



Introduction

Clinical Characteristics of Spinal Osteoporosis

- Height ↓ Kyphosis ↑ Biscostal friction ↑
- Quality of life ↓ (Pain ↑ Well-being ↓ Limitations in daily living ↑)
- Lung function ↓
- Trunk muscle strength ↓
- Risk for falls ↑ and fall-related fractures ↑

➤ Spinal orthoses should relieve this burden of disease!

Materials and Methods

Study Design:

110 Participants are randomized into three groups:

Baseline _____ Month 12

Group A (Spinalmed) Intervention Observation

Group B (Spinalmed) Observation Intervention

Group C (Spinalmed active) Intervention Intervention

Primary study end points:

- Maximal isometric trunk muscle strength (Dignose-system)

Secondary study end points:

- Body sway (Lund et al. 1992)
- Lung function (vital capacity)
- Pain Score (Millner)
- Angle of kyphosis (Stroem-Phantomography)
- Limitations in daily living (Living-Weakness et al. 1997)

Results (Base-Line Characteristics)

Groups	A (n=31)	B (n=31)	C (n=48)
Age (years)	72.9 ± 7.1	72.5 ± 6.7	68.7 ± 10.9
Height (mm)	1567 ± 69	1563 ± 71	1594 ± 57
Weight (kg)	64.1 ± 9.4	63.8 ± 9.1	67.2 ± 12.1
Loss of height (mm)	37 ± 59	39 ± 38	70 ± 36
Nic. vertebral %	2.0 ± 2.7	2.1 ± 2.8	1.5 ± 2.4
Angle of Kyphosis (°)	74.2 ± 9.8	70.8 ± 8.9	66.8 ± 11.9
Back ext. strength (N)	264 ± 131	262 ± 119	273 ± 112
Abd. flex. strength (N)	165 ± 71	155 ± 64	157 ± 72
Body Sway (mm)	84 ± 70	78 ± 37	80 ± 31
Vital capacity (%)	83 ± 21	93 ± 16	96 ± 22
Pain (Score)	4.0 ± 1.1	3.9 ± 1.0	3.6 ± 1.1
LDL (Score)	4.8 ± 1.9	4.1 ± 1.7	4.0 ± 1.0

The Orthoses *Spinalmed* and *Spinalmed active*

Improve Posture, Trunk Muscle Strength,
and Quality of Life in Postmenopausal

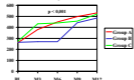
Women with Spinal Osteoporosis:

A Controlled, Randomized, and Prospective
Clinical Trial.

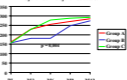
Michael Pfeifer, Lisa Kohlwey,
Bettina Begerow and Helmut W. Minne.

MEDWISS BAD PYRMONT
and Clinic „DER FUERSTENHOF“,
Bad Pyrmont, Germany

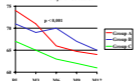
Back Extensor Strength (N) after Intervention with *Spinalmed*
and *Spinalmed active*



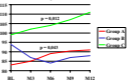
Abdominal Flexor Strength (N) after Intervention with *Spinalmed*
and *Spinalmed active*.



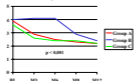
Angle of Kyphosis (°) after Intervention with *Spinalmed*
and *Spinalmed active*.



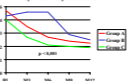
Vital Capacity (%) after Intervention with *Spinalmed*
and *Spinalmed active*



Pain (Score) after Intervention with *Spinalmed*
and *Spinalmed active*.



Limitations of Daily Living (Score) after Intervention with *Spinalmed*
and *Spinalmed active*.



Spinal Orthosis

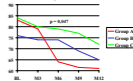
„Spinalmed“



Spinal Orthosis

„Spinalmed active“

Body Sway (mm) after Intervention with *Spinalmed*
and *Spinalmed active*



Conclusions

In women with osteoporotic vertebral fractures, an
intervention with *Spinalmed* and *Spinalmed active*
resulted in:

- Improvement in Trunk Muscle Strength and Balance
- Improvement in Posture (Height ↓ Kyphosis ↓)
- Improvement in Quality of Life