uniwell

Physical and Mental Awareness for University Students

TÜRKİYE ULUSAL AJANSI
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Editors
Tan Temel, YTU, Türkiye
Tuba Ugras, YTU, Türkiye
Yıldız Erdoğanoğlu, ABU, Türkiye
Paula Lebre, U Lisbon, Portugal
Dominique Persona Adorno, UNIPA, Italy

Authors
Sernaz Demirel, YTU, Türkiye
Yıldız Erdoğanoğlu, ABU, Türkiye
Sinem Asena Sel, ABU, Türkiye
Paula Lebre, U Lisbon, Portugal
Elisabete Monteiro, U Lisbon, Portugal
Tuba Ugras, YTU, Türkiye

Graphic Design
Ezgican Akgün, Eu&Pro, Czechia
Cevat Ucuncuoglu, Eu&Pro, Czechia

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Project Coordinator

Yıldız Technical University, YTU
Türkiye

Project Partners

Antalya Bilim University, ABU
Türkiye

University of Lisbon, U Lisbon
Portugal

University of Palermo, UNIPA
Italy

Coachmotion
Türkiye

Eu&Pro
Czechia

Technovias
Estonia

Physical and Mental Awareness for University Students

The project aims to enhance the mental wellness of university students by fostering cross-border collaboration and promoting holistic educational methodologies. Recognizing the unique stressors faced by today's students, we're committed to crafting resources that address emotional, psychological, and social well-being. By integrating traditional and digital tools, we seek to provide supportive environments, resources, and practices, empowering students to thrive academically and personally.

We anticipate the project to yield a comprehensive app packed with resources on mental wellness tailored for university students. The interactive content, from videos to e-books and podcasts, will foster improved mental health awareness and practices. As a result, students will gain enhanced coping strategies, resilience, and emotional intelligence.

Preface

Welcome to the UniWell E-Book, a resource developed within the framework of the Erasmus+ KA220-HED project UNIWELL: Physical and Mental Awareness for University Students, designed to support university students in navigating the challenges of academic life in the digital age. Higher education today offers incredible opportunities for learning, growth, and connection, yet it also presents new forms of stress and pressure. The increasing digitization of education and social life has transformed how we study, communicate, and develop our personal and social identities. While these changes create exciting possibilities, they also bring specific challenges: cognitive overload, digital fatigue, sedentary routines, social comparison, and the blurring of boundaries between academic responsibilities and personal life.

The UniWell E-Book has been created with these challenges in mind. Its purpose is not only to inform but also to provide practical, evidence-based tools and strategies that can help you maintain your physical, emotional, and mental well-being. Each chapter has been carefully designed to guide you through actionable steps, reflection prompts, and exercises that you can immediately apply to your daily life. The resource takes a holistic approach, combining textual explanations, visual summaries, infographics multimedia content, and self-reflective activities, ensuring that students,

with diverse learning preferences can engage meaningfully with the material.

The UniWell E-Book is organized to provide both structured learning pathways and flexible consultation options. You can read it sequentially or focus on specific modules according to your needs. Its main goals include:

1. Supporting Physical and Mental Well-Being
2. The chapters provide actionable insights to strengthen resilience, regulate emotions, and maintain healthy routines. Students will find guidance on managing stress, balancing screen time, fostering mindful technology use, and integrating physical activity into their daily lives.
3. Providing Coping Strategies for the Digital Age
4. Each chapter combines theory with practice, offering practical roadmaps for stress management, relaxation techniques, and strategies to prevent burnout. Whether you are looking for quick exercises to reset during a busy study day or more in-depth approaches to understanding your personal well-being, the e-book provides resources for all levels.
5. Serving as a Resource for Universities and Support Services
6. Beyond personal use, the e-book has been designed as a ready-to-use educational tool for university staff. Modules can be integrated into curricular activities, student support services, counseling programs, or digital self-help platforms, ensuring that its impact extends across institutional strategies for student well-being.

