



medi

## Spinomed® – The Original

Spinomed back braces for guideline-compliant therapy following kyphoplasty and vertebroplasty

medi. I feel better.

# Safeguard successful treatment

## Achieve optimum treatment results with the Spinomed back brace.

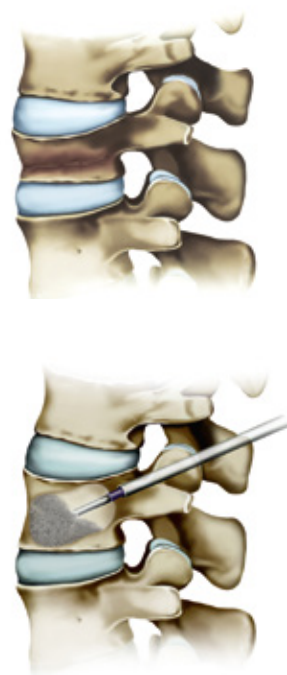
Cement augmentation is widely used for treating osteoporotic vertebral body fractures. In many cases, it stabilises the fracture and relieves pain.

However, vertebroplasty and kyphoplasty alone are not sufficient for a correct treatment of such fractures. They merely treat the symptoms of osteoporosis, not the underlying disease.

What's more: due to the vertebral body fracture and the subsequent kyphoplasty or vertebroplasty, the forces acting on the vertebral column change and this affects the patient's entire posture. Therefore, the focus should always be on guideline-compliant postoperative care.

### Spinomed back braces are used whenever all surgical options are limited:

- Spinomed acts like a piece of "gym apparatus" to strengthen the abdominal and back muscles.
- Spinomed reduces your patients' tendency to sway and therefore helps prevent further falls and fractures.
- Spinomed gives your patients a sense of security and sharpens proprioception.



## How do Spinomed back braces work?

### The principle of biofeedback.

Together with the back splint, the elastic stretch materials in Spinomed exert tension forces on the pelvic and shoulder areas. Every time a patient droops into a poor posture, Spinomed exerts gentle pressure via the straps to remind the wearer of the correct posture.

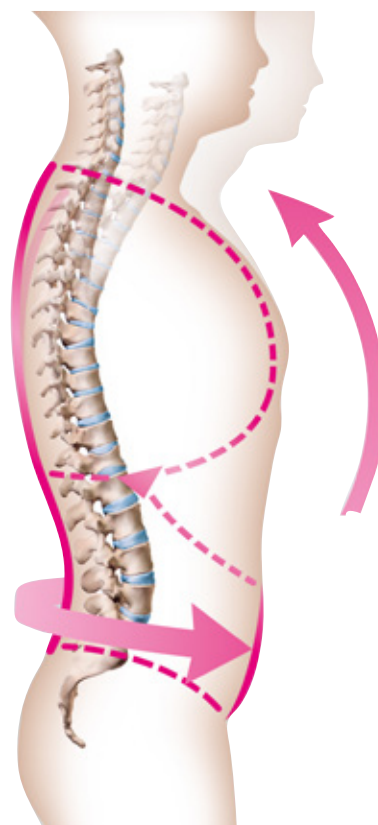
As a reflex response to this, patients tense their trunk muscles to straighten their upper body again. This process is called biofeedback.



The aluminium splint is cold mouldable and is adjusted individually to the patient's spinal column.



The preformed shoulder straps make it easier for your patients to put the orthosis on. The strap system can be adjusted individually to suit the patients.



# Guideline-compliant care

## The Spinomed back brace for a demonstrably better quality of life.

Besides pharmacotherapy, the current DVO note for guidance on the treatment of osteoporosis specifies „back braces that straighten the spine“ for osteoporotic vertebral body fractures.

The only medical devices that demonstrably fulfil the DVO criteria are the Spinomed orthoses.<sup>1,2</sup>



Dr. Michael Pfeifer



Prof. Helmut W. Minne

### Studies

<sup>1</sup> **Pfeifer M, Kohlwey L, Begerow B, Minne HW.** Effects of two newly developed spinal orthoses on trunk muscle strength, posture, and quality-of-life in women with postmenopausal osteoporosis: a randomized trial. *Am J Phys Med Rehabil* 2011;90(10):805-815.

<sup>2</sup> **Pfeifer M, Begerow B, Minne HW.** Effects of a new spinal orthosis on posture, trunk strength, and quality of life in women with postmenopausal osteoporosis: a randomized trial. *Am J Phys Med Rehabil* 2004;83(3):177-186.

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Spine

**ORIGINAL RESEARCH ARTICLE**

### Effects of Two Newly Developed Spinal Orthoses on Trunk Muscle Strength, Posture, and Quality-of-Life in Women with Postmenopausal Osteoporosis: A Randomized Trial

**ABSTRACT**

**Pfeifer M, Kohlwey L, Begerow B, Minne HW:** Effects of two newly developed spinal orthoses on trunk muscle strength, posture, and quality-of-life in women with postmenopausal osteoporosis: a randomized trial. *Am J Phys Med Rehabil* 2011;90:805-815.

