

**ottobock.**

# Your back in focus

Poor posture and osteoporosis



# What is osteoporosis?

Osteoporosis is a disease of the bones in which bone mass decreases and bone structure is changed. This, along with changes in muscle strength and performance, lead to an increased risk of falls and fractures.

Primary osteoporosis:

- The age-related reduction of muscle mass is followed by bone loss

Secondary osteoporosis:

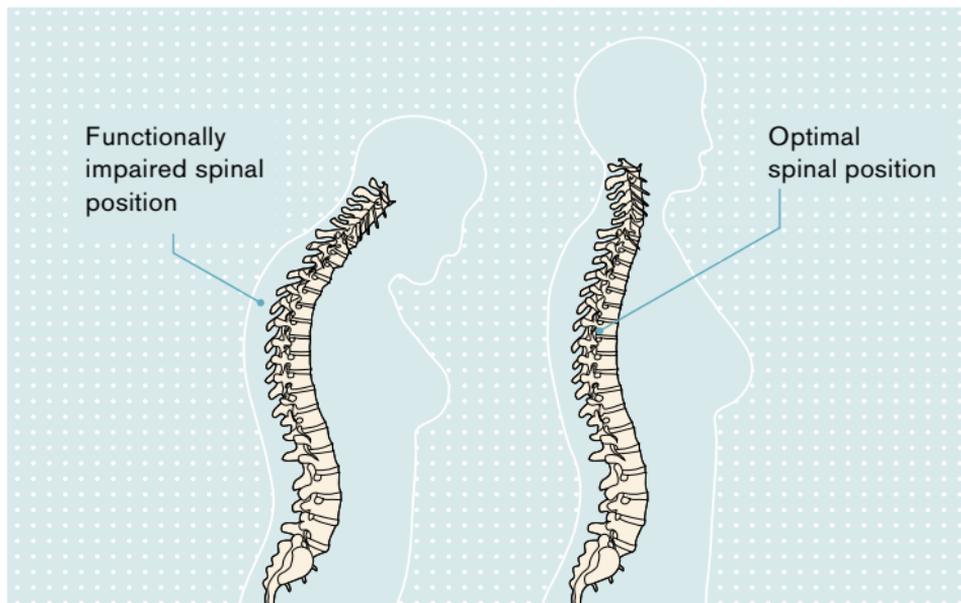
- Other diseases or medication trigger osteoporosis

## **Who is affected by osteoporosis?**

It is estimated that osteoporosis affects around 55% of all persons over the age of 50. Younger patients can, however, also be affected by this disease. 80% of all osteoporosis patients are women.

## **Causes**

- Sedentary lifestyle
- Advanced age
- Female gender
- Low body weight/slender figure
- Smoking/alcohol consumption
- Frequent or long-term intake of certain drugs (e.g. corticosteroids, thyroid medication)



## Symptoms

- Painful curvature of the spine
- Resultant reduced height
- Restricted mobility
- Osteoporosis-related fractures and their consequences with a considerably reduced quality of life

## Treatment options

- Measures to prevent fractures
- Psychosocial support
- Calcium and vitamin D
- If indicated: medication

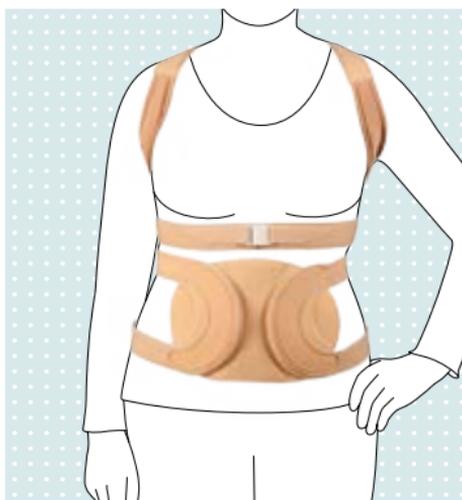
For osteoporosis-related stable vertebral body fractures:

- Medication
- If applicable, fitting of an orthosis to straighten the spine
- If conservative pain therapy alone is not sufficient:
  - Treatment of vertebral fractures
  - Treatment of vertebral body fractures

We are pleased to present here four supporting braces and a few exercises for these specific conditions. We hope these exercises help and that you get well soon!

