

# Bone Health Special Interest Group Research Update

March, 2010-Issue 3

## In This Issue

CSM and Beyond

Research: Adapted Physical Activity Program

Research: Spinal Extension Exercises

Bone Health Meetings and Symposia

## Quick Links

[Section on Geriatrics](#)

[Bone Health SIG](#)

[National Osteoporosis Foundation](#)

## Greetings!

Thank you for your membership in the Bone Health SIG! Welcome to our newest feature- the Research Update. Each issue will include abstracts of recently published research articles pertaining to bone health. We hope this information will give you new ideas for optimal management of our current or potential clients.



## CSM and Beyond

Thanks to all who were able to join us at CSM 2010 in beautiful San Diego! And welcome to those of you new to the SIG. We attended some excellent pre-courses and programming and got to meet and connect with many members of our Sections. It was great to see and talk with many of you at the Stay Well session and Bone Health SIG business meeting. A summary of the presentations by the 3 Section Chairs will be posted on the Geriatrics website. This was our first official year as the newly named Bone Health SIG, and we are excited about our future role and opportunities.

We recognized the challenges of our new name and mission: to promote professional and consumer knowledge of bone health and fracture prevention. We discussed the importance of having strong bone health content programming at CSM. We are interested in sponsoring some international researchers in bone health at next year's CSM meeting in New Orleans, Feb 9-12, 2011. Please consider sharing your own expertise and submit for CSM 2011. Access to ScholarOne for the submission of proposals is available at: <http://apta-csm2011.abstractcentral.com/>. The deadline for proposals for educational sessions and courses is April 1, 2010. The deadline for abstracts for platforms and posters is June 2, 2010.

At our business meeting we approved changes to establish electronic voting and 3 year terms of office for our Executive officers and Nominating Committee. Sherri Betz was elected Vice Chair and Kathy Shipp to the Nominating Committee. At the Section on Geriatrics member meeting, Nancy Abodeely, Bone Health SIG Chair, reported on our goals and highlighted some accomplishments this year. Section members were encouraged to join and participate in the BHSIG and come "knock heads with boneheads."

Several BHSIG members participated in international and national bone health meetings, including the 8th International Symposium on Osteoporosis, the UCSF 6th Annual Osteoporosis Symposium, the Global Bone and Joint Decade Network Conference, and the ASBMR Annual Meeting. Thanks to Karen Kemmis, Carleen Lindsey, Kathy Shipp, Tim Kauffman, and Wendy Katzman for their contributions.

We were proud to introduce our Stand Tall Exercise Program video for consumers, created by Wendy Katzman and produced by Sherri Betz, at the lively Geriatrics booth. The video is based on the doctoral research of Wendy Katzman and is designed to improve posture and kyphosis and strengthen back and core muscles. The DVD and research citations are available from the Geriatrics Section web site.

## Effects of an adapted physical activity program in a group of elderly subjects with flexed posture: clinical and instrumental assessment

Benedetti MG, Berti L, Presti C, Frizziero A, and Giannini S. Effects of an adapted physical activity program in a group of elderly subjects with flexed posture: clinical and instrumental assessment. *J Neuroeng Rehabil.* 2008 Nov 25;5:32.

Movement Analysis Laboratory, Rizzoli Orthopaedic Institute, via di Barbiano 1/10, 40136 Bologna, Italy

The electronic version of this article is the complete one and can be found online at: <http://www.jneuroengrehab.com/content/5/1/32>

