

**2011 SCIENTIFIC CONGRESS ON MARTIAL
ARTS AND COMBAT SPORTS**

Viseu – Portugal

13th - 15th May 2011

PROCEEDINGS

Scientific Editors

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Carlos Gutiérrez-García



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**Associação para o Desenvolvimento e Investigação de Viseu
Instituto Politécnico de Viseu
Escola Superior de Educação de Viseu**

Viseu 2011

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Objectives

1. To gather researchers to promote debate around the study object of the contexts of 'martial arts', 'combat sports' or 'self-defence': combat human motricity;
2. To reflect on on-going national and foreign research work;
3. To promote the dissemination of projects in the fields concerned;
4. To call the attention to the need of developing different scientific approaches.

Main Target Groups

Researchers in the field of martial arts/combat sports (MA&CS);
Teaching and training participants in the area of MA&CS;
Higher education students and advanced level practitioners;
Heads of Organisations promoting MA&CS.

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**POLYTECHNIC INSTITUTE OF VISEU
MAIN AUDITORIUM**

CONGRESS PROGRAM INTRODUCTION

The Congress will be divided into two main blocks: (1) global approach (2) multidimensional.

The global approach on the first day will mainly focus on three areas:

- a) MA&CS object of study, systematic, institutions and research;
- b) Instructors and Coach Education processes in MA&CS;
- c) Pedagogy and Didactical knowledge.

The multidimensional block will be based on the analysis of martial arts and combat sports according to five dimensions:

- i) Physical dimension – physiological conditioning factors in physical training;
- ii) Technical dimension - biomechanical conditioning factors in technical training;
- iii) Tactical dimension –bioinformational conditioning factors in tactical training;
- iv) Psychological dimension – affective and emotional conditioning factors in psychological training;
- v) Socio-cultural and philosophical dimension – conditioning factors of norms, values and symbols.

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OXIDATIVE STRESS IN FEMALE ELITE JUDOISTS

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Key-words: Judo, Sterkowicz test, catalase, hidroperoxides.

Introduction

Judo is a sport that requires explosive and important aerobic conditioning. In addition to specific training program, judoists are subject to the restrictions on the weight of each category, which sometimes involves the use of unhealthy weight loss methods to reduce body weight. They converge, in addition to the physiological stress of sports, the stress of caloric restriction and/or use of other methods that lead to weight loss quickly. The state of the antioxidant system of these athletes might be more engaged with respect to other specialties. Given that this aspect is not well studied, our aim was to evaluate, during a specific test, markers of oxidative stress and to correct them if necessary by a specific dietary intervention.

Material and methods

In this study participated 10 elite female judoists, 26.06 ± 1.15 years old and several weight categories. The participation of the subjects was voluntary and implemented at all times the fundamental principles of the Declaration of Helsinki and the Council of Europe Convention. Participants performed Sterkowicz test and were recorded heart rate and took two blood samples of 5 ml (one at the beginning and again at 15 minutes after finishing the test). Among other parameters were measured those related to oxidative stress: plasma hidroperoxides, TBAR's and catalase activity. The results are expressed as mean ± standard deviation. The comparison of means was performed using a one-way ANOVA (SPSS 15 for Windows, SPSS Inc. Chicago,IL,USA).

Results and conclusions

Through data test (see table 1) we can conclude that the Sterkowicz test is a maximum and cause oxidative stress judoists. In addition, individual results, in some cases allowed us to make specific recommendations to athletes about the

adjustment of diet and micronutrients leading to partially alleviate the oxidative stress.

Table 1. Physiological parameters measured in elite judoists.

Parameters	Situations	Mean \pm SD
Heart rate (bpm)	Final test	177,0 \pm 4,4
	1 minute later	153,5 \pm 4,5
TBARS (nmol/ml)	Rest	3,73 \pm 0,56
	Effort	6,73 \pm 0,85*
Hidroperoxides (nmol/ml)	Rest	2,52 \pm 0,7
	Effort	3,14 \pm 0,33
Catalase (s-7mg-1)	Rest	0,168 \pm 0,018
	Effort	0,178 \pm 0,021

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