

GUIDE

to online course titled
**Gait physiotherapy - practical
aspects and innovations**

Project number	2020-1-PL01-KA203-082292
Title of project	Smart learning for gait physiotherapy – a standardized tool for health higher education in Europe
Acronym	SMARTtherapy+
Project consortium	Silesian University of Technology (Poland) Universität zu Lübeck (Germany) Fondazione Politecnico di Milano (Italy) Jerzy Kukuczka Academy of Physical Education (Poland)



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1. Welcome and introduction

Welcome to online course

Gait physiotherapy - practical aspects and innovations!

The course is a result of a huge challenge in the field of physiotherapy education for European Union countries that results from two important phenomena: an increasing number of EU citizens needing physiotherapy because of gait abnormalities and a lack of European standards of professionalization of the physiotherapist occupation, ensuring maximum safety and high quality of therapy.

The course is a result of huge challenge in the field of physiotherapy education for European Union countries that results from two important phenomena:

- increasing number of EU citizens needing physiotherapy because of gait abnormalities;
- a lack of European standards of professionalization of the physiotherapist occupation ensuring maximum safety and high quality of therapy.

Gait abnormalities significantly affect the quality of life and limit personal independence and freedom. The causes of gait pathologies are varied and can be divided into three groups of reasons:

1. Clinical reasons associated with numerous diseases (i) children with the most common diseases within the developmental period (gait on fingers, asymmetrical gait, gait on a wide plane); childhood neuromuscular diseases (cerebral palsy, progressive muscular dystrophy, DMP); pediatric orthopedic-neurological diseases (peripheral nervous damage, craniocerebral trauma, foot and lower limb defects);(ii) adults with the most common diseases (stroke, extrapyramidal system diseases, demyelinating diseases, spinal injuries, labyrinth diseases); orthopedic diseases (arthritis, joint inflammatory diseases); and internal diseases (atherosclerosis of the extremities, diabetic foot).
2. Contemporary lifestyles include sedentary lifestyles, sedentary working modes, and so-called kinesiophobia, meaning fear of pain due to movement. Improper lifestyles lead to mechanical overload of the musculoskeletal system, followed by the formation of so-called pain syndromes. The discomfort associated with the sensation of pain reduces life activity, including professional activity, and

consequently leads to many diseases of the 21st century, e.g., obesity, depression, and diabetes. Moreover, these disorders affect walking dysfunctions, which may be visible in the form of limps or changes that may be invisible and ignored to some extent, and then permanently enter a new pattern of gait. In addition, poor gait habits can remain even after the cause has been identified and removed, which causes pain. One of the crucial aspects of gait pathology research is understanding how lifestyle affects natural mobility. It is worth adding that surviving the habit of abnormal gait may once again become a cause of pain. Undoubtedly, arising pain syndromes are a source of incorrect gait, but it can also be the opposite. To sum up, walking is a sensitive indicator of overall health, and the walking speed you choose is closely correlated with life expectancy.

3. Aging population. Age is a factor that increases the risk of gait dysfunctions such as slower gait and increased gait variability, which are additionally enhanced by exposure to visual perturbations and increased fall risk. Reports show that the prevalence of gait and balance disorders markedly increases with age, from approximately 10% between the ages of 60 and 69 years to more than 60% in those over 80 years. Moreover, balance and gait problems may be precursors of falls, which are the most common cause of severe injuries in older part of population. It is worth adding that surviving the habit of abnormal gait may, after some time, again become a cause of pain. Undoubtedly, arising pain syndromes are a source of incorrect gait, but it can also be the opposite. To sum up, walking is a sensitive indicator of overall health, and the walking speed you choose is closely correlated with life expectancy.

Why is this online course unique and can help you overcome the challenges highlighted?

Because:

- A comprehensive group of people who create or influence the level of gait physiotherapy in Europe can use this course for free. These are academic teachers, physiotherapists, physiotherapy students, decision-makers, and others.
- The course contains comprehensive and up-to-date knowledge of gait physiotherapy, which means biological knowledge, biomechanical knowledge, mental and social knowledge, ergonomic knowledge, and finally **practical**



knowledge based on a unique and first-of-this-kind base of case studies, videos, descriptions, and practical basis for considering cases of gait pathology, for example, for researchers analyzing various gait pathologies, for students preparing projects, theses, etc.