# Use of braces

Braces used for osteoporosis and those used to improve posture function in similar ways. They straighten the upper body using a doubled 3-point principle, pull the shoulders back, and support the middle of the body by compressing the abdomen. The chest and abdomen are not restricted. The body's centre of gravity is shifted backwards, resulting in better posture and more stability when standing and walking.



## Dorso Osteo Care

Art. no. 50R20

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### **Soft material for straightening the upper back**

The compact design supports straightening of the upper back and helps preserve bone mass in the thoracic spine. The soft, breathable material provides safety and reduces the risk of falls.



## Smartspine Extension Brace

Art. no. 50R231

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### **Straightening and high stabilisation**

The pulley system allows high stabilisation with little force. The padded shoulder straps are comfortable and support an upright posture.



## Dorso Direxa Posture

Art. no. 50R59

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### **Relieves and promotes postural awareness**

The Dorso Direxa Posture promotes postural awareness and relieves the thoracic and lumbar spine. At the same time, the brace promotes muscle activity.

# Use of braces



## Dorso Carezza Posture

Art. no. 50R49

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### **Promotes postural awareness and relief**

The Dorso Carezza Posture relieves the thoracic spine. The close-fitting brace is inconspicuous under clothing, yet promotes postural awareness.



# Exercises you can do at home

## Stretching with brace

Your practitioner will prescribe a treatment plan to suit your posture problems. You can also strengthen your back by supplementing this treatment with the following exercises, which you can do at home. Make sure you speak to your practitioner before undertaking them.

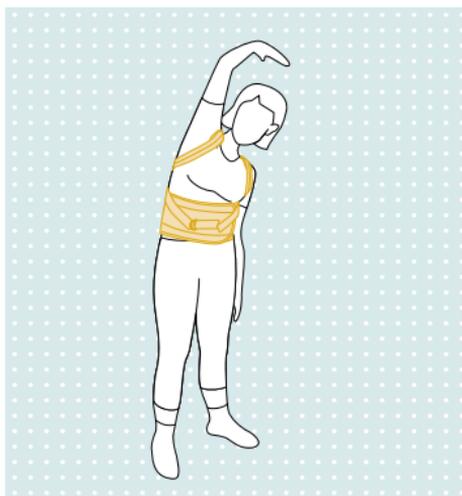
### **Why is stretching so important?**

Failure to regularly stretch the tendons, ligaments and muscles to their limit will result in muscle shortening and decreased joint mobility. To maintain the elasticity of stretched muscles and tendons, it is essential to do stretching exercises frequently.

### **Aim of the exercise**

To improve the flexibility of muscles, tendons and ligaments

Please respect your personal pain threshold for all exercises shown here.

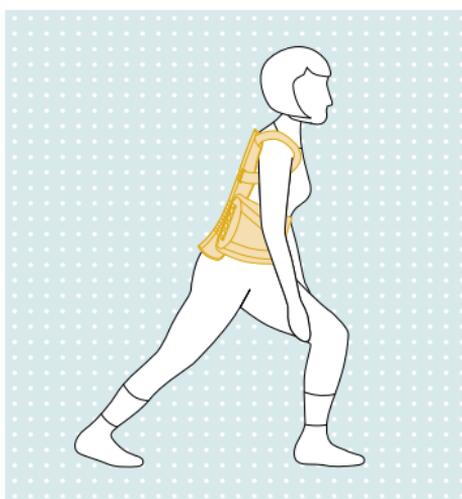


### **Exercise 1: Lateral torso stretch**

Position yourself with your back against a wall and your legs placed hip distance apart. Raise your right arm over your head. Let the left arm slide down along the outside of the left leg. Stay in the final position for about 8 seconds. Slowly return to the starting position. Repeat the exercise on the other side.