How This E-Book Can Support You

A Holistic and Engaging Learning Experience

The E-book's multimodal approach combines clear textual explanations with infographics, visual syntheses, multimedia content, and reflective exercises. This design ensures that students of different learning styles can interact with the material in a meaningful way. Importantly, the E-Book encourages active participation and self-reflection, helping students translate knowledge into actionable daily practices.

Advanced chapters (Chapters 10-12) are included for those who wish to deepen their understanding beyond foundational strategies. These sections offer more detailed scientific explanations and embodied approaches, providing enrichment for students and institutions that integrate the e-book into elective or extended modules. At the same time, the core content remains accessible and immediately applicable, ensuring that all students can benefit regardless of their prior experience with stress-management or wellness strategies.

A distinguishing feature of this E-Book is the rigorous expert evaluation that underpins its content. A dedicated Expert Review Board, composed of highly qualified academics and practitioners, has assessed the quality, relevance, and scientific grounding of all materials. Through their detailed qualitative feedback, iterative reviews, and guidance, the E-Book has been refined to ensure that it is both scientifically robust and pedagogically accessible. The result is a resource that is not only scientifically grounded but also engaging, actionable, and adaptable to diverse student needs. By bridging research and practice, the UniWell E-Book supports students in developing sustainable habits for well-being, resilience, and success in an increasingly digital academic environment. Students can be confident that the strategies and practices presented are research-informed, effective, and relevant to contemporary academic life.

Expertise Review Board

Name	Expertise	Country
Dr. Sonia Sicilia	*Student Support and Inclusion Expert, Functional Psychologist*	Italy
Dr. Calin Rus	*PhD in Social Psychology and Senior Expert for the Council of Europe at the Intercultural Institute of Timişoara*	Romania
Dr. Maria Kyriakidou	*Chair of the Division of Humanities and Social Sciences at ACT, American College of Thessaloniki*	Greece
Prof. Dr. Dominique Persano Adorno	*Associate Professor of Applied Physics at the University of Palermo and expert in Educational Innovation, Student-Centred Learning, and Higher Education Transformation*	Italy

Closing Remarks

We hope that you will use this E-Book as a trusted companion on your university journey—a guide to understanding and managing the unique challenges of contemporary student life. By exploring its chapters, engaging with its exercises, and reflecting on your own experiences, you will gain tools and strategies that can positively impact your health, learning, and personal growth. The UniWell Comprehensive E-Book represents a unique synthesis of scientific rigor, pedagogical innovation, and practical applicability, and it stands as a testament to what collaborative European projects can achieve in supporting student well-being. Welcome, explore, and take the first steps toward a more balanced, resilient, and empowered university experience.

The Editors

Chapters

CHAPTER 4

Posture and Postural Control

Yıldız Erdoğanoğlu, Sinem Asena Sel

Abstract

Good posture is not just about “sitting up straight.” It is a dynamic skill your body uses to keep every joint aligned, every muscle balanced, and every movement smooth whether you are hunched over lecture notes, waiting in line for coffee, or walking quickly to class. This chapter explains what posture really is, how postural control systems (muscles, joints, the brain, and balance organs) work together, and why proper alignment is far more important than you might think. Poor alignment can trigger neck and back pain, restrict breathing, and drain your energy. You will also learn how muscle imbalances, such as tight chest muscles combined with weak upper-back muscles, pull the body out of line and cause discomfort. But don’t worry: in this chapter we will provide exercise suggestions you can do even between study sessions. We will also explore the impact of posture on mood and concentration. For example, you’ll see how proper posture can truly boost confidence and mental clarity, how to recognize your own postural mistakes, how to apply simple corrective exercises, and how to incorporate small adjustments into your daily routine. In this way, you will achieve less pain, better movement, and a stronger body-mind connection.

