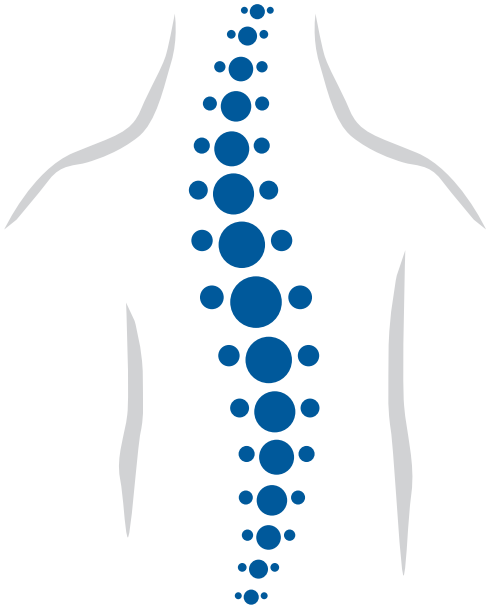
ZDRAVLJE+



CORRECT POSTURE AND MOVEMENT HABITS

with the aim of preventing back pain

INA

ANGELIKA BRNADA,
DIRECTOR OF THE SD&HSE

In collaboration with Assist. Prof. Josipa Nakić, PhD, from the University of Zagreb, Faculty of Kinesiology, as a part of the ZDRAVLJE+ (HEALTH+) project, we have launched the "MOVEMENTS THAT MAKE CHANGES" campaign. Our intention is to inform our employees on the correct performance of movements and correct movement in general, and to create the habit of their everyday application, both at the workplace and in everyday life.

For this campaign, we have selected workplaces where employees work on computers, manually handle different loads or use personal or freight vehicles. An overview of correct and incorrect movements in general has been presented in a collection of five brochures that are the basis for the practical part of trainings for employees and occupational safety specialists under the mentorship of Assist. Prof. Josipa Nakić, PhD. The aforementioned training will be used as a model for further informing the employees by our occupational health and safety experts.

Developing the awareness and competence of INA Group employees for correct performance of movements and correct movement in general, in addition to contributing to health benefits and working capacity, as well as increasing the employee satisfaction at the workplace, is also aimed at reducing the number of work-related injuries, the frequency and duration of sick leave and employee fluctuations.

We invite all INA Group employees to actively engage in this campaign and thereby personally contribute to the creation of **"Healthy Workplaces for All Ages".**

ASSIST. PROF. JOSIPA NAKIĆ, PHD

Spine problems and back pain have become a global problem today. By inertia, the culprit for our pain are most often activities such as long-term sitting or excessive physical work. However, the real culprit for such health problems is not the activity itself, but the manner of performing certain movements, as well as posture during a certain activity.

Movement mechanics have the most significant effect on spinal health. Incorrect movement mechanics during our performance of everyday activities significantly contribute to the accumulation of mechanical damages, and consequently the onset of pain.

The natural aging process combined with incorrect movement mechanics are elements that strongly affect the progression of mechanical damage to the spine. Natural aging mechanisms can hardly be affected. However, we can always create the habit of personal correction and, with the everyday application of correct movement mechanics, positively affect the health of our spine.

This campaign aims to emphasize the importance of avoiding the basic mechanisms of the occurrence of injuries and the importance of the application of correct movement mechanics, with the aim of preserving the health of the spine both in the workplace and in everyday life.

1.