- The course contains a list of producers and examples of innovative equipment for gait physiotherapy.
- This is the trainee who decides what is important to him and studies all or selected parts of the course.
- Particular parts of the course contain different learning elements, knowledge units, exercises, additional information, literature, references, etc. All this is done to ensure that knowledge is given in a complete and accessible manner.

**FREE COURSE AVAILABILITY + COMPREHENSIVENESS + THEORY +
PRACTICE + EXAMPLES + VIDEOS + CASE STUDIES + DISCUSSION
+ KNOWLEDGE EXCHANGE PLATFORM**

=

GAIT PHYSIOTHERAPY - PRACTICAL ASPECTS AND INNOVATIONS

2. Course objectives

The aim of “Gait Physiotherapy: Practical Aspects and Innovations” is the acquisition of knowledge, skills, and competences by a trainee in the field of gait physiotherapy, analysis, and shaping of gait physiotherapy protocols, including innovative physiotherapy technologies and methods.

Particularly, the learning objective is to:

- gain interdisciplinary knowledge on gait pathologies as well as the biological, biomechanical, mental, social, and ergonomic fundamentals of gait physiotherapy;
- gain the cognitive and practical skills to apply this knowledge to recognize gait pathology, taking into account the area of medicine and type of patient, define personalized physiotherapy protocols based on certain types of gait pathology, and take into account the ergonomic conditions of the physiotherapist’s work;
- create competences that prove the ability to use these knowledge and skills, as well as personal, social, and/or methodological abilities, in work or study situations and in professional and personal development.

Special emphasis is placed on using dedicated case studies of gait physiotherapy that are crucial in providing practical and useful knowledge with the attribute of being simple to absorb, understand, and transfer into practice.

The specific learning objectives are derived from the three main learning areas of the course:

1. Fundamentals of gait physiotherapy - interdisciplinary overview:

The objective is to provide the trainees with interdisciplinary and fundamental knowledge about gait physiotherapy. Particularly, the trainees will be prepared to undertake more comprehensive and complex studies on planning, organizing, and conducting gait physiotherapy for patients with a particular type of gait pathology. Within interdisciplinary topics that are crucial for being professional physiotherapists, the most important aspects of biological determinants of gait physiotherapy, gait assessment, biomechanics, and anthropometrics in gait, as well as social and psychological aspects of physiotherapy, are presented.

The trainees will find both theoretical content and elements of practice when it comes to applying the methods and tools described.

2. Methodological approach to gait physiotherapy

The objective is to provide the students with more specialized knowledge about methods and tools, including innovative technologies, within each stage of planning gait physiotherapy: diagnosis, physiotherapy exercises, and maintaining physiotherapy by patient and self-physiotherapy. The training includes both theoretical and practical approaches to using a comprehensive group of traditional and new and innovative methods, giving advantages and disadvantages for certain types of gait pathologies. Trainees will also be familiar with the procedures and tools for designing ergonomically correct working conditions and their attitude toward patients to avoid the negative health consequences of physiotherapists' occupational activities.

3. Gait physiotherapy in case studies – learning from practice

The objective is to provide a comprehensive data base containing various case studies and variant gait physiotherapy scenarios, taking into account the diverse aetiology of gait pathology and the differential age ranges of patients. The case studies represent the following medical fields:

- gait physiotherapy in orthopaedics;
- gait physiotherapy in neurology;
- gait physiotherapy in geriatrics;
- gait physiotherapy in paediatrics.

Trainees have a unique opportunity to follow the variant patient treatment pathways given the base of specific normal and pathological gait patterns. After this part of the course, trainees will be prepared to make independent decisions regarding gait physiotherapy of a specific aetiology and, at the same time, be prepared for practical activities in the rehabilitation room with real patients. Individual scenarios of gait physiotherapy protocols include the teaching content presented in the previous modules, reflecting the given theory in practical activities.

IMPORTANT!