Focused Problems

- Neck, shoulder, lower back, and hip pain
- Hunching and forward-head posture due to prolonged sitting
- Muscle imbalances (weak core and glutes, tight neck and chest)
- Reduced diaphragmatic capacity → shallow breathing / low energy
- Loss of focus and mental fatigue
- Tension-type headaches
- Poor balance and coordination
- Stress and low self-confidence (relationship between slumped posture and mood)

1. Introduction to Posture and Postural Control

Posture refers to the alignment and positioning of the body segments in relation to each other and the environment, maintained through the coordination of muscles, joints, and the nervous system. Proper posture is essential for minimizing stress on supporting structures, maintaining balance, and facilitating efficient movement. Postural control, on the other hand, encompasses the ability to maintain, achieve, or restore a state of balance during any posture or activity. This control depends on the integration of sensory inputs (visual, vestibular, and proprioceptive) and motor responses, allowing the body to adapt to both static and dynamic situations. For university students, understanding these concepts is crucial not only for preventing musculoskeletal discomfort, especially related to prolonged sitting, but also for enhancing functional performance in daily activities and sports.

Poor posture and postural control can lead to a variety of issues, including muscular imbalances, reduced stability, and increased risk of injury. Research shows that prolonged poor posture, such as forward head and rounded shoulders commonly seen during extended screen use, can adversely affect spinal alignment and muscular function. By learning the mechanisms underlying postural control, students can adopt strategies to improve body alignment and stability, such as engaging core muscles, adjusting ergonomic setups, and performing exercises to enhance proprioception and balance. Developing these skills not only supports musculoskeletal health but also contributes to overall body awareness and well-being.

2. The Role of Posture in Body-Mind Awareness

Posture plays a critical role in the connection between the body and mind, as it influences not only musculoskeletal alignment but also emotional states and cognitive processes [1,2]. Proper posture supports efficient breathing, optimal muscle function, and balanced nervous system activity, thereby contributing to both physical and mental well-being [3-5]. Research shows that upright and open postures can create positive effects on mood, energy levels, and self-confidence, while slouched or collapsed postures are associated with increased stress and negative emotions [6]. By being aware of your posture while studying, using technology, and walking, you can enhance your overall focus and sense of presence.

"Posture plays a critical role in the connection between the body and mind, as it influences not only musculoskeletal alignment but also emotional states and cognitive processes."

Postural awareness is the ability of an individual to recognize, perceive, and consciously correct their own body alignment when necessary. Exercises designed to improve postural awareness are a fundamental

component of body-mind integration practices. These practices encourage individuals to observe their body alignment, release unnecessary tension, and engage in balanced movements, thereby enhancing proprioception and interoception [7]. By improving posture, you can reduce physical discomfort caused by prolonged sitting, increase your concentration, and build resilience against stress. This holistic awareness not only contributes to physical health but also strengthens your ability to regulate emotions and maintain mental clarity in both academic and personal life [5].

3. Proper Body Alignment in Various Activities

Proper body alignment refers to maintaining the correct positioning of the joints and body segments during both static and dynamic activities, thereby ensuring optimal muscle function, joint health, and energy efficiency [1]. Correct alignme throughout the body, reducing stress on the spine and extremities. In daily activities such as sitting, standing, and walking, improper alignment, such as slouched sitting or forward head posture, can lead to muscular imbalances, joint discomfort, and long-term postural problems [8]. For university students, who often spend extended periods sitting while studying or using electronic devices, maintaining proper alignment is critical to prevent musculoskeletal pain and enhance overall well-being.

> ***"Posture plays a critical role in the connection between the body and mind, as it influences not only musculoskeletal alignment but also emotional states and cognitive processes."***

Paying attention to proper alignment during various activities also improves movement efficiency and reduces the risk of injury. For example, engaging the core muscles while standing, keeping the ears aligned with the shoulders while sitting, and maintaining neutral pelvic and spinal positions while walking or exercising all support better posture and

reduce unnecessary strain [2]. Evidence shows that practices such as adjusting chair height, using lumbar support, taking frequent movement breaks, and incorporating body–mind-based exercise strategies can significantly reduce discomfort associated with prolonged static postures [1]. By integrating these practices into your daily life, you can improve your physical comfort, functional performance, and long-term musculoskeletal health.