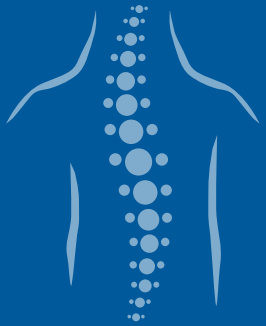
INTRODUCTION

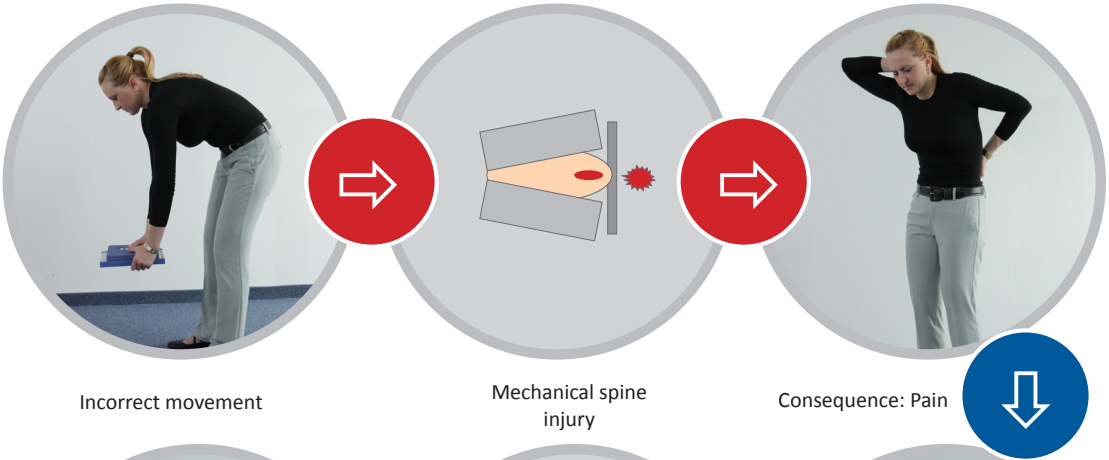
The media inform us daily that painful conditions of the spine have become an everyday problem of today's world, and that all we need to treat them is their miraculous cream, magnetic strap or the latest mattress. All of these may help us to partly remedy the consequences, but will certainly not help in eliminating the causes of pain.

The figure below shows that the cause of back pain are mechanical damages most often resulting from the accumulation of minor mechanical damages. In order to eliminate the cause of pain, we have to stop the mechanical damages to the spine, i.e. we have to begin to move correctly and perform all our daily, private and professional activities correctly.

The purpose of this manual is to become familiar with three basic mechanisms of mechanical damages occurrence and learn how to avoid them while performing everyday activities at home, on the way to work and at work itself. Only correct movements positively influence the prevention of mechanical damage and pain, the stopping of the progression of existing mechanical damage, the reduction of the likelihood of the restoration of old painful states, and the preservation and improvement of physical health in general.

Everyday correct movements will become our lifestyle.

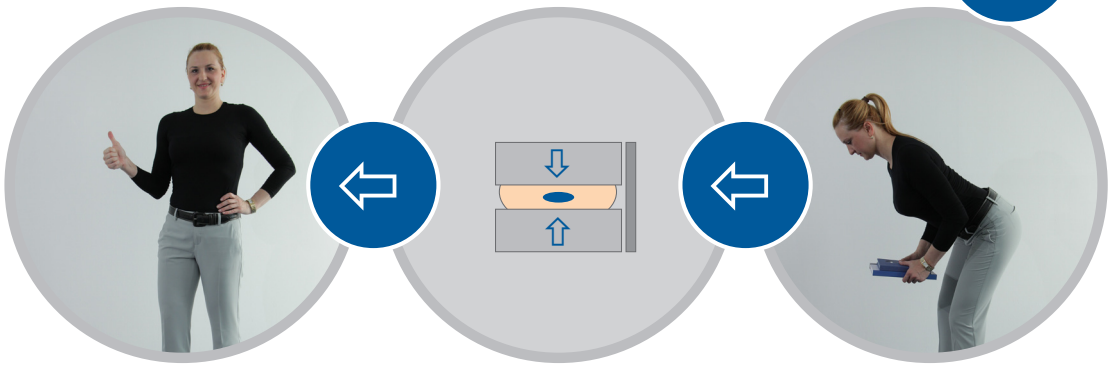




Incorrect movement

Mechanical spine injury

Consequence: Pain



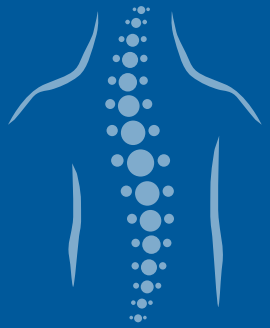
Objective: Health

No further damages – Regeneration of the spine

Correct movement

2.