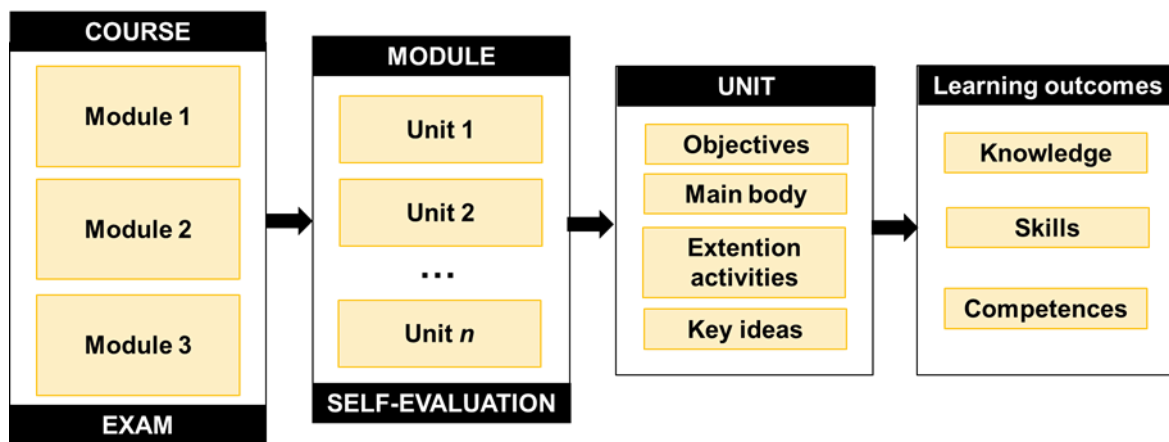
If you are an academic teacher:, you can both learn and use this course within your academic work with students. Use training content, videos, tests, activities, and case studies in your work with students.

If you are not an academic teacher:, you can both learn and use this course within your current activities: studies, professional activities, etc.

3. Course structure

The course is divided into three modules, depending on the topic. Each module is divided into learning units.

NOTE: Within this course, completing any form of evaluation task, like an exam, test, or extension activities are optional and does not condition access to the content of the entire course.



The detailed structure of the course with the names of each unit is presented below:

Module 1: Fundamentals of Gait Physiotherapy – Interdisciplinary Overview

- Unit 1: Basic concepts of the development of Gait
- Unit 2: Biomechanics of Gait
- Unit 3: Assessing Gait
- Unit 4: Mental and social determinants of gait physiotherapy

Module 2: Methodological approach to gait physiotherapy

- Unit 1: Gait physiotherapy methodologies
- Unit 2: Technological innovations in gait physiotherapy
- Unit 3: Ergonomics and workflow in gait physiotherapy

Module 3: Gait physiotherapy in case studies – learning from practice

- gait physiotherapy in orthopaedics
- gait physiotherapy in neurology

- gait physiotherapy in geriatrics
- gait physiotherapy in paediatrics

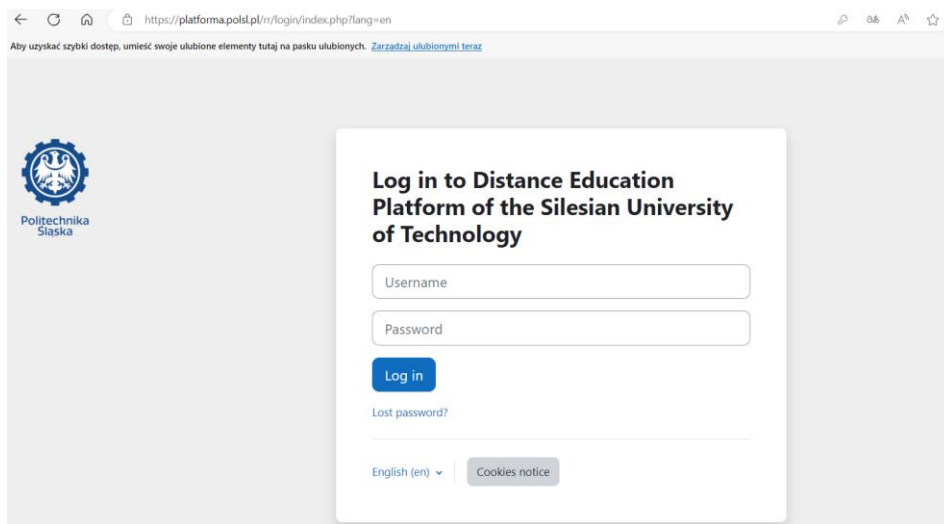
Depending on the module and unit, different forms of content presentation and additional activities are available in the course, so that knowledge is acquired in the best and most varied way. Particularly, you can find the following elements:

- Intro video is a short video invitation to the particular unit containing the main unit ideas.
- The basic content of the unit, which is mainly in pdf form, In some cases, the units are very extensive due to the complexity of the topics, but you choose what exactly interests you and the area you study.
- Extension activities aim to do practical tasks, enabling the use of practical knowledge from the unit.
- Tests in the form of multiple choice aim to check more theoretical knowledge from the unit.
- Additional materials like links, leaflets, etc. will reinforce learning opportunities.
- **Anonymous satisfaction questionnaire (very important for the project that will help in improving the course).**
- Forum that is a platform of discussion or questions for the teachers.

4. How to start

In this section, you can find screens and tips on how to move within an online course.

Go to the website (<https://platforma.polsl.pl/rr/course/view.php?id=629>) and log in. An individual login and password has been emailed to each user who have registered for the course.



After logging in to the platform, you will go to the course “Smart learning for gait physiotherapy: a standardized tool for health higher education in Europe” (acronym: SMARTerTherapy+), project number 2020-1-PL01-KA203-082292.

Below you can find the main window of the online course, which presents important elements:

- 1 Navigation window
- 2 Navigation slider
- 3 Opening and closing the contents
- 4 Variety elements of the course
- 5 Main course window



platforma.polsl.pl/rr/course/view.php?id=629#section-2

Platform RR Home Dashboard My courses Helpdesk Platform Aktualizuj

Gait physiotherapy - practical aspects and innovations

Course Settings Participants Grades Reports More

✓ **This course is prepared under the international project SMARTherapy+** Collapse all

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Therapy+**

Smart learning for gait physiotherapy – a standardized tool for health higher education in Europe

Project number: 2020-1-PL01-KA203-082292

Partners participating in the project:

Politechnika Śląska Fondazione Politecnico di Milano AWF UNIVERSITÄT ZU LÜBECK


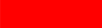
Project website:
<https://smartertherapyplus.eu/>

5. Course timetable

The course lasts 30 days. Particular course modules will be made available at specific intervals.

IMPORTANT! After launching new modules, the previous content will be available until the end of the course.

	Days of the course																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Module 1																															
Module 2																															
Module 3																															

 open
 close

6. After the course completion

After the course each participant will receive certificate according to the template presented below.



CERTIFICATE



THIS IS TO CERTIFY THAT
Jan KOWALSKI

HAS COMPLETED THE INTERNATIONAL ONLINE COURSE HELD FROM 2nd TO 31st OF OCTOBER 2023 TITLED
Gait physiotherapy - practical aspects and innovations

COURSE FRAMEWORK

Module 1: Fundamentals of Gait Physiotherapy – Interdisciplinary Overview

- Unit 1: Basic concepts of the development of Gait
- Unit 2: Biomechanics of Gait
- Unit 3: Assessing Gait
- Unit 4: Mental and social determinants of gait physiotherapy

Module 2: Methodological approach to gait physiotherapy

- Unit 1: Gait physiotherapy methodologies
- Unit 2: Technological innovations in gait physiotherapy
- Unit 3: Ergonomics and workflow in gait physiotherapy

Module 3: Gait physiotherapy in case studies – learning from practice

- a. gait physiotherapy in orthopaedics
- b. gait physiotherapy in neurology
- c. gait physiotherapy in geriatrics
- d. gait physiotherapy in paediatrics

SIGNED:
Joanna Bartnicka, Prof. Silesian University of
Technology, Project Coordinator

The online course is a part of
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Enjoy the course!