing, and dressing. She also has significant pain, stiffness, and strength deficits as noted by her decreased scores obtained through examination of her range of motion, muscle strength, and functional capabilities in comparison to the norms for her age.

She is put on a program of warm-up exercises and joint mobilization of the hip capsule and stretching of the hip musculature. An intensive individualized strength-training program is developed for her. At one month, she has significant improvement in all areas and by 2 months, she has met 70% of her goals. She is instructed to continue her home exercise program and to return in one year for a check up.

Components of the Screening

1. Questions - Note difficulty
 - a. Is it difficult to cross your legs?
 - b. Do you have difficulty putting on pantyhose?

- c. Do you get stiff sitting for a long time or when you wake up?
 - d. Do you feel sore when you move your hips?
2. Maneuvers - Note limitation
 - a. Hip abduction
 - b. Hip rotation
3. Posture - Note standing with hip flexion

Referral: Send patients that are positive on 3 of the above to a physical therapist. In the referral, note problem "hip tightness" and ask for "evaluate and treat."

Physical Therapist Management will include: Examination to include: goniometric, dynamometry, postural, and functional analyses.

Treatment that may include:

- a. Possible modalities for warming up the capsule
- b. Joint mobilization
- c. Therapeutic exercises
- d. Strengthening program
- e. Home exercise program

Illustrations

1. Maneuvers
2. Posture
3. Card with questions and what to expect from physical therapy

Interested in the Task Force on Exercise Consumer Powerpoints?

The Task Force on Exercise Consumer Powerpoints, "From Frail to Fun" and "So You Want to Begin Exercising" are available at www.geriaticspt.org by clicking "Members."

The powerpoints are free to all Section members. You will need to log in using your last name and your APTA Member ID.

Alternately, anyone may order the powerpoints on CD from the online store.

Begin educating consumers with these outstanding powerpoints by downloading them today!

Thank you for supporting the Section on Geriatrics with your membership.

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Patient/Family Education

Guide to Safe and Effective Physical Activity and Exercise for the Aging Adult

In view of the evidence for the benefits of exercise, and the disability and mortality related to a *lack* of exercise, it may be more important to get permission NOT to exercise!



How Much Should I Exercise?

If you have not been active, start with 10 minutes at a time, a couple times each day. Slowly increase the time until you are exercising 30 minutes, 3-5 times per week.



Exercise Possibilities	Goals to strive for
<ul style="list-style-type: none"> Increasing general physical activity: take the stairs, park further away, walk to the mailbox, walk through all the aisles of the store 	<ul style="list-style-type: none"> 7 days per week
<ul style="list-style-type: none"> Aerobic activities: brisk walking, biking, swimming, water exercise, dancing 	<ul style="list-style-type: none"> 3-5 days per week
<ul style="list-style-type: none"> Strengthening activities: weight training, using resistance bands and tubes 	<ul style="list-style-type: none"> 2-3 times per week
<ul style="list-style-type: none"> Flexibility activities: stretching exercises 	<ul style="list-style-type: none"> 2-3 times per week
<ul style="list-style-type: none"> Balance activities: dancing, Tai Chi, lower body strengthening exercises, balance-challenging exercises 	<ul style="list-style-type: none"> 1-7 days per week
<ul style="list-style-type: none"> Functional activities: standing from a chair several times, wall slides, stair climbing 	<ul style="list-style-type: none"> Most days of the week



DON'T GIVE UP. EVERY EFFORT IS A SUCCESS!

Exercising: Safety and Benefits. . .

Exercise should not be so hard that it:

- Makes your joints hurt for more than 2 hours after activity.
- Makes you feel nauseous.
- Makes you extremely fatigued at the end of the day.



Inactivity Increases the Risk of:

- Premature death
- Heart disease
- Diabetes
- High blood pressure
- Depression
- Colon cancer
- Osteoporosis
- More stress
- Less energy
- Poor quality of life
- Falls and fractures
- Inability to care for yourself
- Premature disability
- Weight gain



Other Considerations:

- If you have chest pain, uncontrolled high blood pressure, or have heart problems, see your healthcare provider first.
- It is likely okay for you to exercise if you start slowly with a simple activity like walking or basic strengthening. Then, gradually increase the intensity over time. You should not have pain with your exercise.
- **For a more individualized program, get an exercise prescription from your physical therapist.**



More Section on Geriatrics consumer information is available at: www.geriaticspt.org (click "Consumers"), or call 800/999-2782 x8174

APTA consumer information
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Patient/Family Education



Osteoporosis: Guide to Safe and Effective Physical Activity and Exercise for the Aging Adult

- Osteoporosis, or porous bone, is a disease which leads to fragility of bone and increased risk of fracture.
- It affects 44 million Americans:
 - 10 million are diagnosed with osteoporosis.
 - 34 million have low bone density, putting them at risk.



Exercises for Osteoporosis

Cardiovascular/Aerobic:

- Impact activities (walking, dancing, hiking, etc.)
- 3-5 days per week
- Brisk pace
- 20-30 minutes



Resistance Exercises:

- Dumbbells, weight machines, cuff weights, exercise bands and tubes, or floor calisthenics
- 2-3 days per week
- 1-2 sets of 8-10 repetitions for all major muscle groups
- A resistance that cannot be performed more than 8-10 times



Balance Exercises:

- Activities to improve balance include those that challenge balance such as Tai Chi, lower extremity exercises and challenging gait activities performed daily.

Functional Exercises:

- Activity-specific exercises (brisk walking, climbing stairs, repeated standing from a chair, and other normal challenging activities) performed daily.

Focus of Exercise to Prevent Fractures:

- Increase or maintain bone density and bone strength
- Improve posture and body mechanics
- Improve balance/prevent falls



Incidence of fractures:

- 1 in 2 Caucasian women and 1 in 4 men over age 50 will have an osteoporosis-related fracture in her/his remaining lifetime.
- People of other ethnic backgrounds are at lesser, but substantial, risk of fracture.

Osteoporosis is responsible for more than 1.5 million fractures annually, including:

- Over 300,000 hip fractures
- 700,000 vertebral fractures
- 250,000 wrist fractures
- 300,000 fractures at other sites.

Exercising Safely With Osteoporosis. . .

Falls and Fractures:

- Most fractures in older adults are the result of a fall.
- More than 1/3 of adults over the age of 65 fall each year.
- The most serious injury from a fall in older adults is a hip fracture.
- 90% of hip fractures are the result of a fall.

Fall prevention includes:

- Education about risk factors
- Strength and balance exercises
- Home and environmental modifications
- Medication assessment to minimize side effects.



Safety for Exercise with Osteoporosis:

- If you have or are at risk of osteoporosis, you should receive an exercise prescription from a physical therapist.
- If you have osteoporosis, you should avoid spine flexion such as curl ups and toe touches. These movements can increase risk of spine fractures.