#### **Repetitions**

- 3 times on each side
- Rest for about 5 seconds between exercises.



### **Exercise 2: Forward lunge**

Take a large step forwards. Bend the front leg. Slowly shift your weight to the front leg. Keep your back leg straight. Hold this position for approx. 8 seconds. Then slowly return to the starting position.

#### **Repetitions**

- 3 times on each side
- Rest for about 5 seconds between exercises.

# Strengthening exercises with the brace

## Why is strength so important?

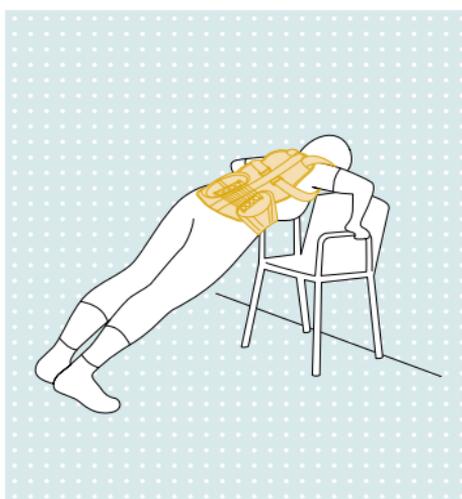
Peak muscle force is crucial in determining bone strength. To prevent falls, it's especially important that the muscles around the hips are strong.

## Rules for strength exercises

- Do the exercises at about  $\frac{2}{3}$  of your maximum strength.
- Do the exercises slowly:  
4 seconds up, 4 seconds down.
- Take breaks of 2 to 3 minutes to rest.
- Train the same muscle group only every other day.

## Aim of the exercise

Improving muscle strength



## Exercise 3: Press-up at chair height

Place a chair against a wall so that it cannot slip. Support yourself with your arms on the stable armrests. Stretch your legs out. Raise your heels so that only your toes are in contact with the floor. Slowly bend and then extend your arms. Your body should remain completely extended. The brace helps you keep your back straight.

## Repetitions

- 2 sets of 10 repetitions.
- Rest for about 1 minute between exercises.

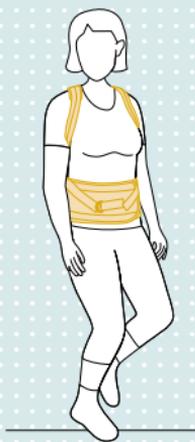
# Improvement of muscle performance with the brace

## Why is it important to improve muscle performance?

To improve your muscle performance (performance = strength × speed), it is essential to develop strength and speed. In the event of a stumble or fall, the human musculoskeletal system has to have a high degree of performance (strength, speed). Improved muscle performance is therefore crucial for preventing falls.

## Aim of the exercise

Improving muscle performance



## Exercise 4: Stationary forefoot jog

Perform this exercise on even ground. Jog on the spot. Only your forefeet should touch the ground.

Fast speed:

Approximately 2 double steps per second

### Repetitions

- 1st month: 2 times for approx. 15 seconds
- 2nd month: 2 times for approx. 30 seconds
- 3rd month: 2 times for approx. 45 seconds
- from the 4th month: 2 times for approx. 60 seconds
- Rest for about 1 minute between exercises.

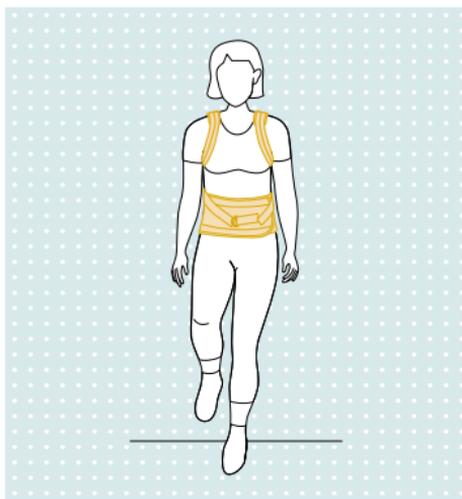
# Balance exercises with the brace

## **Why is it so important to improve your balance?**

Just a few days without physical activity can lead to a partial loss of coordination. If you cannot or can only inadequately control your posture, you are at risk of falling. Regular exercise is recommended to maintain good control of your posture. For exercises to improve balance: the more you do them, the better.