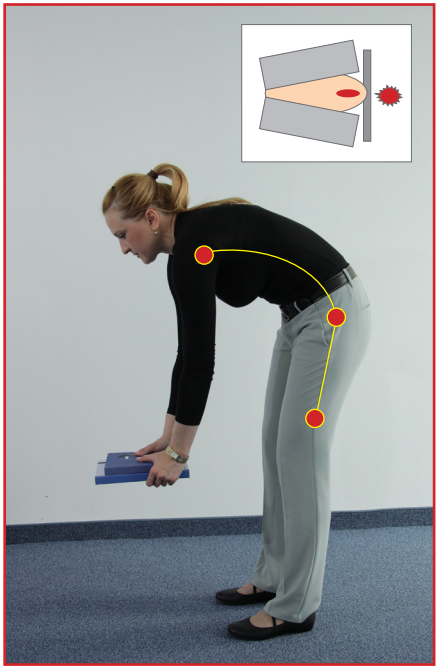
THE MECHANISMS OF THE OCCURENCE OF MECHANICAL DAMAGES TO THE SPINE - INCORRECT AND CORRECT MOVEMENT



There are three basic mechanisms of occurrence of mechanical damages to the spine that we must avoid.

2.1 BACK FLEXION AND HIPEREXTENSION

INCORRECT



INCORRECT

Flexion, i.e. bending of the back often occurs when lowering and lifting the upper part of the body (core).

Why do we do it?

We bend our back because it is “easier”, because the lever (back) is then shorter, i.e. the moment arm is smaller.

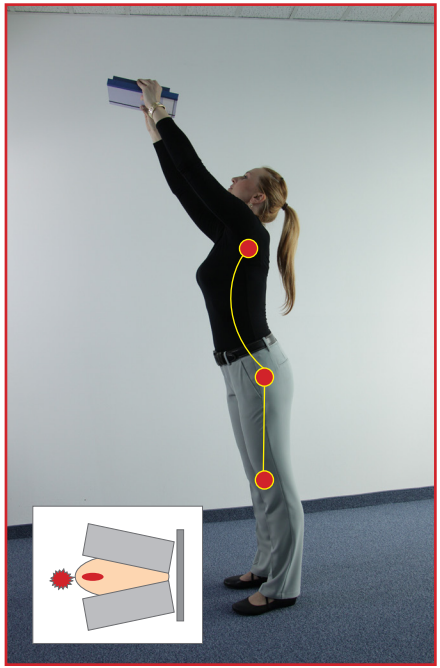
THIS IS THE MOST COMMON INJURY MECHANISM

CORRECT

The lowering of the core must be performed from the hip joints. The core has to be straight.

CORRECT

INCORRECT



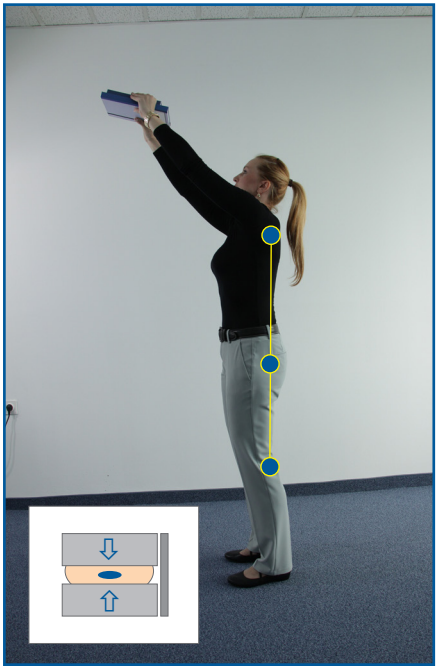
INCORRECT

Core hiperextension most frequently occurs when lifting your arms over your head. ¬Asymmetrical stress on intervertebral discs then occurs.