- Exercise should be done in your best posture.
- You should breathe through the exercise, not hold your breath.
- Avoid jerking or thrusting weights into position. The exercise should be done with smooth, steady movements.
- Muscle soreness lasting up to a few days and slight fatigue are normal after muscle-building exercises, but exhaustion, sore joints, and pain aren't.
- Exercises should be done in a pain-free range of motion.

You may have osteoporosis if you have:

- Broken a bone with little, or no, trauma
- Lost more than 2 inches from your maximal height
- A bone density test showing low bone density

Of those who suffer an osteoporotic hip fracture:

- 25% die within the next year.
- 20% require long-term care afterward.
- Only 15% can walk across a room unaided after 6 months.

Spine (vertebral) fractures can cause:

- Decreased quality of life
- Pain
- Loss of height
- Loss of function
- Rounded back posture
- Stomach pain and difficulty eating
- Difficulty breathing
- Decreased mobility and energy

Protect yourself: get screened for osteoporosis, learn more about preventing falls, and stay active!

More Section on Geriatrics consumer information (including information about preventing falls) is available at:
www.geriaticspt.org (click "Consumers"), or call 800/999-2782 x8174

APTA consumer information

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Patient/Family Education

Diabetes: Guide to Safe and Effective Physical Activity and Exercise for the Aging Adult

Diabetes is a chronic disease where the body does not produce or properly use insulin. Insulin is a hormone which changes sugars, starches and other foods into energy needed for daily activities. Physical activity, along with diet and medication, is a cornerstone of diabetes self-management. Physical activity is beneficial for the prevention and treatment of diabetes.



Exercise for the prevention of diabetes:

Weight control including at least 150 minutes/week of moderate to vigorous physical activity and a healthful diet with moderate caloric restriction has been shown to delay or prevent the development of type 2 diabetes.



Exercise prescription for those with diabetes:

Cardiovascular / aerobic exercise:

To improve your blood sugars, assist with weight management, and reduce the risk of cardiovascular disease, you should do:

- at least 150 minutes/week of moderate-intensity aerobic physical activity and/or
- at least 90 minutes/week of vigorous aerobic exercise.

Physical activity should be done over at least 3 days/week and with no more than 2 consecutive days without physical activity.

Exercise prescription for those with diabetes:

Resistance / strengthening exercise:

People with type 2 diabetes should perform resistance exercises, unless there is another medical condition which makes them unsafe. The guidelines for resistance exercises are:

- 3 times/week,
- targeting all major muscle groups (8-10 exercises),
- progressing to 3 sets of 8-10 repetitions of a weight that cannot be lifted more than 8-10 times.

To ensure resistance exercises are performed correctly, maximize health benefits, and minimize the risk of injury, you should see a physical therapist for initial supervision and a periodic reassessment.

Diabetes affects 20.8 million Americans, or 7% of the population.

- 14.6 million are diagnosed
- 6.2 million are undiagnosed
- 54 million people have pre-diabetes. People with pre-diabetes are at risk of developing diabetes and cardiovascular disease.

Exercising Safely With Diabetes. . .

Exercise considerations for safety in the presence of complications:

- **High blood glucose (hyperglycemia):** If you have type 1 diabetes, you should check for ketones if your blood glucose is over 250 mg/dl. If there are no ketones, you can exercise with caution. If there are ketones, you should not exercise vigorously. If you have type 2 diabetes, it is not necessary to postpone exercise for high blood glucose if you feel well and are well hydrated.
- **Low blood glucose (hypoglycemia):** If you take insulin or diabetes pills that help the body produce more insulin, added carbohydrate should be taken before exercise if your blood sugar is less than 100 mg/dl.
- **Retinopathy:** You may have activity precautions if you have diabetes eye disease. Ask your eye doctor and physical therapist for guidelines.

- **Peripheral neuropathy:** If you have loss of sensation, pain in your feet or other foot problems from diabetes, you may consider non-weight-bearing activities (swimming, bicycling, upper body exercises).
- **Autonomic neuropathy:** If you have autonomic neuropathy, you may be restricted in your exercise. Cardiac testing should be performed before starting physical activity more strenuous than your normal activities.
- **Microalbuminuria and nephropathy:** People with kidney disease from diabetes do not have specific exercise precautions. However, these conditions are associated with increased risk for cardiovascular disease, therefore if you have been sedentary, an exercise stress test should be done before starting exercise greater than the demands of your everyday living.

Exercise testing:

If you have been inactive and have diabetes, you may need a stress test before starting physical activity that is harder than your everyday living (more intense than brisk walking).



Recommendations for adults with diabetes:

- A1c: <7.0% (Hemoglobin A1c)
- Fasting blood glucose: 90-130 mg/dl
- Peak postprandial blood glucose: <180 mg/dl
- Blood pressure: <130/80 mmHg
- Lipids:
 - LDL <100 mg/dl
 - Triglycerides <150 mg/dl
 - HDL >40 mg/dl

Medical identification:

People with diabetes should always wear medical identification, especially during physical activity.

More Section on Geriatrics consumer information is available at: www.geriaticsppt.org (click "Consumers"), or call 800/999-2782 x8174

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2008 HOUSE OF DELEGATES MOTION

Kathy Brewer, PT, GCS, MEd, Section Delegate

Over the last few years, the Section on Geriatrics has been actively participating in the House of Delegates by proposing motions that influence the practice of physical therapy for our geriatric clients across the health care delivery system and promote awareness of physical therapy services to optimize healthy aging.

In 2008, the Section is proposing a motion regarding PHYSICAL THERAPISTS AND PHYSICAL THERAPIST ASSISTANTS AS PHYSICAL ACTIVITY/EXERCISE ROLE MODELS. This motion has been drafted with input from the Section's Task Force on "Promoting Physical Therapists as Exercise Experts for the Aging Population," Section Board members, and APTA staff. As individuals and as a profession, physical therapists and physical therapist assistants should strive to practice consistent physical activity and exercise that reflects accepted standards in both the private and public sector. Promotion of health, wellness, and fitness across the lifespan is accomplished through practice in the treatment of chronic disease and functional disability and further affirmed by role modeling behaviors.

PROPOSED BY: SECTION ON GERIATRICS

RC 32-07 PHYSICAL THERAPISTS AND PHYSICAL THERAPIST ASSISTANTS AS PHYSICAL ACTIVITY/EXERCISE ROLE MODELS

That the following be adopted:

PHYSICAL THERAPISTS AND PHYSICAL THERAPIST ASSISTANTS AS PHYSICAL ACTIVITY/EXERCISE ROLE MODELS

Whereas, physical therapists and physical therapist assistants are a microcosm of the national population;

Whereas, increasing numbers of physical therapists and physical therapist assistants are over the age of 50 years;

Whereas, physical therapists must be exercise experts across the lifespan and physical therapist assistants promote physical activity/exercise; and,

Whereas, physical activity/exercise have been shown to be the most influential intervention for maximizing functional abilities, health promotion, prevention, and quality of life;

Resolved, that physical therapists and physical therapist assistants should serve as role models for their patients/clients and

the public by meeting national guidelines of participation in at least moderate physical activity/exercise 30 minutes per day, 5 or more days per week.

