

# QUALIREHAB

## Early hybrid rehabilitation in children and young adults with chronic disease: the QUALIREHAB program

### ABSTRACT

Chronic diseases in children and adolescents often result in significant physical deconditioning, adversely affecting their quality of life and long-term health. There is a critical need for effective, personalized rehabilitation programs that address both physical and psychosocial aspects of these conditions. The current standard care models are often limited, not tailored to individual needs, and lack comprehensive support mechanisms. The QUALIREHAB program aims to bridge this gap by providing a hybrid model of rehabilitation that integrates advanced digital tools, personalized care plans, and a multidisciplinary approach to improve health outcomes and long-term well-being for young patients with chronic diseases.

The QUALIREHAB program aims to improve the quality of life of chronic diseases in children, adolescents, and young adults by implementing a transnational custom-tailored rehabilitation model. The program will enhance an already existing and successful digital platform to incorporate AI-driven exercise prescriptions, allowing for highly individualized patient care based on data from past, ongoing, and future trials. This digital platform will support continuous monitoring of patient progress through wearable technology, ensuring real-time adjustments and personalized feedback. Additionally, the program will develop comprehensive training and educational resources accessible to patients, primary care professionals, and healthcare providers, fostering a global understanding and application of cardiopulmonary fitness, exercise training, patient education, and mental health support. By structuring and adapting the rehabilitation content to accommodate various chronic diseases and individual psychosocial profiles, the program ensures that it is relevant and effective across diverse patient populations. The implementation of QUALIREHAB in clinical settings will involve extensive training for healthcare providers and continuous data collection to monitor the program's effectiveness, particularly focusing on understudied chronic conditions. Moreover, the program will engage with a broad range of stakeholders, including patient organizations, policymakers, healthcare authorities, scientific committees, and the sports sector, to advocate for policy changes that support the integration and enhancement of physical activity in paediatric healthcare and education systems. Ultimately, QUALIREHAB aims to improve health outcomes, enhance patient autonomy and self-management, and ensure the program's scalability and adaptability to meet the diverse needs of young patients across different countries' healthcare systems.

The implementation of the QUALIREHAB proposal has the potential to induce a transformation on how physical activity and mental health are managed in chronic diseases. This begins by sharing insights on aerobic capacity and mental health across various chronic diseases. We will custom-tailor physical activity programs to be delivered transnationally, tailored to each country's needs. Using this data, we will develop AI models to assist in physical activity prescription by primary care professionals and specialists. We will systematically engage with policymakers, institutions, and healthcare organizations to emphasize the importance of physical activity and mental health in chronic disease management. By equipping professionals with the understanding and tools to combat these issues, we aim to reduce the financial burden on healthcare systems, improve the quality of life for children and adolescents, and transform societal understanding of cardiovascular health in chronic diseases.

## KEYWORDS

- Quality of life
- Paediatrics
- Chronic disease
- Aerobic fitness
- Rehabilitation
- Physical health
- Mental health

## DURATION

36 months

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