"By improving posture, you can reduce physical discomfort caused by prolonged sitting, increase your concentration, and build resilience against stress."

4. The Impact of Muscle Imbalances

Muscle imbalances occur when opposing muscle groups display unequal strength or flexibility, leading to improper joint positioning and abnormal movement patterns [9]. Overactive or shortened muscles pull the body into misaligned positions, while weak or lengthened muscles are unable to maintain proper alignment [10]. A common example is the combination of tight chest muscles with weak upper back muscles, which often results in rounded shoulders and forward head posture [11]. Such imbalances are frequently observed in students who spend long hours sitting or using electronic devices, contributing to discomfort in the neck, shoulders, and lower back.

Poor posture caused by muscle imbalances can increase stress on the joints, reduce movement efficiency, and elevate the risk of injury [12]. Correcting these imbalances requires a combination of stretching shortened muscles and strengthening weakened ones. Evidence shows that targeted corrective exercises, such as upper back strengthening and chest-opening stretches, can restore proper alignment and improve overall postural control [13]. Addressing muscle imbalances early can help you prevent long-term postural dysfunctions, enhance your physical performance, and reduce musculoskeletal pain.

5. Corrective Exercises for Posture

Now we will explore practical corrective exercises to make your posture more balanced and comfortable.

5.1. Mirror Body Symmetry Exercise

This exercise is performed to observe asymmetries between the right and left sides of the body, become aware of poor posture, and learn how correct alignment feels [14].

Exercise steps:

Step 1

- Stand in front of a large mirror (a full-length mirror is ideal).
- Wear comfortable clothes and remove your shoes.
- Stand upright in a relaxed position.

Step 2: Observation

- Head and neck: Is the head straight, or tilted to one side?
- Shoulders: Are both shoulders at the same height, or is one lower/forward?
- Arms: Do the arms hang symmetrically, or is one closer to the body?
- Pelvis/hips: Is the weight distributed evenly?
- Knees and feet: Are they aligned, or turned inward/outward?

Step 3: Correction

- Keep your head and chin parallel to the ground.
- Relax your shoulders down and back.
- Lift your chest slightly and gently engage your abdominal muscles.

- Lift your chest slightly and gently engage your abdominal muscles.
- Stand with knees relaxed (not locked).
- Place your feet shoulder-width apart and parallel.

Step 4: Awareness

- Hold this posture for 30–60 seconds.
- Observe yourself in the mirror and notice how correct posture feels in your body.
- Keep your breathing calm, natural, and deep.

Step 5: Progression

- Repeat the same exercise while sitting (e.g., at a desk or computer).
- With regular practice, you can increase awareness of poor posture habits and correct them. (Figure 4.1.)

Figure 4.1. Mirror Body Symmetry Exercise (AI-genarated image)

5.2. Wall Slide with Lift-Off Exercise

This exercise is performed to strengthen thoracic extension and scapular retraction and to correct forward-leaning posture [15,16].

Exercise steps:

Step 1: Starting Position

- Face the wall, placing your feet about 20–30 cm away from it.
- Bring your forehead or nose close to the wall without tucking your chin excessively.
- Place your arms near the torso and then overhead in a “Y” position, with your palms touching the wall.

Step 2: Execution

- With elbows straight, lift your arms a few centimeters away from the wall.
- Activate the upper back muscles by squeezing the shoulder blades together.
- Hold for 2–3 seconds, then slowly return to the starting position. (Figure 4.2)

Repetitions:

- Perform 8–12 repetitions, for 2–3 sets.
- Movement should be slow and controlled.

Precautions:

- Avoid pushing your lower back forward; focus the movement on the thoracic region.

- Do not protrude your neck; keep your chin gently tucked in a neutral position.
- Start with small ranges of motion and increase the movement amplitude as muscle control improves.