## **Aim of the exercise**

Improving your balance and coordination



## **Exercise 5: Standing on one forefoot**

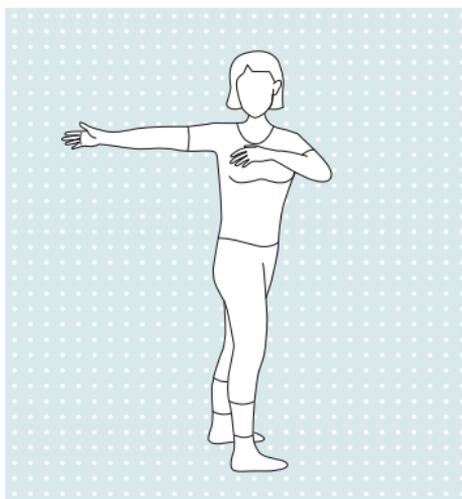
Position yourself near a stable support. Stand on one leg. Slowly raise the heel of your supporting leg until you are standing on the forefoot. Remain in this position for about 4 to 10 seconds. You may lightly support yourself with your finger tips for safety.

## **Repetitions**

- 3 times per leg

# Exercises without your brace

Now take the brace off.

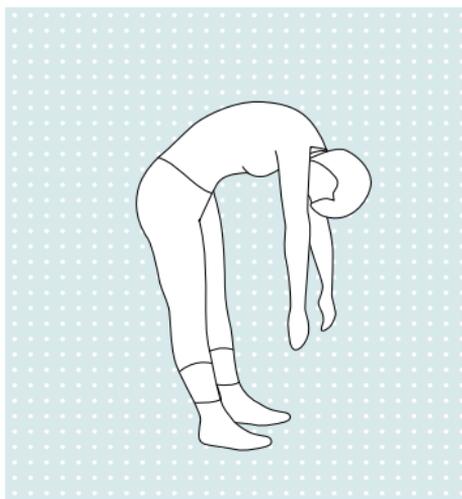


## Exercise 6: Torso twist

Stand up straight. Place your feet shoulder width apart. Extend your right arm to the side. Place your left arm on your chest. Slowly turn your torso to the right; stop before stretching becomes painful. Keep your arm in a horizontal position at shoulder height. Hold this position for about 8 seconds. Slowly turn back to the starting position.

### Repetitions

- 3 times on each side
- Rest for about 5 seconds between exercises.



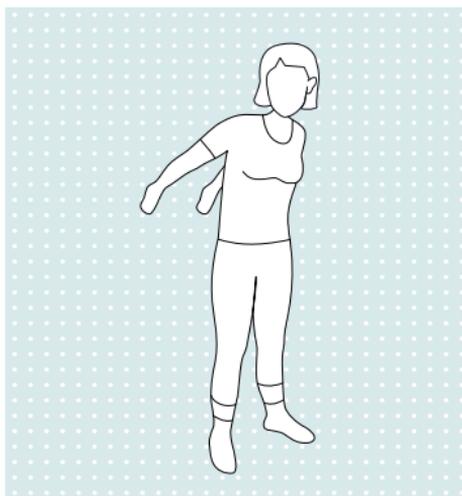
## Exercise 7: Forward bend

Stand up straight. Place your feet hip width apart. Your knees should be straight. Slowly bend your body forward. Let your head, torso and arms slide down slowly. In the final position, slowly breathe in and out deeply. Then slowly straighten up your body by “unrolling” it vertebra by vertebra.

### Repetitions

- 3 times
- Rest for 10 seconds between exercises.

