

# Bone Health Special Interest Group Research Update

November, 2010-Issue 8

## In This Issue

Exercise prescription after fragility fracture in older adults: a scoping review.

A comparative analysis of the results of vertebroplasty and kyphoplasty in osteoporotic vertebral compression fractures.

Bone Health Meetings and Symposia

## Section Contacts

[Section on Geriatrics](#)  
[Bone Health SIG](#)

## Resources

National Osteoporosis Foundation  
Stand Tall Video  
Kypholordosis Measurement Using a Flexible Curve

Thank you for your membership in the Bone Health SIG! We hope this information will give you new ideas for optimal management of our current or potential clients. In this issue, we focus on the management of vertebral fractures. Feehan and colleagues provide a large-scale systematic review of the literature regarding exercise prescription following vertebral fracture, while Kumar and colleagues present findings of their comparison of kyphoplasty and vertebroplasty on several variables, including pain, functional disability, and quality of life.



## Exercise prescription after fragility fracture in older adults: a scoping review.

Feehan LM, Beck CA, Harris SR, MacIntyre DL, Li LC. Exercise prescription after fragility fracture in older adults: a scoping review. *Osteoporos Int.* 2010 Oct 22. [epub ahead of print].

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[Exercise prescription after fragility fracture in older adults: a scoping review.](#)

### Abstract

The purpose of this study is to identify and chart research literature on safety, efficacy, or effectiveness of exercise prescription following fracture in older adults. We conducted a systematic, research-user-informed, scoping review. The population of interest was adults aged  $\geq 45$  years with any fracture. "Exercise prescription" included post-fracture therapeutic exercise, physical activity, or rehabilitation interventions. Eligible designs included knowledge synthesis studies, primary interventional studies, and observational studies. Trained reviewers independently evaluated citations for inclusion. A total of 9,415 citations were reviewed with 134 citations (119 unique studies) identified: 13 knowledge syntheses, 95 randomized or controlled clinical trials, and 11 "other" designs, representing 74 articles on lower extremity fractures, 34 on upper extremity, eight

on vertebral, and three on mixed body region fractures. Exercise prescription characteristics were often missing or poorly described. Six general categories emerged describing exercise prescription characteristics: timing post-fracture, person prescribing, program design, functional focus, exercise script parameters, and co-interventions. Upper extremity and ankle fracture studies focused on fracture healing or structural impairment outcomes, whereas hip fracture studies focused more on activity limitation outcomes. The variety of different outcome measures used made pooling or comparison of outcomes difficult. There was insufficient information to identify evidence-informed parameters for safe and effective exercise prescription for older adults following fracture. Key gaps in the literature include limited numbers of studies on exercise prescription following vertebral fracture, poor delineation of effectiveness of different strategies for early post-fracture mobilization following upper extremity fracture, and inconsistent details of exercise prescription characteristics after lower extremity fracture.

PMID: 20967425 [PubMed - as supplied by publisher]

## **A comparative analysis of the results of vertebroplasty and kyphoplasty in osteoporotic vertebral compression fractures.**

Kumar K, Nguyen R, Bishop S. A comparative analysis of the results of vertebroplasty and kyphoplasty in osteoporotic vertebral compression fractures. *Neurosurgery*. 2010 Sep;67(3 Suppl Operative):171-88.

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[A comparative analysis of the results of vertebroplasty and kyphoplasty in osteoporotic vertebral compression fractures.](#)

### Abstract

**BACKGROUND:** The most common complication of osteoporosis is vertebral fractures, which occur more frequently than all other fractures (hip, wrist, and ankle).

**OBJECTIVE:** To prospectively analyze vertebroplasty compared with kyphoplasty for the treatment of osteoporotic vertebral compression fractures using improvement in pain, functional capacity, and quality of life as outcome measures.

**METHODS:** The study population included 28 patients in the vertebroplasty group and 24 patients in the kyphoplasty group. The mean follow-up period was 42.2 weeks and 42.3 weeks in the vertebroplasty and kyphoplasty groups, respectively. Outcomes were measured pre- and postoperatively using the visual analogue scale, the Oswestry Disability Index, the EuroQol-5D questionnaire, and the Short-Form 36 Health Survey.

**RESULTS:** In the vertebroplasty group, visual analogue scale scores improved from a mean of 8.0 cm to 5.5 cm at last follow-up ( $P = .001$ ). Preoperatively, the Oswestry Disability Index was 57.6, which improved to 38.4 ( $P = .006$ ). The EuroQol-5D score preoperatively was 0.157 and improved to 0.504 ( $P = .001$ ). The Short-Form 36 Health Survey showed greatest improvement in the areas of physical health, role physical, body pain, and vitality. In the kyphoplasty group, visual analogue scale scores improved from a mean of 7.5 cm preoperatively to 2.5 cm postoperatively ( $P = .000001$ ). The mean Oswestry Disability Index preoperatively was 50.7 and improved to 28.8 ( $P = .002$ ). The EuroQol-5D score improved from a mean of 0.234 preoperatively to 0.749 ( $P = .00004$ ). The Short-Form 36 Health Survey showed greatest improvement in the areas of physical health, physical functioning, role physical, body pain, and social functioning.

**CONCLUSION:** Both vertebroplasty and kyphoplasty are effective at improving pain, functional disability, and quality of life; however, kyphoplasty provides better results, which are maintained over long-term follow-up.

PMID: 20679931 [PubMed - in process]

## **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:

December 9-10, 2010

Best Practices in Systems -Based Interventions to Reduce the Burden of Fractures

Washington, DC, USA

website: <http://www.cme.uab.edu/bonehealth/Default.aspx>

email: [pclark@uab.edu](mailto:pclark@uab.edu)

December 11 - 15, 2010

ASCB 50th Annual Meeting

Philadelphia, Pennsylvania, USA

Website: [www.ascb.org](http://www.ascb.org)

Email: [ascbinfo@ascb.org](mailto:ascbinfo@ascb.org)

January 20 - 23, 2011

World Congress On Controversies In Bone & Joint Diseases (C-BONE)

Barcelona, Spain

Website: <http://www.comtecmed.com/cbone/2011/>

Email: [ruthi@comtecmed.com](mailto:ruthi@comtecmed.com)

April 27 - 30, 2011

4th New York Skeletal Biology and Medicine Conference

New York, New York, USA

Website:

<http://www.mssm.edu/education/continuing-medical-education/courses/4th-new-york-skeletal-biology-and-medicine-conference>

Email: [mone.zaidi@mountsinai.org](mailto:mone.zaidi@mountsinai.org)

May 7 - 11, 2011

3rd Joint Meeting of the European Calcified Tissue Society and the International Bone and Mineral Society

Athens, Greece

Website: <http://www.ects-ibms2011.org/>

Email: [admin@ectsoc.org](mailto:admin@ectsoc.org)

May 18-21, 2011

NOF 9th International Symposium on Osteoporosis (ISO9)

Las Vegas, NV

Website: <http://www.nof-iso.org/>

Email: [webmaster@nof.org](mailto:webmaster@nof.org)

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