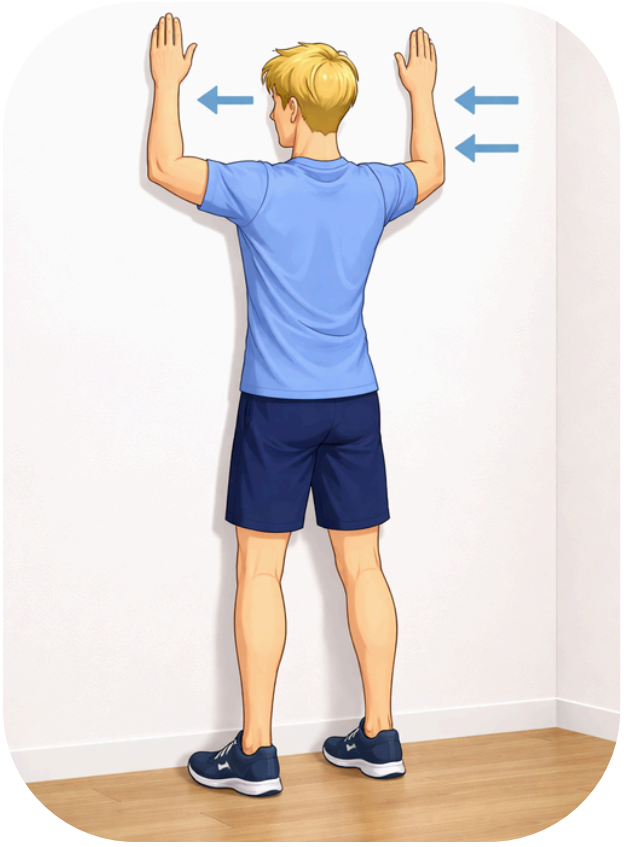

Figure 4.2. Wall Slide With Lift-Off Exercise (AI-genarated image)

5.3. Bridge Exercise

It is a fundamental exercise used particularly to strengthen the hip and trunk muscles, stabilize the lumbar spine, and improve postural control [17].

Exercise steps:

Step 1: Starting position

- Lie on your back on the mat.

- Bend your knees and place your feet on the floor hip-width apart.
- Place your arms by your sides with the palms facing down.
- Keep your head, shoulders, and arms anchored to the floor.

Step 2: Lifting the hips

- Press through your heels and slowly lift your hips upward.
- Create a straight line from the knees to the shoulders.
- Squeeze the glute muscles and keep your core engaged.
- Move in a controlled way without straining your lower back.

Step 3: Hold

- Hold the position for 5-10 seconds.
- As you exhale, slowly return to the starting position. (Figure 4.3)

Repetitions: Perform 10–12 repetitions for 2–3 sets.