CORRECT

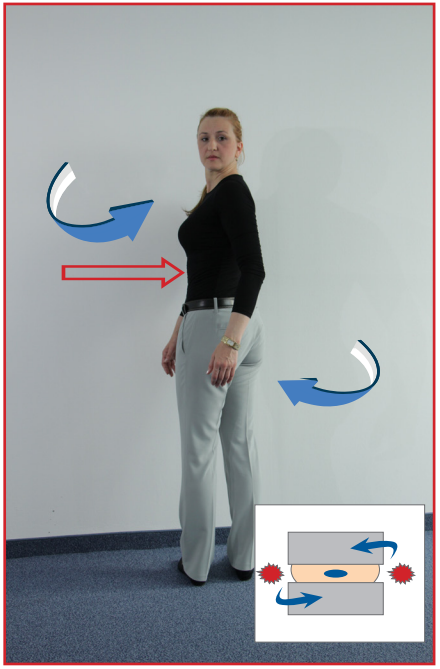
When lifting the arms above the head, the core must remain stable.

CORRECT



2.2 CORE ROTATION

INCORRECT



INCORRECT

Core rotation in the lower part of the spine (lumbar spine) is the second most common injury mechanism. In this injury mechanism, significant compression and reduction of intervertebral space occurs. Core rotation must not take place in the lower part of the spine.

CORRECT

Core rotation begins with the legs, and the core follows the legs. There is no rotation in the lower (lumbar) part of the spine, and the intervertebral space is preserved.

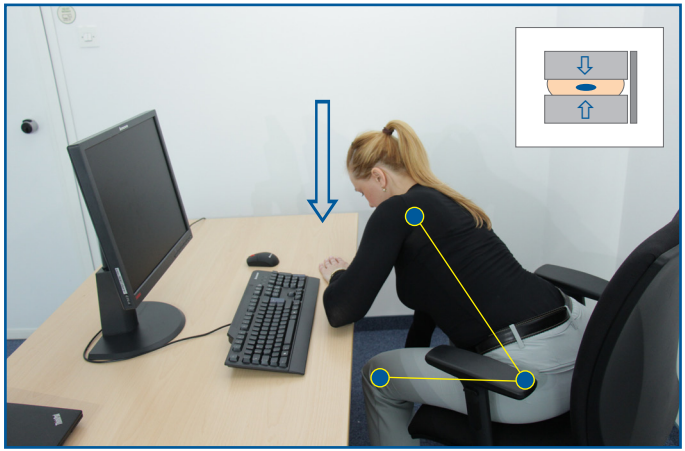
CORRECT

2.3 CORE ROTATION AND FLEXION

INCORRECT

Core rotation and flexion in the lower part of the spine is the third mechanism of the occurrence of mechanical damages to the spine. It is particularly dangerous and represents a combination of the first and second mechanism. It occurs when the core is lowered with the back in a bent position, with simultaneous rotation of the lower part of the back. Asymmetrical stress on intervertebral discs occurs, with simultaneous additional reduction of intervertebral space.

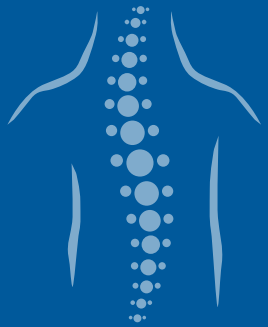
! **THE MOST DANGEROUS INJURY MECHANISM**



CORRECT

When we wish to retrieve something from the floor located on our left or right while sitting, the rotation begins with the legs, and the core must be straight when lowering. First, we turn, and then we lower the straight core. In this manner, we ensure equal intervertebral space.

3.