► **Important: stop the exercise immediately if you feel dizzy.**

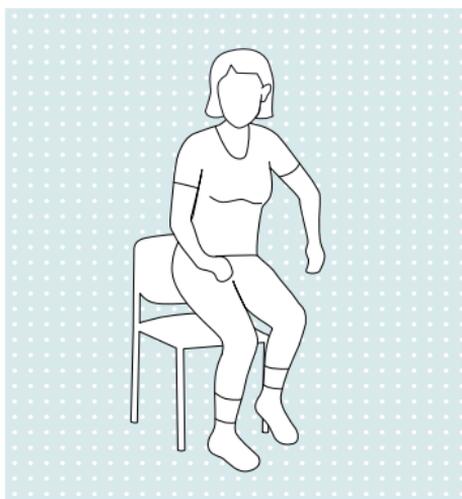


### **Exercise 8: Chest and shoulder muscle stretch**

Stand up straight. Place your feet shoulder width apart. Simultaneously extend both arms behind you. The palms of your hands should be extended and face backwards. Now move your arms upward; stop before you feel pain in the chest and shoulder muscles. Make sure your head remains straight. Hold this position for about 8 seconds. Slowly return the arms to the starting position.

#### **Repetitions**

- 3 times
- Rest for 5 seconds between exercises.

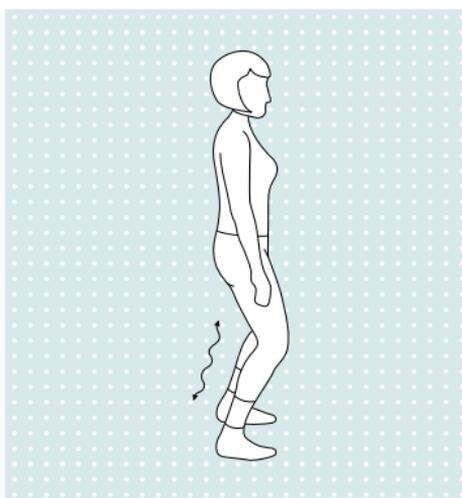


### **Exercise 9: Standing up from a sitting position using only one leg**

Sit on a chair. Now stand up using only one leg, the other leg should not touch the floor. Slowly sit down again.

#### **Repetitions**

- Alternate 2 sets of 5 repetitions per leg.
- Rest for about 5 seconds between exercises.

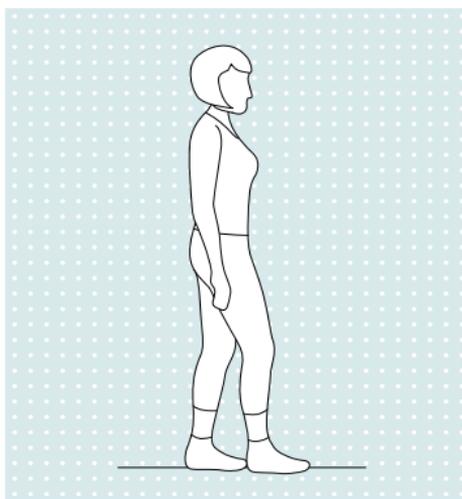


### **Exercise 10: Return of spring**

Stand up straight. Place your feet shoulder width apart. Make sure that your weight is spread evenly over your feet. Bend your knees loosely and evenly. Then straighten your legs again. During this exercise, you will find yourself in an even rocking motion.

#### **Repetitions**

- 164 times according to ancient Chinese instructions
- Do this exercise without taking a break.



### **Exercise 11: Tandem gait forwards and backwards**

Perform this exercise close to a wall or table. Walk in a straight line. Place one foot in front of the other with the heel directly touching the toes of the rear foot. If necessary, lightly support yourself with your finger tips on a wall or table.

#### **Repetitions**

- 4 sets of 10 steps forward and back
- Rest for about 5 seconds between exercises.

**Please do not hesitate to contact us if you have any further questions or you would like more information.**