**BACKGROUND:** Flexed posture commonly increases with age and is related to musculoskeletal impairment and reduced physical performance. The purpose of this clinical study was to systematically compare the effects of a physical activity program that specifically address the flexed posture that marks a certain percentage of elderly individuals with a non specific exercise program for 3 months. **METHODS:** Participants were randomly divided into two groups: one followed an Adapted Physical Activity program for flexed posture and the other one completed a non-specific physical activity protocol for the elderly. A multidimensional clinical assessment was performed at baseline and at 3 months including anthropometric data, clinical profile, measures of musculoskeletal impairment and disability. The instrumental assessment of posture was realized using a stereophotogrammetric system and a specific biomechanical model designed to describe the reciprocal position of the body segments on the sagittal plane in a upright posture. **RESULTS:** The Adapted Physical Activity program determined a significant improvement in several key parameters of the multidimensional assessment in comparison to the non-specific protocol: decreased occiput-to-wall distance, greater lower limb range of motion, better flexibility of pectoralis, hamstrings and hip flexor muscles, increased spine extensor muscles strength. Stereophotogrammetric analysis confirmed a reduced protrusion of the head and revealed a reduction in compensative postural adaptations to flexed posture characterized by knee flexion and ankle dorsiflexion in the participants of the specific program. **CONCLUSION:** The Adapted Physical Activity program for flexed posture significantly improved postural alignment and musculoskeletal impairment of the elderly. The stereophotogrammetric evaluation of posture was useful to measure the global postural alignment and especially to analyse the possible compensatory strategies at lower limbs in flexed posture.

PMID: 19032751 [PubMed - indexed for MEDLINE]

## Spinal extension exercises prevent natural progression of kyphosis

Ball JM, Cagle P, Johnson BE, Lucasey C, Lukert BP. Spinal extension exercises prevent natural progression of kyphosis. *Osteoporos Int.* 2009;20:481-489.

Department of Physical Therapy Education, School of Allied Health, University of Kansas Medical Center, Kansas, KS, USA

This abstract can be found online at: <http://www.springerlink.com/content/n6r01k59m0k8ug97/>

The angle of kyphosis increases with age with the most rapid increase occurring between 50 and 60 years. The progression of kyphosis was prevented in women ages 50-59 years who performed

extension exercises three times a week for one year. **INTRODUCTION:** The purpose of this study was to (1) measure the progression of the angle of kyphosis with age and (2) determine whether spinal extension exercises prevent progression of hyperkyphosis in women 50-59 years of age. **METHOD:** Part 1: Cross-sectional study of changes in posture with age, determined by measuring spinal curves in 250 women 30-79 years of age. Part 2: One-year prospective, descriptive analysis of the effect of extension exercises on posture in women 50-59 years of age. Depth of the cervical curve (CD), area under the thoracic curve (TA), and height were measured using a device developed at Kansas University Medical Center. Changes in CD and TA in women compliant with extension exercises were compared to those in non-compliant women. **RESULTS:** Kyphosis increases with age in healthy women, with the greatest difference observed between women 50 and 59 years of age. The progression of kyphosis was greater in women who did not perform extension exercises compared to those who performed extension exercises three times per week for 1 year. The difference in change in CD and TA between the two groups was highly significant (CD  $p = .0001$ , TA  $p = .0001$ ). **CONCLUSIONS:** Kyphosis increases with age in healthy women. In this study the greatest difference in the angle of kyphosis was observed between the fifth and sixth decade. Exercises which strengthen the extensor muscles of the spine can delay the progression of hyperkyphosis in the group included in this study, i.e., women 50-59 years of age.  
PMID: 18661090

## Bone Health Meetings and Symposia

We will keep you informed of current bone health research and collaborations through the year. This month, SIG members attended the Clinical Osteoporosis 2010, March 10-13, in San Antonio. This symposium is jointly sponsored by the National Osteoporosis Foundation and the International Society for Clinical Densitometry. If you are aware of any bone health related meetings and conferences, please let us know so we can share this in future communications.

Coming up are the following:

May 5 - 8, 2010

World Congress on Osteoporosis  
IOF WCO - ECCEO10  
Fortezza da Basso  
Florence, Florence, Italy  
<http://www.iofwco-ecceo10.org>

July 15-16, 2010

Osteoporosis :New Insights in Research, Diagnosis, and Clinical Care  
University of California  
San Francisco, CA  
<http://www.cme.ucsf.edu/cme/CourseDetail.aspx>

October 15 - 19, 2010

ASBMR 2010 Annual Meeting  
Toronto, Ontario, Canada  
<http://www.asbmr.org>

November 28 - December 1, 2010

Osteoporosis Conference 2010  
Arena & Convention Centre Liverpool  
Liverpool, Merseyside, United Kingdom  
[www.nos.org.uk/conference](http://www.nos.org.uk/conference)

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Section on Geriatrics APTA

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