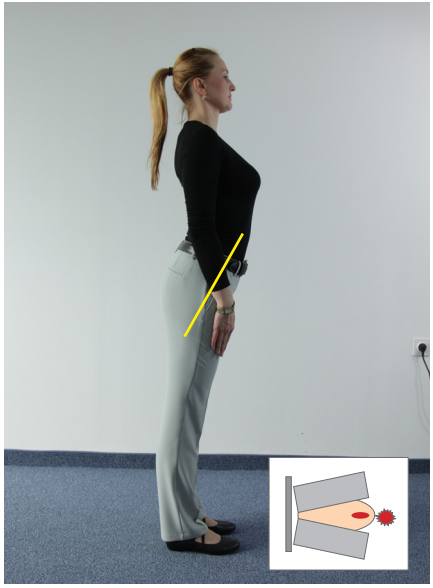


CORRECT WALKING IN ACCORDANCE WITH INDIVIDUAL POSTURAL CHARACTERISTICS OF THE PELVIS

In order to define the basic characteristics of correct walking, we first need to determine the natural position of our pelvis.

Ask someone to take your picture from the profile or just look at the profile of your body in the mirror. Try to evaluate whether your pelvis tilts to the front, back, or is in a neutral position.

3.1 Anterior pelvic tilt



Anterior pelvic tilt .

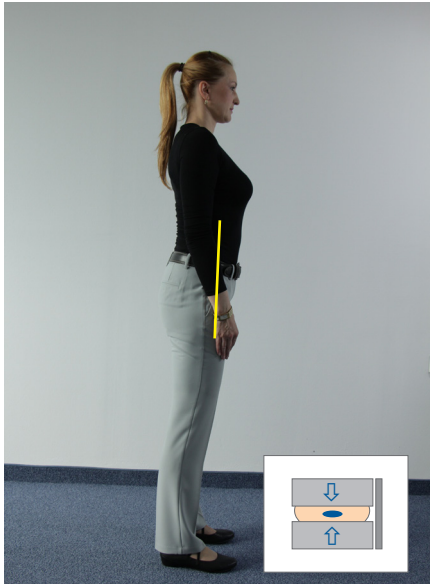
During normal walking, persons with anterior tilt have to perform “squeeze coin”, i.e. squeeze the gluteal muscles and “push” the hips forward, and shoulders backwards while walking.

Posterior pelvic tilt

Zdjelica je nagnuta prema natrag.

During walking, persons with posterior pelvic tilt have to continuously “push” the hips backwards, and the shoulders forward.

Neutral pelvic position



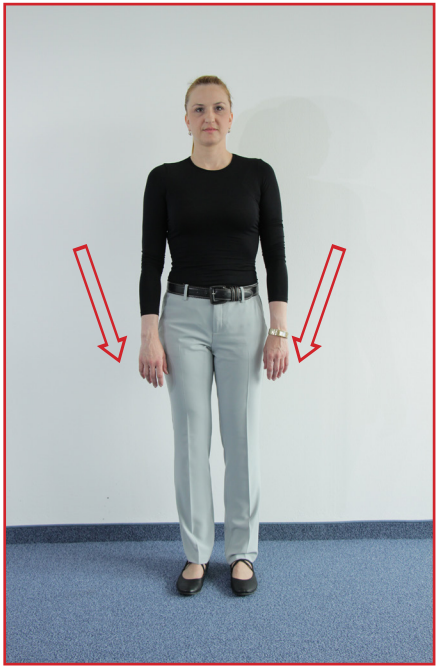
Zdjelica je u neutralnom položaju.

Persons with normal pelvic tilt do not have to do anything special during daily walking.

ADVICE: Regardless of the type of pelvis we have, we should strive to lengthen our body during daily walking.