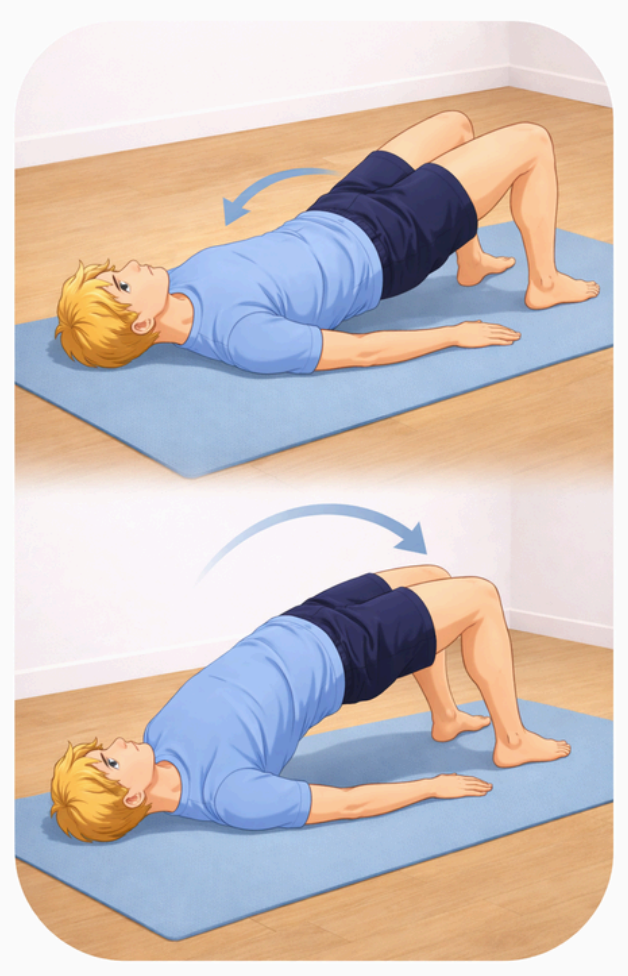

Figure 4.3. Bridge Exercise (AI-genarated image)

5.4. Bird-Dog Exercise

Bird-Dog is a balance and stabilization exercise that primarily targets the deep core stabilizer muscles while also engaging the hip, shoulder, and back muscles [18].

Exercise steps:

Step 1: Starting Position (Quadruped, Neutral Spine)

- Hands under shoulders and knees under hips on the floor.
- Spine neutral, back flat, neck aligned with the spine.

Step 2: Extending the Arm and Leg

- Extend the right arm forward and the left leg straight back.
- Keep hips and shoulders parallel to the floor.

Step 3: Hold

- Hold this position for 5-10 seconds, keeping the core engaged. (Figure 4.4)

Step 4: Return to Start

- Lower the arm and leg slowly.

Step 5: Other Side

- Repeat with the left arm and right leg.

Repetitions: 8–10 repetitions per side, 2–3 sets.

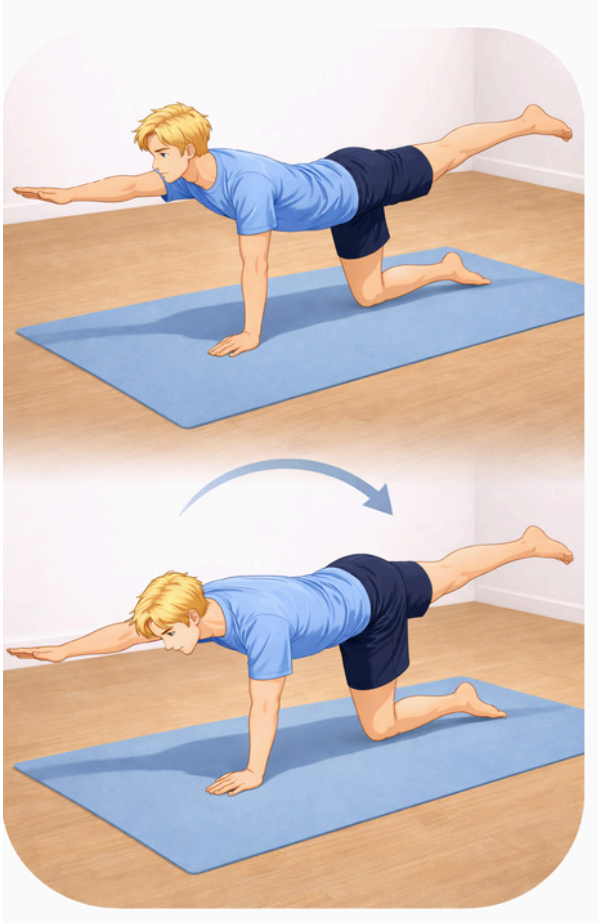

Figure 4.4. Bird-Dog Exercise (AI-genarated image)

5.5 Cat–Cow Stretch

Cat–Cow is an exercise that enhances spinal mobility and improves awareness of the core muscles [19].

Exercise steps:

Step 1: Start

- Begin on your hands and knees in a tabletop position.
- Hands under shoulders, knees under hips.

