

## Effect of Whole Body Vibration on Bone and Fall Related Parameters

**This study has been completed.**

<b>Sponsors and Collaborators:</b>	<b>University of Erlangen-Nürnberg</b> Institute of Biometrie and Medical Statistics Netzwerk-Knochengesundheit Siemens Betriebs-Krankenkasse
<b>Information provided by:</b>	University of Erlangen-Nürnberg
<b>ClinicalTrials.gov Identifier:</b>	NCT00292916

### ► Purpose

The effect of whole body vibration (WBV) on bone strength and fall frequency in older adults is still vague. Although there is some evidence that WBV may impact Bone Mineral Density in very frail elderly, there is a lack of data concerning the effect of WBV in community-living elderly woman. We hypothesize that WBV significantly affects bone parameters as assessed by DXA, QCT, US and bone markers with parallel positive changes of fall related risk factors (power, strength, balance, and reaction time). We further hypothesize that the effects of WBV were superior to conventional resistance exercise.

<u>Condition</u>	<u>Intervention</u>	<u>Phase</u>
Atrophy	Behavioral: whole body vibration Behavioral: resistance exercise Behavioral: "wellness"	Phase III

[MedlinePlus](#) related topics: [Exercise and Physical Fitness](#) [Minerals](#)

## U.S. FDA Resources

Study Type: Interventional

Study Design: Prevention, Randomized, Single Blind, Active Control, Parallel Assignment, Safety/Efficacy Study

Official Title: Effect of Whole Body Vibration on Bone and Fall Related Parameters - the Erlangen Longitudinal Vibration Study (ELVIS)

### **Further study details as provided by University of Erlangen-Nürnberg:**

#### Primary Outcome Measures:

- BMD after 6, 12 and 18 months
- strength
- power

#### Secondary Outcome Measures:

- balance
- bone markers

Estimated Enrollment: 150  
Study Start Date: January 2006  
Estimated Study Completion Date: July 2007

## **Eligibility**

Ages Eligible for Study: 65 Years and older

Genders Eligible for Study: Female

Accepts Healthy Volunteers: Yes

### **Criteria**

#### Inclusion Criteria:

- community living elderly females  $\geq 65$  years
- live expectation  $> 2$  years

Exclusion Criteria:

- secondary osteoporosis
- CVD-events including stroke
- participation in other studies
- medication and illness affecting bone metabolism within the last 2 years
- medication with impact on falls
- low physical performance (<50 Watt during ergometry)
- excessive alcohol-intake

▶ **Contacts and Locations**

Please refer to this study by its ClinicalTrials.gov identifier:  
NCT00292916

**Locations**

**Germany**

Institute of Medical Physics  
Erlangen, Germany, 91052

**Sponsors and Collaborators**

**University of Erlangen-Nürnberg**

Institute of Biometrie and Medical Statistics

Netzwerk-Knochengesundheit

Siemens Betriebs-Krankenkasse

**Investigators**

Study Chair: Willi A Kalender, PhD University of Erlangen-Nürnberg

▶ **More Information**

Publications:

[Kemmler W, Engelke K, Baumann H, Beeskow C, von Stengel S, Weineck J,](#)

[Kalender WA. Bone status in elite male runners. Eur J Appl Physiol. 2006 Jan;96\(1\):78-85. Epub 2005 Oct 26.](#)

[Engelke K, Kemmler W, Lauber D, Beeskow C, Pintag R, Kalender WA. Exercise maintains bone density at spine and hip EFOPS: a 3-year longitudinal study in early postmenopausal women. Osteoporos Int. 2006 Jan;17\(1\):133-42. Epub 2005 Aug 12.](#)

[Stengel SV, Kemmler W, Pintag R, Beeskow C, Weineck J, Lauber D, Kalender WA, Engelke K. Power training is more effective than strength training for maintaining bone mineral density in postmenopausal women. J Appl Physiol. 2005 Jul;99\(1\):181-8. Epub 2005 Mar 3.](#)

[Kemmler W, Weineck J, Kalender WA, Engelke K. The effect of habitual physical activity, non-athletic exercise, muscle strength, and VO2max on bone mineral density is rather low in early postmenopausal osteopenic women. J Musculoskelet Neuronal Interact. 2004 Sep;4\(3\):325-34.](#)

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Health Authority: Germany: Bayerisches Staatsministerium für  
Wissenschaft, Forschung und Kunst

Keywords provided by University of Erlangen-Nürnberg:  
whole body vibration                      Bone Mineral Density  
exercise                                      falls  
elderly woman                              higher age

Study placed in the following topic categories:  
Pathological Conditions, Anatomical  
Atrophy

ClinicalTrials.gov processed this record on December 11, 2008

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