3.2 INCORRECT AND CORRECT ARMS POSITION DURING WALKING

INCORRECT



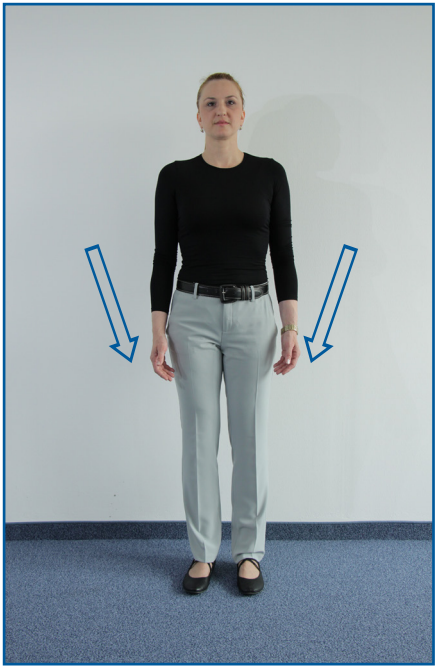
INCORRECT

When looking at a person standing in front of us or walking towards us, we must not see the back of his/her hands. They are a sign of inner shoulder rotation and displaced shoulder blades.

CORRECT

Holding palms next to the body when walking is the sign of correct shoulders position.

CORRECT



3.3 WALKING IN HIGH HEELS

INCORRECT

Walking in high heels is not just walking¬, but it is a skill of controlling the forces when moving the center of gravity of the body under the conditions of reduced supporting surface.

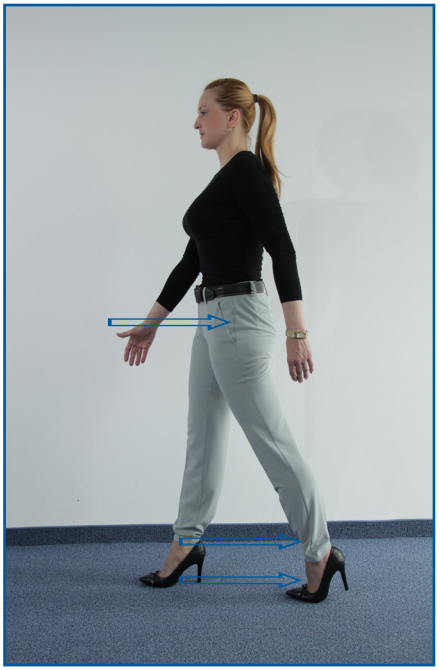
Walking in high heels requires increased movement joint ranges of:

- Hips
- Ankles, and
- Feet's.

In situations where we do not achieve the sufficient level of all or some of the above ranges of movement, an increase in the spine curvature will occur, and thus the progression of mechanical damage.

General recommendation for wearing high heels is that the heel not exceed 5 cm.

CORRECT



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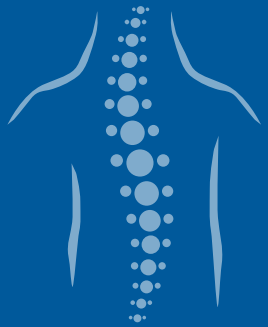


INCORRECT AND CORRECT PERFORMANCE OF EVERYDAY ACTIVITIES

When performing everyday activities, from getting up from bed to the moment we get to work, our posture and movement can be either correct or incorrect. These are positions and movements that no one ever taught us.

For example, we were taught how to properly wash hands, but no one has ever taught us how to position the body when washing hands.

This brochure shows correct and incorrect manners of performing some of the most frequent movements of activities that we all perform almost every day.

4.1 INCORRECT AND CORRECT POSTURE WHILE WASHING HANDS

INCORRECT

INCORRECT

When washing our hands, we make the mistake of bending our back.