SS: Members of the APTA have a major opportunity to be role models in attempting to positively influence the major health crises and diseases of civilization affecting the US population. Exercise is a powerful intervention for the mediation of chronic disease and functional disability. All research shows that physical activity/exercise has a positive impact on morbidity, mortality, quality of life, and functional abilities. No other intervention has been shown to be as effective in addressing deficiencies in muscle mass, bone mineral content, muscle strength, dynamic balance, overall physical activity level, gait, speed, and physical function. Physical activity/exercise improves the function of the cardiovascular/pulmonary, musculoskeletal, neuromuscular, and endocrine systems and has been shown to enhance cognition and decrease depression.

Extensive research data indicate that lack of physical activity and exercise create deconditioning, accelerated loss of muscle and bone strength, functional decline, a heightened risk for falls, and increased hospitalizations. Physical inactivity is responsible for 200,000 deaths per year in the United States. The costs to businesses, governments, and health care are enormous. Total health care expenditures due to physical inactivity are in excess of 90 million US dollars per year. Physical therapists are in the best position to positively influence aging. In addition, helping inactive individuals through our expertise, physical therapists and physical therapist assistants can promote physical activity/exercise by serving as role models by participating in moderate physical activity/exercise.

RELATIONSHIP TO APTA VISION 2020: Evidence Based Practice Professionalism

CURRENT POSITION/STANDARD/GUIDELINE/POLICY/PROCEDURE:

NONE

RELATED POSITION/STANDARD/GUIDELINE/POLICY/PROCEDURE:

NONE

SECTION ON GERIATRICS, APTA

EXERCISE RECOMMENDATIONS FOR OLDER ADULTS

The following table includes recommendations for exercise for older adults. These recommendations are based on the best available scientific evidence and consensus from experts in their respective professions including the Centers for Disease Control and Prevention, the American College of Sports Medicine, the American Geriatrics Society, the American Heart Association, the American Cancer Society, and from the National Institutes of Health- the National Institute on Aging. These recommendations provide the framework for prescribing specific exercises by listing the key elements of exercise prescription (frequency, intensity, duration, volume). Physical therapists should use these recommendations **as a starting place to design optimal and safe exercise programs.**

	Population	Intensity	Volume	Frequency
Muscle Performance	Healthy Aging	Low: 40% 1RM ^{1,2} Mod: 40-60% 1RM ^{1,2,3} High: >60% 1RM ^{1,2,3} 15-17 on Borg scale; 8-15RM ⁴ 8-12RM ⁶ 10RM ⁶ 10-12RM ⁷	1set; 10-15 reps; 8-10 exercises ^{1,2} 1set; 8-10 reps; 8-10 exercises ^{1,2,3} 1set; 6-8 reps; 8-10 exercises ^{1,2,3} 1-2sets; 10-15reps; 8-10 exercises ⁹ 2sets; 8-15reps; all major muscle groups ⁴ 1set; 8-12reps; 8-10 exercises ^{5,8} 2sets; 10reps; all major muscle groups ⁶ 2-3sets; 10-12reps; all major muscle groups (4UE and 4LE) ⁷	2-3x/ week ^{1,2,3,5,6,7} 2x/week ^{4,8,9}
	Chronic Disease	10-15RM ⁸ 8-15RM ^{9,10}	1set; 10-15reps; 8-10 exercises ⁸ 1-3sets; 10-15reps; 8-10 exercises ^{9,10}	2-3x/week ^{8,9,10}
	Frailty	10-15RM ^{5,8}	1set; 10-15reps; 8-10 exercises ⁸ 1-3set; 10-15reps; 8-10 exercises ^{5,11}	2x/week ⁸ 2-3x/week ^{5,11}
Aerobic Capacity	Healthy Aging	55/65%-90% HR _{max} ; 40/50%-85%HRR ⁵ 40-60%VO _{2max} ^{3,6,12} 55-75%HR _{max} ² 12-14 Borg scale ² 13 Borg scale ⁴ 40-60%HR _{max} 12-14 Borg scale ¹²	20-60min; at least 10min bouts ^{2,5,12} At least 30min ^{3,4,6,7}	3-5x/week ^{5,12} 5-7x/week ^{3,4,6,7} 3-7x/week ²
	Chronic Disease	50-70% HR _{max} ; 40-60%HRR ¹⁰	20-60min ¹⁰	3-5x/week ¹⁰
	Frailty	11-13 Borg scale; 40-60%HRR ¹¹	At least 20min ¹¹	≥ 3x/week ¹¹
Flexibility	Non-Specific	Sufficient to maintain ROM ⁵ Slowly into mild discomfort ^{2,4} Subjective sensation of resistance ¹ To point of resistance or mild discomfort ⁷	All major muscle groups ^{3,5} 3-4x/all major muscle groups with 10-30s holds ^{2,7} 3-5x/each major muscle group with 10-30s holds; 15-30min total ⁴ 3-5x/each key muscle group with 20-30s holds ¹	7x/week ⁵ 2-3x/week ^{2,5,7} 3-7x/week ^{3,4} 3-5x/week ¹
Balance	Non-Specific	Progressive, targeting important postural muscle groups ¹¹ Progress by decreasing base of support ⁷	Dynamic, focus on mobility. Static, focus on SLS. 4-10 different exercises. ⁷	1-7x/week ⁷
RM, repetition max; HRR, heart rate reserve; SLS, single leg stance				

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SECTION ON GERIATRICS COMBINED SECTION MEETING 2008 FEBRUARY 6-9 • NASHVILLE

SECTION HIGHLIGHTS:

First Timers Celebration Breakfast	Thursday February 7	7:00 – 8:00am
Section Meeting	Friday, February 8	5:30 – 7:30pm
Section Awards/Celebration	Friday, February 8	7:30 – 9:00pm
Balance and Falls SIG	Thursday, February 7	6:30 – 7:00pm
Osteoporosis SIG	Friday, February 8	7:00 – 8:00am
Health and Wellness SIG	Friday, February 8	7:00 – 8:00am
Student Forum	Friday, February 8	4:00 – 5:30pm

PRECONFERENCE COURSES

Functional Tests	Tuesday, February 5	8:00am – 4:30pm
Exercise Considerations	Wednesday, February 6	8:00am – 4:30pm
Clinical Residency Getting Started	Wednesday, February 6	8:00am – 4:30pm

PROGRAMMING

Three days of outstanding topics including Music to Motivate Movement; Medical Malpractice Issues; Vestibular Coding, Reimbursement and Practice; Aquatic Therapy; Restless Leg Syndrome; Osteoporosis; Stand Up and Be Strong, Community Based Program, Documentation; Interpretation of Clinical Research; Promoting Health and Wellness; Designing and Delivering Community Designed Programs; Nutrition and more.

