



**UNIVERSITY OF WEST ATTICA**  
**SCHOOL OF HEALTH AND CARE SCIENCES**  
**DEPARTMENT OF PHYSIOTHERAPY**

## **SUMMARY OF DOCTORAL DISSERTATION**

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## **TITLE:**

### **The role of Pilates exercise in the rehabilitation of Achilles tendinopathy**

Achilles tendinopathy (AT) is one of the most common tendon pathologies caused by excessive and repetitive loading, affecting both high- and medium-level athletes as well as the general population. The first line of AT management is conservative, including a range of physiotherapeutic options like low level laser therapy, iontophoresis, shockwave, deep transverse friction massage, dry needling, elastic bandaging, chiropractic therapy. Despite the knowledge gap in understanding the pathophysiology of AT, which is the main reason for the absence of well-documented targeted therapies, exercise therapy presents the highest evidence, lower cost and fewer complications and is suggested to form the basis of AT management. Pilates could be used as an alternative approach to the rehabilitation of lower limb tendinopathies and in particular Achilles tendinopathy in both sports-related pathologies and the general population. The variety of different forms of Pilates exercises (isometric, eccentric, high resistance exercises performed at a slow pace, balance, and neuromuscular coordination exercises, stretching) and the potential for progressively increasing the load on the tendon are promising in building a therapeutic algorithm for the effective treatment of the disease.

In this context, the aim of the research study is to investigate a rehabilitation programme for Achilles tendinopathy based on the Pilates method. Specifically, pain, strength, functional capacity and return to activities will be evaluated. In the first stage, a systematic review of the literature will be conducted to investigate the effectiveness of exercise in the treatment of Achilles tendinopathy and to define the indications and contraindications involved with the treatment option, together with the recommended dosage in existing, well-studied programmes. For the optimal design of the Pilates protocol, a questionnaire will be designed and issued to physiotherapists using Pilates as an alternative exercise method. Following this, a pilot study will be conducted in which the small-scale implementation of the research protocol will be evaluated to improve the design, prior to the full-scale research project. The effect of Pilates exercises will be assessed using up-to-date evidence-based recommendations for diagnosis, outcome, and treatment. In particular, the combination of VISA-A scale, the heel rise test, and the muscle

strength in the gastrocnemius using a dynamometer, comprises a reliable and valid set of outcome measures for this purpose.