**Objectives:** We conducted a prospective randomized study to evaluate the efficacy of two newly developed spinal orthoses in patients with vertebral fractures.

**Design:** We conducted a prospective, randomized, cross-over study to evaluate the efficacy of two newly developed spinal orthoses in patients with osteoporotic vertebral fractures. Measurements include trunk muscle strength, angle of kyphosis, body height, body sway, and parameters of quality-of-life such as pain, well-being, and limitations of daily living.

**Results:** Wearing the orthosis Spinomed during a 6-mo period (results of Spinomed active are given in parentheses) was associated with a 72% (64%) increase in back extensor strength ( $P < 0.01$ ), a 44% (56%) increase in abdominal flexor strength ( $P < 0.01$ ), an 11% (11%) decrease in the angle of kyphosis ( $P < 0.01$ ), a 23% (20%) decrease in body sway ( $P = 0.03$  and  $P = 0.02$ ), a 19% (18%) increase in vital capacity ( $P < 0.01$  and  $P = 0.03$ ), a 41% (47%) decrease in average pain ( $P < 0.01$ ), an 18% (18%) increase in well-being ( $P < 0.01$ ), and a 49% (54%) decrease in limitations of daily living ( $P < 0.01$ ), respectively. The overall tolerability of the orthoses was good; no adverse effects were reported and the dropout rate with 7% was rather low.

**Conclusions:** The use of an orthosis increases trunk muscle strength and therefore improves posture in patients with vertebral fractures caused by osteoporosis. In addition, a better quality-of-life is achieved by pain reduction, decreased limitations of daily living, and improved well-being. Thereby, the use of an orthosis may represent an efficacious nonpharmacologic treatment option for spinal osteoporosis.

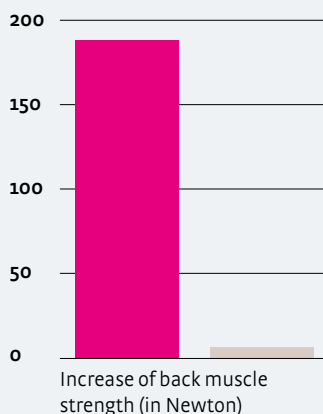
**Key Words:** Osteoporosis, Vertebral Fractures, Spinal Orthosis, Trunk Muscle Strength, Quality-of-Life, Body Sway

Spinal Orthoses and Osteoporosis **805**

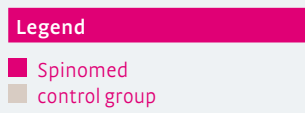
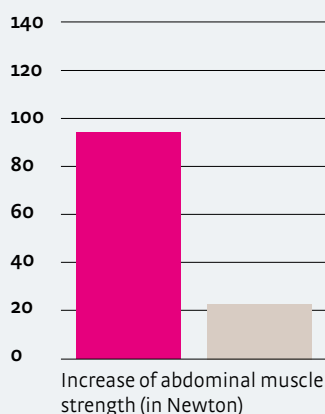
# Strengthen the back and abdominal muscles

Spinomed acts like a piece of gym apparatus. Every time the patient slumps into a faulty posture, the Spinomed reminds him of the correct posture by exerting gentle pressure. This process is called biofeedback. The back and abdominal muscles are strengthened as a positive side effect.

Back muscle strength



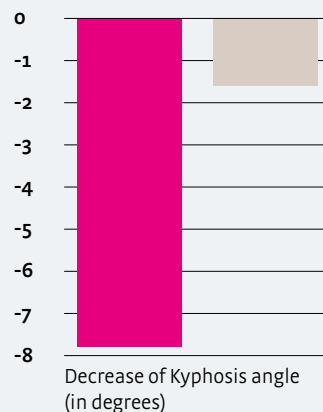
Abdominal muscle strength



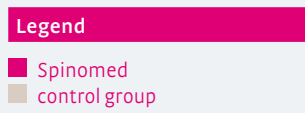
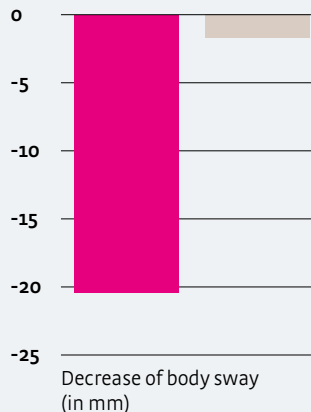
# Decrease in body sway and the kyphotic angle

Spinomed reduces the tendency to sway and therefore the risk of falling. At the same time, it sharpens proprioception. The principle of biofeedback leads to a continuous and natural straightening of the trunk. The curvature of the spine (kyphosis) is demonstrably flattened. This gives patients a sense of security during their day-to-day activities. As an adjunct to pharmacotherapy, Spinomed back orthoses help reduce the risk of additional fractures.