For more CSM information, visit the SOG website at www.geriatricspt.org.

CONTINUING EDUCATION

Physical Therapists as the Exercise Experts for the Aging Adult: Evidence-based Assessment and Exercise Prescription

A Regional Course from the Section on Geriatrics, APTA
Worth 15 Contact Hours

Being presented twice in 2008:

April 12-13, 2008 (8 am–5 pm)

University of Kansas Medical Center
Kansas City, KS

Advance Deadline March 21, 2008

September 27-28, 2008 (8 am–5 pm)

Providence Portland Medical Center
Portland, OR

Advance Deadline September 5, 2008

Presented by:

Karen Kemmis, PT, DPT, MS, CDE

Mark Richards, PT, MS

UPON COMPLETION OF THIS COURSE, YOU WILL BE ABLE TO:

- Explain the relationship between aging, activity, exercise, and functional abilities
- Explore barriers to physical activity participation and effective exercise program
- Integrate components of an effective exercise program for individuals with pathologies, impairments, and functional limitations and disability
- Choose, justify and perform best objective tests and measures to identify relevant impairments and functional limitations
- Establish an effective exercise prescription informed by functional limitations and impairments
- Interpret exercise responses and modify exercise prescription accordingly
- Adapt an effective exercise prescription for individuals considering specific pathologies and needs

WHO SHOULD ATTEND?

Physical Therapists and Physical Therapist Assistants working with older adults in a variety of settings.

Space is limited: reserve your spot today!



Registration form available at www.geriaticspt.org
geriatics@apta.org
800/999-2782 x8588

PRICING FOR REGIONAL COURSES

	Advance	On-site
Section on Geriatrics Member	\$280	\$330
APTA Member	\$340	\$390
Non-member	\$400	\$450

CONTINUING EDUCATION

Best Practice Forum: Caring for the Aging Adult with Amputation

A Regional Course from the Section on Geriatrics, APTA
Worth 16 Contact Hours

September 26-27, 2008 (8:30 am–5:30 pm)

The Virginian

Fairfax, VA

Presented by:

Michelle M. Lusardi, PT, PhD

Victor G. Vaughan, PT, MS, ATC

David H. Rooney, CPO

Advance Deadline March 21, 2008

This 2-day interactive workshop uses a case based, problem-oriented approach to illustrate “best practice” for the rehabilitation and prosthetic care of aging adults, from time of amputation across the continuum of care toward independent function. The course draws on evidence from the clinical research literature as well as expertise of faculty and experience of participants, and applies and adapts this evidence the evaluation and care of aging adults with complex health issues, functional difficulties, and social/emotional/cognitive resources.

UPON COMPLETION OF THIS COURSE, YOU WILL BE ABLE TO:

- Organize an effective examination and documentation strategy for aging adults with recent amputation at the acute care and early rehabilitation level
- Develop an effective plan of care appropriate for initial care of aging adults with recent amputation.
- Develop an effective plan of care and exercise prescription, specifically tailored for an aging adult need for endurance, muscle performance, and postural control, for pre-prosthetic period of rehabilitation
- Use understanding of the design, pros/cons, and indications/contraindication of available prosthetic components to develop a recommendation for prosthetic prescription
- Develop an effective plan of care for introducing an aging adult to his/her prosthesis and initial prosthetic training.
- Effectively identify problems during prosthetic gait, and suggest appropriate strategies for remediation/improvement
- Develop an effective plan of care and plan for outcomes assessment (considering endurance, postural control, and functional mobility) for skilled use of a prosthesis in functional activities and environments.
- Suggest appropriate options for long-term prosthetic and rehabilitative follow-up for aging adults who have completed “prosthetic rehabilitation”

WHO SHOULD ATTEND?

Physical Therapists and Physical Therapist Assistants working with older adults in a variety of settings.

**Coming Soon: An additional course at the University of Indianapolis in
October 2008! See www.geriaticspt.org for more information.**

**Most 2007 courses were sold out: reserve your space in a 2008 course today!
Registration form available at www.geriaticspt.org**

EFFECTS OF BACK EXTENSOR STRENGTHENING IN FRACTURE INCIDENCE IN OSTEOPOROTIC INDIVIDUALS

Tammy Dziadek, PT, MS, GCS

Back extensor strengthening exercises are often prescribed for patients with vertebral compression fracture incidence secondary to osteoporosis. In some cases orthotic devices are also recommended to further reduce the incident of fractures. This article will detail the evidence for this treatment intervention.

BACKGROUND

Osteoporosis, or porous bone, is defined as a systemic disease characterized by low bone mass with both quantitative and qualitative bone deterioration, causing skeletal fragility and fractures.¹ In 1994 the World Health Organization established diagnostic criteria for osteoporosis as follows: bone density at the hip, spine, or forearm ≥ 2.5 standard deviations from the mean for healthy young adult women; or fracture without trauma. According to the National Osteoporosis Foundation, 50% of women and 25% of men over 50 years old will suffer an osteoporotic fracture in their remaining lifetime.² In 2002, the United States spent \$18 billion in direct osteoporotic fracture care including hospital, nursing home, and outpatient costs, and the cost continues to rise. Osteoporosis causes 1.5 million fractures annually, including 700,000 vertebral fractures.

A common negative consequence of osteoporosis, vertebral compression fractures cause severe physical deformity and psychological damage. Vertebral compression fractures result in increased kyphosis, increased forward posture, loss of height, and a protruding abdomen.^{3,4} These postural changes increase risk of falling and risk of additional compression fractures, in addition to causing chronic pain, reducing pulmonary function, and increasing disability. Pfeifer, Begerow, and Minne reported that one quarter of women aged 50 and older suffer one or more vertebral compression fractures.⁵

Osteoporotic individuals commonly receive medication and both weight bearing and resistive exercises to treat the disease. ATSU's Gender Health Care in Physical Therapy Course teaches its transitional doctoral students to incorporate weight bearing exercise, site-specific resistive exercise, impact exercise, posture correction, and balance training in treating osteoporosis.⁶ Previous coursework by Sara Meeks, PT, MS, GCS emphasized back extensor strengthening (the 2007 ATSU course taught a multifaceted approach).⁷ Appendix A details prone back extensor exercises by Meeks and Sinaki.