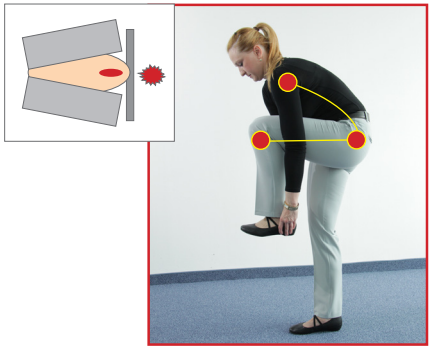
CORRECT

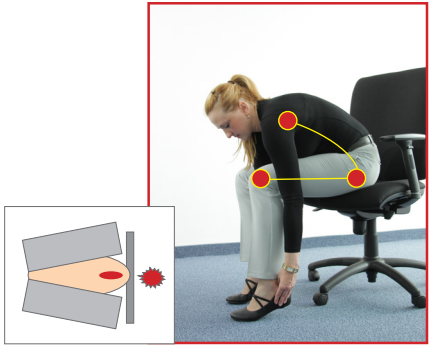
In order to avoid bending, the core lowering movement must be performed in hip joints. The back has to be straight.

CORRECT

4.2 INCORRECT AND CORRECT POSTURE WHILE PUTTING ON SHOES INCORRECT AND CORRECT

INCORRECT





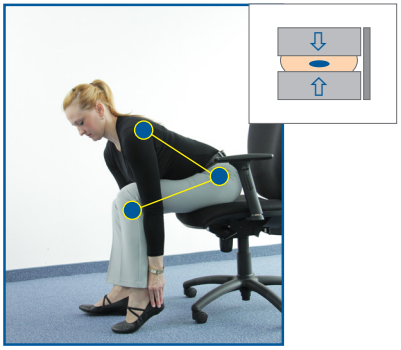
INCORRECT

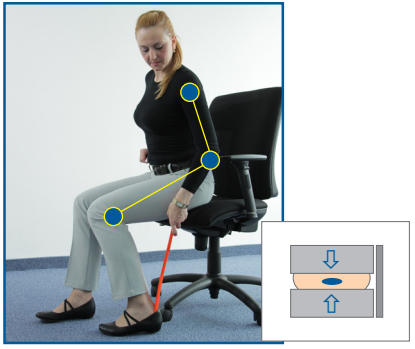
Although putting on shoes is a banal situation at the first glance, it can be very dangerous. It includes not only the activation of the first mechanism of the occurrence of injuries, but also a high probability of falling. This danger increases with age.

CORRECT

The first instruction is to be sitting down when putting on shoes. The second instruction is that our back has to be straight when putting on shoes. This also applies to putting on socks, pants and the like.

CORRECT

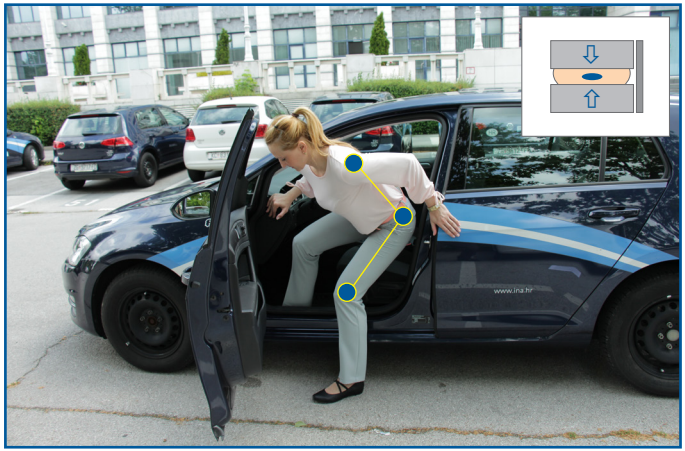




4.3 INCORRECT AND CORRECT POSTURE WHEN ENTERING AND EXITING A PERSONAL VEHICLE

INCORRECT

The most frequent mistake made when entering and exiting a vehicle is bent back. It is incorrect to enter a car headfirst.



CORRECT

When entering and exiting a vehicle, the core must be completely straight. Entering the vehicle must begin with legs and hips.

4.4 INCORRECT AND CORRECT POSTURE WHILE DRIVING BACKWARDS

INCORRECT

When driving backwards, the hips must not remain “glued” to the seat. Core rotation must not take place in the lower part of the spine.

CORRECT

When driving backwards, the core rotation begins in the legs, i.e. by lifting the hip from the seat. The core rotation may take place in the thoracic and cervical spine.