Step 2: Rounding the spine (Cat)

- As you exhale, round your spine upward.
- Let your head drop forward and bring your chin toward your chest.
- Gently engage your hips/glutes and draw your abdomen in.

- You should feel a stretch in your upper back.tions.
- You can hold each position for 3–5 seconds.

Step 3: Continuation

- After this position, inhale and move into Cow (arch your back and lift your head and tailbone).
- The Cat–Cow exercise is performed by smoothly transitioning between these two positions (Figure 4.5).

Duration & repetitions:

- Move between Cat and Cow slowly for 6–10 repetitions.
- You can hold each position for 3–5 seconds.

Figure 4.5. Cat-Cow Stretch (AI-genarated image)

5.6. Child's Pose

Child's Pose is a fundamental exercise focused on relaxation and stretching. It particularly reduces tension in the back, hips, and shoulders, gently extends the spine, and promotes mental relaxation [20].

Exercise steps:

Step 1: Starting position

- Kneel on your shins with your toes pointing back.
- Keep your knees hip-width apart or slightly wider.

Step 2: Bringing hips toward heels

- As you exhale, slowly shift your hips back toward your heels.
- If your hips don't rest fully on your heels, don't force it; let them come as close as is comfortable.

Step 3: Extending the arms forward

- Gently lower your torso forward and bring your forehead toward the floor.
- Extend your arms forward with your palms on the floor. (For a more comfortable variation, you can rest your arms alongside your body.)

Step 4: Breath and relaxation

- Take deep breaths in this position. As you exhale, relax your shoulders and back further.
- Feel your torso settling closer to the floor with each breath (Figure 4.6).

Duration: Stay for 30 seconds to 1 minute. For beginners, holding for 3–5 breaths is sufficient.

To finish: Slowly walk your hands back toward your body and return to an upright seated position.

Figure 4. 6. Child's Pose (AI-genarated image)

5.7. Lumbar Extensor Stretch

Lumbar Extensor Stretch is a stretching exercise that targets the muscles located in the posterior region of the lumbar spine, aiming to reduce tension and improve spinal flexibility [21].

Exercise steps:

Step 1: Starting Position

- Lie on your back on a flat surface.
- Bend your knees and place the soles of your feet on the floor.

Step 2: Knees to Chest

- As you exhale, slowly draw both knees toward your chest.
- Grasp your knees or thighs with your hands and gently press them toward your chest.

Step 3: Stretch

- Feel your lower-back muscles lengthen and the tension ease.
- Breathe deeply and hold for 20–30 seconds.

Step 4: Return to Start

- As you inhale, slowly release your legs and return to the starting position (Figure 4.7.).

Repetitions: Do 8-10 repetitions.

Build short breaks: When studying or sitting at the computer for long periods, take 3–5-minute mini breaks every 30–45 minutes. During these breaks, you can do simple exercises such as the lumbar extensor stretch or pelvic tilt.

Figure 4.7. Lumbar Extensor Stretch (AI-genarated image)

How to Integrate into Daily Life?

- **Establish a routine at the start or end of the day:** Set aside 10–15 minutes in the morning before you begin the day or at night before bed to do exercises. This helps you relax both physically and mentally.
- **Add exercises you can do at your desk:** Especially while sitting, check your posture. Even simply pulling your shoulders back (scapular retraction) or lengthening the spine with a deep breath creates small but effective changes.
- **Use your phone and screen time as reminders:** Set “exercise time” alerts on your phone or computer to prevent forgetting during the day.
- **Make it social:** Do them with friends or with your family at home. Doing them together increases motivation and makes it easier to turn them into a habit.

Conclusion

In conclusion, having proper posture and keeping the body balanced are very important for both our health and daily quality of life. Ensuring that our muscles work in balance, maintaining correct body alignment and regularly doing some simple exercises help strengthen posture and prevent potential pain. In particular, exercises in this chapter support the lower back and trunk muscles, making the spine stronger. When we add these exercises to our daily routine, we not only move more comfortably; we also develop bodily and mental awareness. You feel better, have more energy throughout the day, and cope with stress more easily.