The rectangular vertebral body collapses to a triangular wedge with a ventral apex during a vertebral compression, or anterior wedge fracture. According to theory, strengthening the back extensor muscles posterior to the vertebral body reduces pressure to the collapsed ventral vertebral body.^{1,7}

CURRENT RESEARCH

The literature strongly supports strengthening the back extensors to reduce the risk of osteoporotic compression fractures.⁸⁻¹⁰ Sinaki et al conducted a landmark longitudinal control study over 10 years.¹¹ Subjects performed prone resistive back extensor strengthening using a weighted backpack, 10x/day 5 days/week for 2 years. As back extensor strength increased, resistance was progressively increased, up to a maximum of 50 lbs. The control group suffered 2.7 times more vertebral compression fractures than did the extensor strengthening group. Exercise benefits persisted 8 years after the cessation of the strengthening program. Bone mineral density of the extensor strengthening group increased significantly at 10 years (8 years after strength program cessation), but not at 2 years. The results clearly demonstrate the effectiveness of prone back extensor strengthening on

reducing incidence of compression fractures.

Recent research has confirmed the negative relationship between back extensor strength and vertebral compression fractures. Hongo et al,¹² Iki et al,¹³ Pfeifer et al,¹⁴ and Iki et al¹⁵ obtained similar results in their research. Earlier research had suggested relationships between trunk extensor torque and bone mineral density, as well as between thoracic kyphosis, trunk extensor strength, and bone mineral density.^{16,17}

Additional Findings

Back extensor strengthening correlates, not only with reduced vertebral fracture incidence, but also with reduced thoracic kyphosis, reduced fall risk, and improved quality of life.¹⁸ In a cohort study, Mika, Unnithan, and Mika concluded that back extensor strengthening reduces thoracic kyphosis and spinal deformity.¹⁹ Exaggerated thoracic kyphosis combined with reduced trunk muscle strength correlate with increased body sway, unsteady gait, and increased fall risk.²⁰ In subjects with osteoporosis, back extensor strength predicts quality of life.²¹

Low intensity regimens for frail individuals

Since frail osteoporotic people may fracture with high intensity strengthening, they may need reduced extensor strengthening regimens. Hongo et al conducted a randomized control trial to determine the effects of reducing resistance, repetitions, and frequency of back extensor strengthening.²² Subjects achieved strength gains despite reduced intensity. Although decreasing resistance, frequency, and repetitions reduced strength gains, the modified regimens allowed significant improvements. Frail, osteoporotic individuals may respond better to low intensity programs. The authors recommended low intensity ex-

tensor strengthening programs in frail, elderly osteoporotic people. A recent randomized control study confirms the efficacy of low intensity, home-based back extensor strengthening to improve quality of life and to reduce vertebral fracture risk in osteoporotic individuals.¹²

Spinomed Orthosis

The Spinomed, a 450 gram spinal orthosis, increases back extensor strength, decreases pain, and improves well-being in osteoporotic individuals with vertebral compression fractures. The customized Spinomed Orthosis promotes erect posture by distributing pressure over a large area of the spine; the lightweight back brace consists of a pad and strap system with hook and loop fasteners. Pfeifer, Begerow, and Minne conducted a randomized trial to assess the effects of the Spinomed Orthosis.⁵ All participants had 1 or more vertebral compression fractures due to osteoporosis and a kyphosis angle $\geq 60^\circ$. Wearing the Spinomed Orthosis 2 hours/day for 6 months yielded the following results: back extensor strength increased 73%, abdominal flexor strength increased 58%, kyphosis angle decreased 11%, body sway decreased 25%, vital capacity of the lungs increased 7%, pain decreased 38%, well-being increased 15%, and daily living limitations decreased 27%. Subjects enjoyed the benefits of the orthosis. When the initial participant group refused to stop wearing the orthosis at 6 months as originally planned, researchers modified the crossover study design. The Spinomed Orthosis significantly improves quality of life in people with osteoporotic vertebral fractures.

CONCLUSION

In conclusion, prone back extensor strengthening reduces risk of vertebral compression fractures, reduces thoracic kyphosis, reduces fall risk, and improves quality of life in people with osteoporosis. Low intensity back extensor strengthening benefits frail individuals with a high fracture risk. The Spinomed Orthosis augments strength gains and well-being, while reducing osteoporotic back pain.

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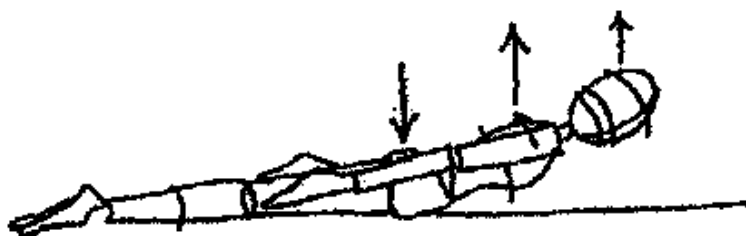


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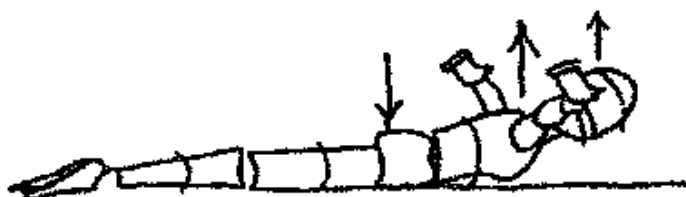
Appendix 1. Pronte Trunk Extension Exercises

Exercises 1-3 (by Sara Meeks, PT, MS, GCS)

1. Shoulder Blade Squeeze: Lie on abdomen. Press belly and pelvis into the surface. Squeeze shoulder blades together, raising front part of shoulders from the surface; then raise chest, head, and upper back. Hold for 2 slow seconds (1- one thousand, 2- one thousand), then relax.



2. Shoulder Blade Squeeze –Arms straight out to sides variation: Bring arms straight out to the sides at shoulder level, with elbows straight and palms down. Press belly and pelvis into the surface. Squeeze shoulder blades together. As you raise shoulders, chest, head, and upper back, raise arms also. Hold for 2 slow seconds (1- one thousand, 2- one thousand), then relax.



3. Shoulder Blade Squeeze –Arms overhead variation: Rest arms on the surface, extended alongside your head with elbows straight and palms down. Press belly and pelvis into the surface, then raise both arms, chest, and head up off the surface. Keep elbows straight and arms close to head for this variation. Hold for 2 slow seconds (1- one thousand, 2- one thousand), then relax.



4. Back extensor exercise to reduce compression fracture risk, supported by Sinaki et al.¹¹: Exercise #1, Shoulder Blade Squeeze, using a weighted backpack, up to a maximum of 50lbs.