4.5 INCORRECT AND CORRECT POSTURE WHILE PUSHING AND PULLING DOORS

INCORRECT

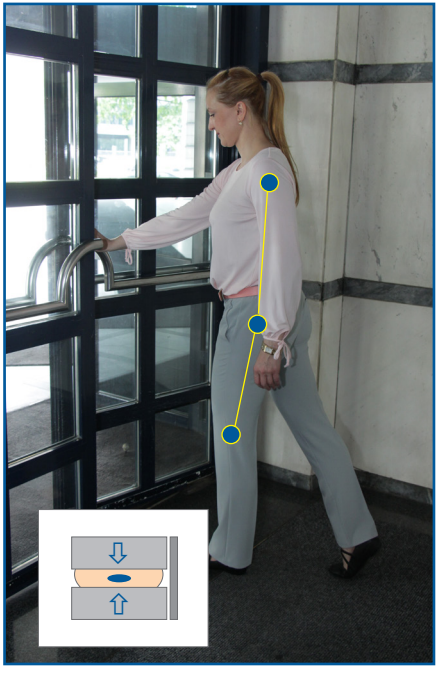
INCORRECT

When pushing or pulling the entrance door, the back must not be bent. Standing far away from the door is also incorrect.

CORRECT

The pushing or pulling of heavy entrance door begins with a firm core, and the back has to be straight. At the beginning of pushing or pulling, one must move closer to the door.

CORRECT



4.6 INCORRECT AND CORRECT POSTURE WHILE USING STAIRS

INCORRECT

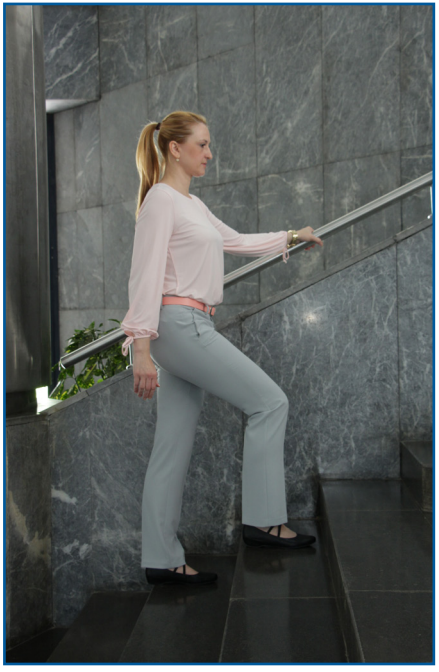
INCORRECT

When using stairs, it is incorrect not to hold the handrail, and it is especially dangerous if we are simultaneously typing on the mobile phone.

CORRECT

When ascending and descending the stairs, it is mandatory to hold the handrail.

CORRECT



5.

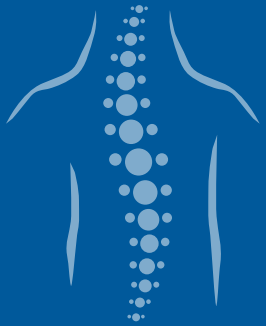
CONCLUSION

Posture and movement habits during the performance of everyday activities must be correct, as this is extremely important for the prevention of back pain.

Neither the best medical treatment nor exercise program will be effective until we eliminate the real cause of the problem, and the most frequent causes of the problem are incorrect performance of movements - incorrect movement and incorrect posture when performing everyday activities.

In this brochure, you can find information on how mechanical damages to the spine can be prevented or stopped, or at least how their progression can be slowed down by everyday application of correct posture.

Message from the author
Our spine does not primarily hurt us because we do not have time to work out, neither because we work a lot. From the body mechanics point of view, the cause lies in incorrect posture and movement habits.



Author: Assist. Prof. Josipa Nakić, PhD
Editor: prof. Ilijana Brkanović, MSc
Manager of the ZDRAVLJE+ (HEALTH+) project, INA d.d. SD&HSE
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