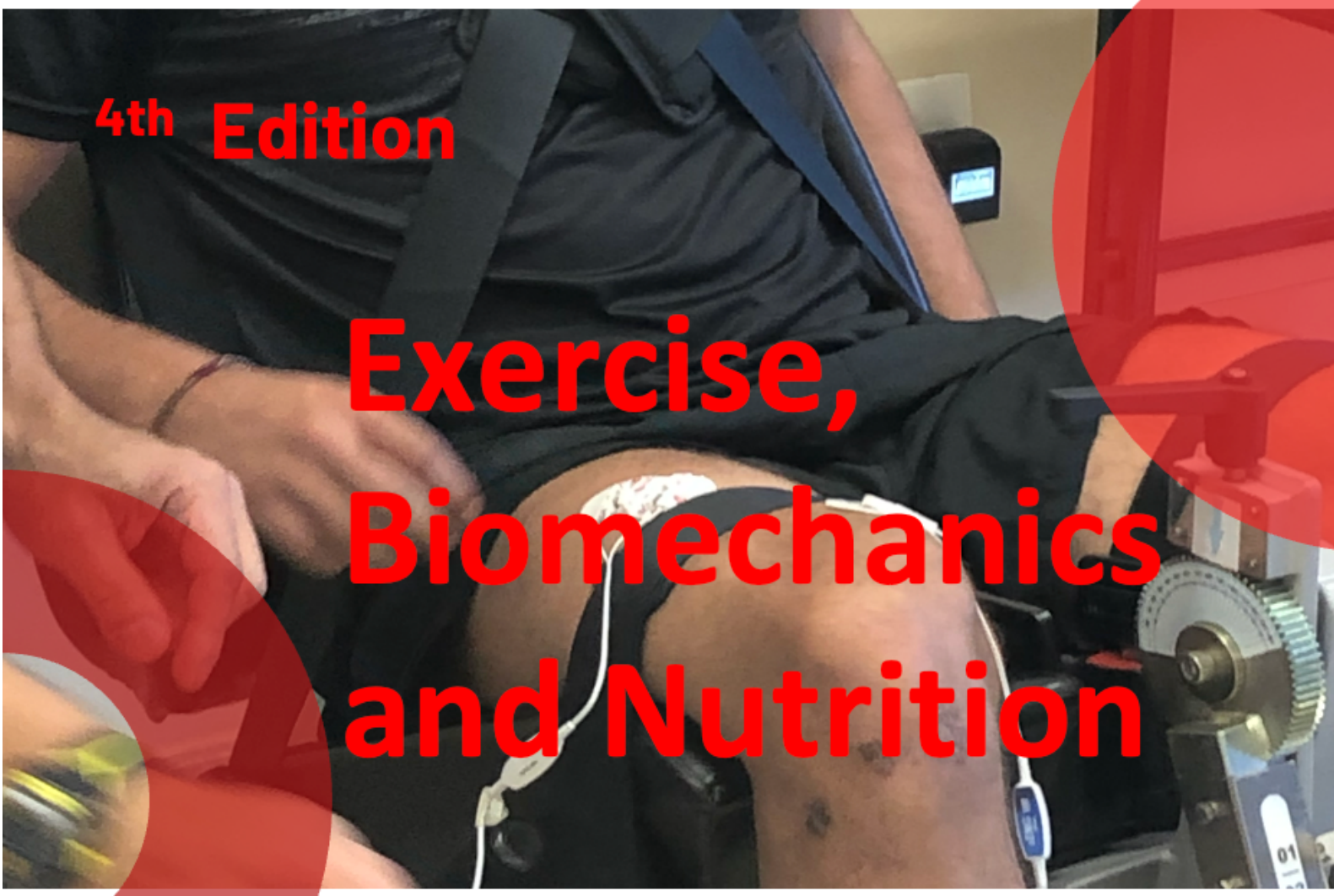

BOOK OF ABSTRACTS
2025

Editor: Leitão, L

EDUCAÇÃO
POLITÉCNICO SETÚBAL
SCHOOL · POLYTECHNIC UNIVERSITY

cieqv centro de investigação em qualidade de vida

FCT Fundação para a Ciência e a Tecnologia

Book of Abstrats

4th INTERNATIONAL CONGRESS EXERCISE, BIOMECHANICS AND NUTRITION – ESE/IPS
May 29 and 30 of 2025

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Editions:
Instituto Politécnico de Setúbal – Escola Superior de Educação
Centro de Investigação em Qualidade de Vida

ISBN:
978-989-35809-7-4

Classification:
Digital

Funding:
FCT – Fundação para a Ciência e a Tecnologia, I.P./ Foundation for Science and Technology, I.P., Grant/Award Number UIDB/04748/2020 Life Quality Research Center (Centro de Investigação Qualidade de Vida)

Preface

Polytechnic Institute of Setúbal is emerging as a reference in the supporting and diffusion of scientific advances in Sports Sciences across the International Congress: Exercise, Biomechanics and Nutrition in a commitment with the academic excellence of their students and the scientific community.