AQUATIC EXERCISE: A META-ANALYSIS OF THE BENEFITS OF AQUATIC EXERCISES IN FEMALE OLDER ADULTS

Rebecca A. Brophy, BS

ABSTRACT

Current research shows the important benefits associated with exercise for the older adult in preventing disease and maintaining functional status. Aquatic Exercise programs are a new trend in exercise that has emerged in the last 10 years that many believe to be a better form of exercise for older adults. A review of the current research will explore and analyze the benefits of aquatic exercise programs based on the statistical information provided in each study. This review will attempt to determine how beneficial these programs can be for an older female adult. Further recommendations on the benefits of aquatic programs as well as the need for future research will also be examined.

INTRODUCTION

The number of older adults is rapidly rising with the aging of the Baby Boomers. Along with this increase in population, the desire to stay young, healthy, and active is also on the rise. Age-related decreases in muscle strength and aerobic capacity contribute to decreases in functional ability.¹ Research has long shown that individuals who exercise show positive potential for longer life expectancy, a reduced risk of falls, and a decrease in disease incidence.^{2,3} Cardiovascular fitness along with strength and muscular endurance is a focus area for exercise programs that aim to maintain health and an independent lifestyle.⁴ The American College of Sports Medicine (ACSM) also places specific emphasis on resistance exercises in order to maintain muscle mass, muscular strength, and flexibility throughout life.³

Specific research conducted by the American Geriatrics Society (AGS) for individuals with arthritis, suggested that an exercise program should include mild to moderate level exercises, the exercise program should be individualized, should focus on controlling pain, improving the ability to perform activities

of daily living tasks, increasing flexibility, and improving muscular strength and endurance programs.⁵ The AGS feels that these qualifications that make up a successful exercise program for individuals with arthritis should include an aquatic program.⁵ Water based programs have been proven beneficial for those individuals who have difficulty performing exercises on land due to the strain on the musculoskeletal system, orthopedic disease, mobility, or balance.^{1,3,4} Water provides a natural resistance and supportive buoyancy for all individuals, but these factors may be particularly important to seniors whose fear of pain and falls prevents them from actively participating in aerobic exercise program. The benefits of aquatic programs are not only limited to the physical aspects discussed here, but also to an improvement in functional ability to complete activities of daily living and emotional well-being.⁶ Water exercise programs may prove to be a good starting point for individuals who want to begin exercising, but are insecure or unsure of their abilities.

The purpose of this meta-analysis is to conduct a review of research executed in the last 10 years that investigate the benefits of aquatic based programs for women over the age of 55. It is hypothesized that the aquatic programs lead to benefits for metabolic and cardiovascular response as well as improving balance and aerobic fitness. A complete review and analysis of the statistical information as well as specific recommendations for future research will also be discussed.

METHOD

Data Collection

The research articles were gathered from a search of online university databases including ProQuest, Expanded Academic ASAP, and Academic Search Elite. The criteria included any research study written in the last 10 years with a focus on aquatic exercise programs for older female adults. Five articles were

identified that meet the criteria and were accessible. Each article was considered to be reputable based on the journal of publication and the researcher's credentials. Each article focused on the benefits of an aquatic based exercise regiment which included various physical attributes; including heart rate, metabolic and cardiovascular response, aerobic power, and other health related aspects. Although each had a different focus of the specific benefit of the aquatic program, the information obtained in comparing the studies provides an overall picture of the wide view of health benefits associated with aquatic exercises.

Participants

The participants for the studies included 122 elderly women between 55 and 79 years of age. The participants in all 5 studies were determined to be healthy female individuals who previously maintained a regular amount of physical activity. No demographic information other than gender and age were provided in the studies. It is important to note however that Devereux, Robertson, and Briffa¹ completed their study in Australia and Shono, Fujishima, Hotta, Ogaki, and Masumoto⁷ and Takeshima et al³ were both conducted in Japan. These factors were not considered to be statistically significant in the review of the articles.

Exercise Intervention

Each of the studies developed their own exercise program or adapted a program from previous research; therefore each study had a different set of exercises for the participants to complete (Table 1). The studies fell into 2 groups, those that focused solely on balance and flexibility and those that included specific aerobic exercises, to measure metabolic and cardiovascular systems. All exercise programs were monitored by staff experienced in aquatic exercise programs

Table 1. Summary of Research Studies and Exercise Programs

Article	Sample Size	Mean Age	Study Type	Factors Measured	Exercise Program
Broman et al, 2006	29	69	Control vs Training Group	Heart Rate, Oxygen Uptake, Aerobic Power	Deep water running with buoyancy vest , a 48 minute session, 2 times a week for 8 weeks
Devereux, et al, 2005	50	73.3	Control vs Training Group	Balance, Fear of Falling, and Quality of Life	50 minute session including warm-up, stretches, aerobic, Tai Chi, strength, posture, gait, vestibular, proprioception, and balance activities for 10 weeks.
Heithold & Glass, 2002	7	61	Land Training vs Water Training	Heart Rate and Perception of Effort	A practice session and 2 test sessions held on 3 consecutive nights, performed for a total of 24 minutes per session.
Shono et al, 2001	6	62.2	Land Water vs Water Training	Cardiorespiratory Responses: Oxygen Uptake, Heart Rate, Blood Lactate Concentration, and Stride Frequency	Three 4 minute walks both on land and in water, with increasing velocity.
Takeshima et al, 2002	30	69	Control vs Training Group	Heart Rate, Blood Pressure, Oxygen Uptake, Body Weight, FEV ₁ Cholesterol	A water exercise program consisting of 3 sessions a week, lasting for 70 minutes for a 12 week period.

and every program included a scheduled warm-up and cool-down period.

Data Analysis

The statistical information presented in each study was carefully reviewed. The published works did not include the raw data for any study, but the authors provided sufficient information and statistical summaries of the gathered information and performed tests. The information reported by each study was reviewed for its statistical significance. Each study has been summarized to provide a better overview of the purpose and results of the study.

RESULTS

The research study conducted by Takeshima et al³ examined the overall health related benefits of a water-based exercise program. The data was compared between the 2 groups and presented in statistical manner with a p value of $p < 0.05$ considered statistically significant. The training (TR) group completed the program and demonstrated favorable health improvements as a result of the program when compared to the control (N) group as well as their own baseline results taken prior to the program. Significant changes observed were a decrease in skin-fold thickness (-0.8%), total cholesterol (-11.1%), and LDLC (-17.0%) were also lowered. The TR group also showed a 7% increase in forced expiratory volume (FEV) or the volume of air that can be forced out during exercise. Overall results showed an increase in oxygen intake for participants

in the TR group, with a 12% increase at peak aerobic exercise. Takeshima et al³ conclude that the results shown during the study are both statistically valid and also concurrent with the existing research data. The article itself allows for the research to be easily replicated by others and provides enough experimental data to support the conclusion. The sample size, although limited ($n=15$) suggests that the information can provide valid statistical background and transferable to a larger population.

