

Bone Health Special Interest Group Research Update

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Greetings!

Thank you for your membership in the Bone Health SIG! In this month's issue, we are excited to feature two recently published studies by our very own Bone Health SIG member, Dr. Wendy Katzman, PT, DPTSc, OCS. She is a BIRCWH K12 Scholar and Assistant Clinical Professor at the University of California, San Francisco Department of Physical Therapy and Rehabilitation Science.

Her clinical commentary, published in JOSPT, provides a valuable description of hyperkyphosis, its consequences, and management, while her article in Osteoporosis International highlights the utility of assessing kyphosis. Dr. Katzman and her colleagues found kyphosis to be related to mobility limitations. Look under "Quick Links" for a link to purchase the "Stand Tall," the exercise DVD discussed in the JOSPT article.

We hope this information will give you new ideas for optimal management of our current or potential clients.



Age-Related Hyperkyphosis: Its Causes, Consequences, and Management.

Katzman WB, Wanek L, Shepherd JA, Sellmeyer DE. Age-related hyperkyphosis: Its causes, consequences, and management. J Orthop Sports Phys Ther. 2010;40(6): 352-360. Epub 15 April 2010.

[Age-Related Hyperkyphosis: Its Causes, Consequences, and Management](#)

SYNOPSIS: Age-related hyperkyphosis is an exaggerated anterior curvature in the thoracic spine that occurs commonly with advanced age. This condition is associated with low bone mass, vertebral compression fractures, and degenerative disc disease, and contributes to difficulty performing activities of daily living and decline in physical performance. While there are effective treatments, currently there are no public health approaches to prevent hyperkyphosis among older adults. Our objective is to review the prevalence and natural history of hyperkyphosis, associated health implications, measurement tools, and treatments to prevent this debilitating condition. **LEVEL OF EVIDENCE:** Diagnosis/prognosis/therapy, level 5.

Age-Related Hyperkyphosis, Independent of Spinal Osteoporosis, is Associated With Impaired Mobility in Older Community-Dwelling Women

Katzman WB, Vittinghoff E, Kado DM. Age-related hyperkyphosis, independent of spinal osteoporosis, is associated with impaired mobility in older community-dwelling women. *Osteoporos Int*. 2010 May 18 (epub ahead of print).

[Age-related hyperkyphosis, independent of spinal osteoporosis, is associated with impaired mobility in older community-dwelling women.](#)

SUMMARY: While many assume hyperkyphosis reflects underlying spinal osteoporosis and vertebral fractures, our results suggest hyperkyphosis is independently associated with decreased mobility. Hyperkyphosis is associated with slower Timed Up and Go performance times and may be a useful clinical marker signaling the need for evaluation of vertebral fracture and falling risk.

INTRODUCTION: While multiple studies have demonstrated negative effects of hyperkyphosis on physical function, none have disentangled the relationship between hyperkyphosis, impaired function, and underlying spinal osteoporosis. The purpose of this study is to determine whether kyphosis, independent of spinal osteoporosis, is associated with mobility on the Timed Up and Go, and to quantify effects of other factors contributing to impaired mobility. **METHODS:** We used data for 3,108 community-dwelling women aged 55-80 years in the Fracture Intervention Trial. All participants had measurements of kyphosis, mobility time on the Timed Up and Go test, height, weight, total hip bone mineral density (BMD), grip strength, and vertebral fractures at baseline visits in 1993. Demographic characteristics included age and smoking status. We calculated mean Timed Up and Go time by quartile of kyphosis. Using multivariate linear regression, we estimated the independent association of kyphosis with mobility time, and quantified effects of other covariates on mobility. **RESULTS:** Mean mobility time increased from 9.3 s in the lowest to 10.1 s in the highest quartile of kyphosis. In a multivariate-adjusted model, mobility time increased 0.11 s ($p = 0.02$) for each standard deviation (11.9 degrees) increase in kyphosis. Longer performance times were significantly associated with increasing age, decreasing grip strength, vertebral fractures, body mass index ≥ 25 , and total hip BMD in the osteoporotic range. **CONCLUSIONS:** Kyphosis angle is independently associated with decreased mobility on the Timed Up and Go, which is in turn correlated with increased fall risk. Hyperkyphosis may be a useful clinical marker signaling the need for evaluation of vertebral fracture and falling risk.

PMID: 20480146 [PubMed - as supplied by publisher]

Bone Health Meetings and Symposia

We will keep you informed of current bone health research and collaborations through the year. 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:

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

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