The fourth edition of the International Congress: Exercise, Biomechanics and Nutrition reflexes the success of this scientific-technical-informative initiative that makes to this event as one of the most important from Portugal and the Iberian Peninsula. This event selected an hybrid format that interspersed conferences of contrasted speakers with oral communications of Degree student and consolidated research groups. Assistants to this events that exceeded 240 participants attended to the last advances in 3 well differentiated areas as Biomechanics, Exercise and Sport Nutrition divided in 11 conferences.

Conferences were presented by prestigious researchers from 6 different universities of 5 different countries as Polytechnic Institute of Setúbal (Portugal), University of Salamanca, University of Sevilla (Spain), Federal Institute of Minas Gerais (Brazil), University of Jyväskylä (Finland) and University of Suffolk (UK).

However, the most important area of this Congress was the number and quality of the oral communication presented, 94 in total. In this sense, the International Congress: Exercise, Biomechanics and Nutrition is one of the Congress with a higher number of works presented by Graduate students that it is in combination with the results of contrasted research groups, some of the references at international level that include researchers from eight different countries as England, Brazil, Spain, Portugal, Colombia, Italy, Iran and Turkey. Readers have the opportunity of supervising all these oral communication from the abstract presented in this Book of Abstracts.

Since the Organizing and Scientific Committees want to congratulate to all the researchers and attendees who participated in this third edition of the International Congress: Exercise, Biomechanics and Nutrition. In addition, to the external readers we invite to participate in the fifth edition that will be organized by Polytechnic Institute of Setúbal in 2026.

Creatine as an ergogenic aid for returning to play in athletes with patellar tendinopathy

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Introduction

A limited number of sports supplements have been identified as capable of enhancing sports performance directly or indirectly, favouring nutrients in situations without the availability of food, or treating or preventing nutritional deficiencies. However, there is limited data regarding the possible ergogenic properties of creatine supplementation for accelerating return to play for athletes with high-prevalence injuries such as patellar tendinopathy (PT).

Methods

Twenty federated male athletes diagnosed with PT were randomly assigned to a Creatine (CR, n=9) or a Placebo group (PLA, n=11). CR and PLA performed a rehabilitation program consisting of a training based on eccentric contractions (declined single squat) and stretching of knee extensors and flexors daily, and 5 sessions of manual therapy and extracorporeal shock wave therapy (ESWT) over 8 weeks. In that period, participants ingested 3 g/d of CR or PLA (sucrose). Before the start (PRE), at the 4 weeks (MID), and after finishing 8 weeks (POST), jump ability was assessed using a countermovement jump (CMJ), muscle strength (5-RM test involved the injured knee), and pain (VISA-P questionnaire). A repeated measures analysis of variance (ANOVA-RM) with adjustment of Bonferroni was performed using JAMOVI statistical software (version 2.3.28).

Results and Conclusions

For both groups a progressive increase in the 5-RM test ($F=79.25$; $p<0.01$; $\eta^2p=0.74$) was observed. Pain was also reduced along the intervention ($p<0.01$; $\eta^2p=0.63$), however, only CR was reduced statistically in MID (MID: 70.2 ± 13.3 points vs PRE: 60.6 ± 9.4 points; $t=-3.66$; $p=0.03$). Also, in the CMJ test CR improved its performance from PRE (34.3 ± 4.5 cm) to MID (36.8 ± 3.79 cm; $t=-3.81$; $p=0.02$), and to POST vs MID (POST: 37.6 ± 5.4 cm; $t=-3.93$; $p=0.02$). PLA did not show any improvement in vertical jump capacity ($p>0.05$). These results showed that the enhanced vertical jump capability might be associated with a reduction in pain, but not to the maximal strength. Therefore, CR could act as an ergogenic aid in athletes with PT facilitating the transfer of strength gains to functional movements involved in sports, such as jumping.

Keywords: Dietary supplement; Exercise; Injury; Nutrition; Performance; Sport