"When we add these exercises to our daily routine, we not only move more comfortably; we also develop bodily and mental awareness."

For more information, visit the UniWell website.

https://uniwellproject.com

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Recommended Resources

- Saraiva, M., Vilas-Boas, J. P., & Castro, M. A. (2024). Postural control and muscle activity during dual-task in young adults. Behavioral Sciences, 14(5), 403.
- Feng, D., & Zhang, Y. (2023). College students' knowledge, attitudes, and practices regarding body posture: A cross-sectional survey. PLOS ONE.

Glossary

- **Alignment:** The optimal positioning of body segments relative to one another to maintain balance, minimize strain, and ensure efficient movement.
- **Balance (Postural Stability):** The ability to maintain the body's center of gravity over its base of support, both in static and dynamic conditions.
- **Center of Gravity:** The point in the body where total mass is concentrated; balance is maintained when this point is aligned over the base of support.
- **Core Muscles:** The muscles of the abdomen, lower back, and pelvis that stabilize the spine and play a vital role in postural control and movement efficiency.
- **Corrective Exercises:** Targeted movements designed to address muscular imbalances, improve joint alignment, and restore optimal posture.
- **Ergonomics:** The science of designing workspaces and activities to fit the individual, minimizing strain and supporting proper posture during tasks such as sitting or typing.
- **Forward Head Posture:** A common postural deviation where the head protrudes forward relative to the shoulders, often due to prolonged screen use.
- **Joint Alignment:** The correct anatomical positioning of joints, ensuring even force distribution and preventing excessive stress or wear.
- **Muscle Imbalance:** A condition where opposing muscle groups differ in strength or flexibility, leading to abnormal posture and inefficient movement patterns.

- **Neutral Spine:** The natural curvature of the spine in which the cervical, thoracic, and lumbar regions are properly aligned, minimizing stress on supporting structures.
- **Pelvic Tilt:** A small movement of the pelvis that helps align the spine; can be anterior (forward) or posterior (backward), depending on muscle activation patterns.
- **Postural Awareness:** The ability to recognize and consciously adjust one's body alignment during activities to prevent strain and enhance balance.
- **Postural Control:** The integrated sensory–motor process that allows maintenance of balance and orientation through input from the visual, vestibular, and proprioceptive systems.
- **Rounded Shoulders:** A postural deviation caused by tight chest muscles and weak upper-back muscles, often seen in people who sit for long periods.
- **Scapular Retraction:** The movement of pulling the shoulder blades back toward the spine, improving upper-back strength and posture.
- **Static Posture:** A body position maintained without movement (e.g., sitting or standing), requiring muscular endurance and alignment awareness.
- **Thoracic Extension:** Movement of the upper spine backward, helping counteract slouching and promoting an upright postur**e.**
- **Vestibular System:** The sensory system within the inner ear that detects motion, orientation, and balance; contributes to postural control.

Project Coordinator

Yıldız Technical University, YTU
Türkiye

Project Partners

Antalya Bilim University, ABU
Türkiye

University of Lisbon, U Lisbon
Portugal

University of Palermo, UNIPA
Italy

Coachmotion
Türkiye

Eu&Pro
Czechia

Technovias
Estonia

Physical and Mental Awareness for University Students

The project aims to enhance the mental wellness of university students by fostering cross-border collaboration and promoting holistic educational methodologies. Recognizing the unique stressors faced by today's students, we're committed to crafting resources that address emotional, psychological, and social well-being. By integrating traditional and digital tools, we seek to provide supportive environments, resources, and practices, empowering students to thrive academically and personally.

We anticipate the project to yield a comprehensive app packed with resources on mental wellness tailored for university students. The interactive content, from videos to e-books and podcasts, will foster improved mental health awareness and practices. As a result, students will gain enhanced coping strategies, resilience, and emotional intelligence.