Shono et al⁷ conducted a study to determine the cardiorespiratory response to a low intensity walking program conducted both on land and in water. The data was measured using a p value of $p < 0.05$. The results showed a statistical difference between the oxygen uptake (VO_2) of the first water and land sessions, with a significantly lower VO_2 in the water. However there was no difference between the second and third land and water sessions. The relationship between heart rate (HR) and VO_2 showed a significant linear relationship for both the land and water based exercise. The sample size used in this study is extremely small ($n=6$) and is therefore not an accurate representation of all older adults. The sample size limits the transferability of the study much beyond the academic world as the results are not representative of the population. The study focused on controlling the water temperature and flow velocity of the water, so that the results could be directly compared to its land based equivalent. Future studies could benefit from a

direct relationship to water and land walking with a temperature differential to better explore direct benefits of such water exercise programs. The results are also based specifically on only the heart rate and VO_2 statistics and only briefly mention other factors that may have biased the results such as the water resistance and the individual's perceived exertion.

In their 2002 study, Heithold and Glass² explored the effects of heart rate (HR) and perceived effort by comparing land and water based exercises. Heithold and Glass² used a smaller sample size of only 7 participants, each of whom completed both the land and aquatic portions of the study. Heithold and Glass² used a significance rate at $p < 0.05$ to compare statistical data. The study does not provide the statical data used to calculate the results, but provide the results in Figure/Table format only. This limits the reviewers' ability to adequately check the accuracy of the conclusions reached by the researchers as the statistical comparison and test data are not provided. The study found that the heart rate was overall lower in the water based exercises compared to the same land exercises. There was no significant difference in rate of perceived exertion (RPE) ratings between the 2 exercise programs. Heithold and Glass² conclude that despite the fact that RPE was reported as similar, individuals elicit a higher heart rate when exercising on land than on water. Again the smaller sample size comes into effect since results may not be representative of a larger population.

Devereux, Robertson, and Briffa¹ researched the effects of water based programs with a focus on balance exercises to prevent falls and improve quality of life. The results of the intervention group showed a larger improvement in both right (2.1 change) and left (1.8 change) step test, with a p value of $p < 0.01$. The p value used in this study allows for the results to show a smaller percent of change and still be considered to be statistically significant. Devereux, Robertson, and Briffa¹ conclude that the use of the aquatic environment can increase balance in older individuals which directly translates to an improvement of dynamic standing balance on land. Although this study indicates that an exercise program was conducted, it provides no breakdown of the actual individual exercises. The study is therefore not easily replicated and does not provide for a direct correlation of the benefits of the exercises in comparison to the results reported. The study does draw upon previous studies to provide a baseline and background for their statistical tests as well as a determination of their sample size.

In order to study the effects of high intensity deep water training on aerobic power, Broman et al⁴ recruited 29 women to participate in their exercise program. The p value was set at $p < 0.05$. The results showed a linear decrease of heart rate in the training group after the training session had been completed, (7 beats per minute, BPM decrease) but a higher resting heart rate in the training group at completion of the program. No change was noted in the systolic and diastolic blood pressure of the training group. The submaximal heart rate also decreased by a mean value of 4 BPM, although 5 of the women showed better results with a decrease of 8 to 15 BPM. The maximal aerobic capacity was increased by 10%, which shows that the intensity of the program can be transferred with the same effects of land based programs. Broman et al⁴ conclude that deep water running has similar effects of land based programs designed to increase the aerobic power in elderly women, but with the added benefits of the lower direct impact on the body. Broman et al⁴ discusses the fact that the results may not be replicated in individuals who are not already involved in an exercise program. Further expansion on this subject could be explored by using individuals who do not have a

previous exercise history, to study the improvement over a designated period of time.

DISCUSSION

The combined results of the 5 studies do indicate a positive relationship between water based exercise programs and the effectiveness to reduce heart rate, blood pressure, and increase oxygen uptake. The results also show an increase in balance and aerobic power. The articles reviewed all appear to have the statistical background to support their claim, although may not be a true representation of the entire aging population. Overall, there is enough data that has been researched and evaluated as statistically significant to support the hypothesis that aquatic programs do have health benefits for older adults. Further research is needed to provide results that can be transferable to more individuals in the aging population. This includes using a population who do not have the previous exercise background that may be starting to exercise or using the program for rehabilitation purposes. This is particularly important as the aging population continues to grow in number.

STUDY LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

The number of current articles that discuss the affects of aquatic exercise programs are limited and the ability to directly compare the results is difficult due to the variations of methods and measured parameters. Further, the fact that the study was limited to 5 articles, with 122 participants allows for a higher rate of positive results and larger statistical variations, as a smaller sample size was used. Each study was conducted in a relatively short period of time and does not include any follow up on the long-term benefits of the aquatic programs. Future research is needed to explore all the benefits of aquatic programs for the elderly. Such research should be focused on direct land and water based comparisons, as well as the long term benefits on muscle strength, bone density, balance, and flexibility.

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WRITING AGE DEFYING FITNESS: A BOOK FOR HEALTH PROMOTION

Carole Lewis, DPT, PT, GTC, GCS, MSG, MPA, PhD, FAPTA



There is a great need for physical therapists to share their expertise with consumers through publication of consumer based articles and books. Drs Carole Lewis and Marilyn Moffat met that goal with their book Age Defying Fitness: Making the Most of Your Body for the Rest of Your Life (ADF). As stated in the publicity material from Peachtree Publishers:

“ADF brings the special skills of PTs to the masses and is designed to help them do exactly what the title suggests—particularly the 78 million baby boomers who are discovering first-hand that our bodies, do indeed, change with age!” ---But many people don't realize that PTs are actually exercise experts. They have the in-depth knowledge of all forms of exercise—as it relates to movement, function, health, wellness and fitness. In fact PT's have more training and expertise in this area than any other medical professional. “

The following is a summary written by Dr Lewis of the process she and Dr Moffat undertook to write ADF. Her goal is to encourage other PTs to take the step to write by sharing their lessons learned in writing a book.

BIRTH OF A BOOK AND LESSONS TO BE LEARNED

Prior to the writing of *Age-Defying Fitness: Making the Most of Your Body for the Rest of Your Life* (ADF), I knew Dr Marilyn Moffat professionally through association contacts. One day I decided to approach Marilyn about writing a book on fitness. Marilyn agreed and the project was born.

Getting a book published involves writing a prospectus which is submitted to a publisher. However prior to writing the prospectus, it is imperative to check out the competition. Ours consisted of the usual fitness book suspects, those written by personal trainers, movie stars, nutritionists, and one by a physical therapist. An interesting finding was that one of the top selling books on fitness was written, believe it or not, by a nutritionist. The best part of the book by the nutritionist was the exercise section. In our opinion it was adequate but not up to what a physical therapist could write. The lesson to be learned from this step in book development is to recognize how much we as physical therapists have to offer the public. It is time for us to STOP being the best kept secret in the health service delivery system.