Kyphotic angle



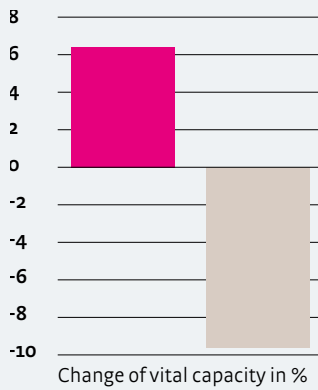
Body sway



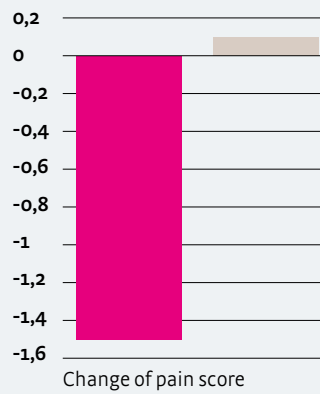
# Increased vital capacity

Spinomed back braces reduce the kyphotic angle and therefore increase vital capacity. Thanks to the more erect trunk, your patient can now breathe more deeply and has less pain. The patient can feel the body's improved performance. Furthermore, the orthosis acts quickly and effectively. Pharmacotherapy often requires a long time until the onset of the desired effect.

Vital capacity



Pain score



**Legend**

- Spinomed
- control group



## Study design, outcome and conclusions

**The study investigated the efficacy of the Spinomed back brace in patients with osteoporotic vertebral body fractures.**

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The parameters measured included trunk muscle power, the kyphotic angle, height, body sway and quality of life.

The parameters for quality of life were pain, well-being and limitations in everyday living using standard biometric tools.

### Outcome

The results of the study show positive effects in those patients who were treated with the Spinomed back brace.

- Wearing the orthosis is associated with a 72% increase in back muscle strength.
- The abdominal muscles are also clearly strengthened: by 58%.
- The patients profit from a more erect posture and a reduced tendency to sway (-25%).
- At the same time, the danger of new fractures is reduced; As the tendency to sway decreases, so does the risk of falling.
- Furthermore, the quality of life may improve. The users reported over 38% less pain.

### Conclusions on back braces for patients with osteoporotic vertebral body fractures:

The use of back braces strengthens the trunk musculature and improves posture. They also relieve pain and reduce limitations in everyday living. The braces enhance well-being and globally improve the quality of life. Therefore, the use of a Spinomed orthosis can be an effective non-drug option for the treatment of spinal osteoporosis.

### High compliance

**97% of all the patients did not want to return the Spinomed after 6 months.**

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## Successful therapy with the Spinomed back brace

Each of your patients is an individual and deserves care to match his needs. With the Spinomed back brace, medi offers you a medical device for use after kyphoplasty – completely without side effects.

### Your benefits

- you secure a successful therapy outcome.
- it has been proved that Spinomed orthoses increase muscle power, reduce the tendency to sway and lessen the danger of further fractures.
- prescriptions for Spinomed back orthoses are budget-neutral.

### Indications

- osteoporotic bone collapse in the thoracic and lumbar spine
- juvenile Scheuermann's disease
- hyperkyphosis with chronic back pain

# Spinomed®: The Original Totally unique

## The light slip-in variant:

- suitable for both men and women
- ergonomically pre-formed shoulder straps for easy donning
- optimum fit
- active breathing materials
- comfortable to wear and gives an added sense of security

## Description

- back orthosis for vertebral extension in osteoporosis and strengthening of the core musculature

## Indications

- osteoporotic bone collapse in the thoracic and lumbar spine
- juvenile Scheuermann's disease
- hyperkyphosis with chronic back pain

## Product benefits



### Simple strap positioning

Ergonomically preformed shoulder straps ease donning and doffing. The preformed rods can be taken out if necessary.



### Active breathing and modern

The material is soft and comfortable to wear. Integrated openings increase the air circulation.



The new strap loops help prevent twisting of the straps.



The aluminium back support is mouldable and can be easily adapted to meet individual patient needs.





# Our support for you

Besides the broad product spectrum, take advantage of our comprehensive information material.

## Product information for you



Product information about Spinomed and Spinomed active  
Art. No. 90E33

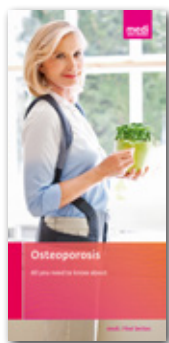


Product information Spinomed  
2-pager



Study Spinomed (2004)  
Art. No. 99E22

## Information for your patient consultations

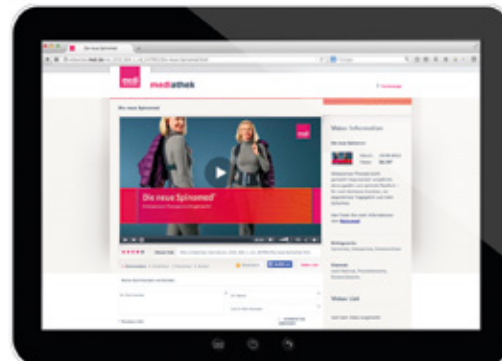


Osteoporosis guide for patients,  
DIN long  
Art. No. 90E31



Spinomed user information  
Art. No. 9E013

## Visit medi's media library



At [https://vimeo.com/medivideo/](https://vimeo.com/medivideo) you will find the Spinomed film as well as helpful tips and tricks on how to use them. Please have also a look at our physio therapy movies with Sara Meeks

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