The next step prior to submitting our prospectus was to identify our target audience and to be sure we were meet-

ing their need. We talked to patients and clients at their time of discharge and asked them; “Now that you have completed your physical therapy program, are there any other questions you might have about your long-range fitness goals.” The responses totally reinforced what we had put forth as our 5 domains of fitness. The lesson to be learned from this part of the publishing process is that our patients and clients have a lot to offer us. We just need to ask the right questions.

It then became time to do the writing. Many people asked us how we found time to do a project like a book. Our answer is that you need to make the time to do something you really want to do. We all have very busy lives, but if you really want to do something, find the time. If you have writers block, type anything to get started and edit it later. We also blocked time (eg, week-ends) to spend major quality time doing the writing. Eventually you will have a package you are proud to show others. The lesson to be learned is; just do it.

You have chance after chance to make it perfect. Once you think it is perfect, it is sent out to others who let you know how perfect it is not. Then you write it all over and over and over again. Here is the terrifying truth about publishing. When you do turn in your final manuscript you are only 1/3 of

the way there, 2/3 of the work occurs after that point with re-writes, re-edits, galleys, and proofs. The lesson to be learned is that writing a book is a lot of work but it is worth it. The lesson to be learned from this is don't be afraid to create something and share your ideas. You might be surprised at who responds.

AN ENCAPSULATED VERSION OF AGE DEFYING FITNESS

ADF contains all 5 domains of fitness—posture, strength, balance, flexibility, and endurance. Most fitness books address 2 or 3 at the most often ignoring balance, posture, and/or flexibility. Age related changes in each domain are explained; why they occur and what we can and can not do about them.

BIRTH OF A BOOK

- An idea
- Check out the competition
- Determine your target audience
- Submit a perspective to publishers
- Write the book
- Re-write, edit, re-write, edit

Chapter One

Chapter One is a general assessment chapter. Readers are asked the questions below.

- Do you feel like you're not standing as straight and tall as you once did?
- Is walking up a flight of stairs a strain at times?
- Are you getting up from your chair more slowly than you used to?
- Is it getting more difficult for you to look to the left and right while backing up your car?
- Do you get stiff sitting through a long movie?
- Is standing on 1 leg to put on your shoe difficult or impossible?
- Do you trip or lose your balance more easily?
- Does walking or jogging a distance take longer than it used to?

The chapter has a quick review of the physiological changes that occur in the body with aging. Pointers are given on how to get started and how to use the book. The remainder of the chapter is a set of tests for each of the 5 domains of fitness: Posture, Strength, Flexibility, Balance, and Endurance. If a reader scores low on a sample test from one of the domains, they are advised to read the specific chapter in which they received a deficient score. The final pages of the first chapter give tips for getting started and for succeeding at an exercise program.

Chapter Two

This is the posture chapter. This chapter reviews the components of proper posture, postural changes with age, and background on the human skeleton. There is a brief description on osteoporosis and spinal stenosis as well. Then the reader is led through an 8- item postural assessment. Using the "Prescription for Posture" score sheet, the reader can easily see what areas need work and which exercises to pursue. The chapter ends with a section entitled "Daily Tips and Energizing Ideas." It provides the readers with a review of ways to modify daily activities that will enhance posture.

Chapter 3

This is the longest chapter of the book. Physical therapists are intimately

familiar with all the declines that can occur due to lack of strength, therefore *Age De-fying Fitness* has addressed them head on. The beginning of this chapter details the importance of strength, strength changes associated with aging, and a brief description of muscle physiology. Fourteen different muscle strength tests are given with some of them using a Thera-band with norms for men and women. Readers are encouraged to fill out the Prescription for Strength form and to pursue exercises for the specific strength deficit noted. In addition, tips and key points are given for strength training. The next section has 24 strength training exercises (8 for the arms, 8 for the legs, and 8 for the neck and trunk) that are specific for deficits noted in the extremities and spine. The chapter ends with suggestions on how to take this program to the gym and how to incorporate more strengthening into daily activities.

Chapter 4

The balance chapter was the most fun chapter to write because very few books view this as a domain of health. So this could be a first in a fitness book. The chapter starts with some of the many reasons why one might have a balance problem. The assessment in this chapter contains 17 tests that are fun and easy to do. When a problem is noted it is reported on the "Prescription for Balance" Score sheet. This chapter also has 8 exercises for balance. Again these exercises are tied to areas where deficits are noted.

Chapters 5 and 6

These 2 chapters focus on flexibility and endurance respectively have a similar layout to the 3 preceding chapters and provide a similar comprehensive health promotion approach to these extremely important areas of the 5 domains.

Chapter 7

The final chapter of the book puts it all together. Topics that are discussed include the following: committing to exercise, encouraging yourself to exercise, and coping with soreness. Finally, some cases and personal experiences are given to illustrate barriers to beginning and staying with a program, as well as

the positive aspects of fitness. The book provides almost 100 current evidence-based references for readers to use to search for more information.

CONCLUSION

We see this as a wonderful opportunity for physical therapists to spread the word and get the secret out; physical therapists are the exercise experts. We hope you can use the information in ADF for yourself and for your patients and clients and get more involved in the health promotion, wellness, and fitness arenas for our increasingly elderly population. In addition our goal is to inspire other therapists to meet the challenge and promote their expertise in consumer publications. ADF can be purchased in most bookstores, on Amazon, or autographed copies are on sale through the APTA Foundation with proceeds to benefit the Foundation.

Carole Lewis is a private practice and consulting clinician and specialist for Professional Sport Care and Rehab. She lectures exclusively for GREAT Seminars and Books. Dr Lewis is also the author of numerous textbooks. Her website address is www.greatseminarsandbooks.com.

LESSONS TO BE LEARNED

Recognize how much we as physical therapists have to offer the public.

STOP being the best kept secret in the health service delivery system.

Our patients and clients have a lot to offer us, just ask the right questions.

Just do it.

Writing a book is a lot of work but it is worth it.

Don't be afraid to create something and share your ideas.

You might be surprised at the response.

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The aging process has you

firmly in its grasp if you never

get the urge to throw a snowball.

- Doug Larson

Current Volunteer Opportunities in the Section on Geriatrics

Check out the following positions at www.geriatricsppt.org, by clicking "Volunteer" under "Members." *Application deadline 2/22/08.*

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State Advocate (Vacancies in CA- Southern, CA- Northern, CT, DC, IL, LA, ME, UT, VA, WI, WY)
To creatively promote the benefits of PT to consumers, and/or to promote best practice geriatric PT to PTs, PTAs and Students: whatever interests you most!

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