

# **The 6<sup>th</sup> International Symposium for Taekwondo Studies**

## **Global Education for a Better Taekwondo**

**June 29-30, 2017**

**Taekwondowon; Muju, Korea**

### **Important Dates**

**April 30, 2017      Abstract Submission**

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**June 29-30, 2017      Symposium Dates**

### **Organizing Partners**

The 6<sup>th</sup> International Symposium for Taekwondo Studies will be organized by the World Taekwondo Federation (WTF) and the International Association for Taekwondo Research (IATR).

### **Research Fields**

Papers will include natural science and humanities research related to Taekwondo, such as Sports Physiology, Biomechanics, Sports Medicine, the Philosophy/Pedagogy of Taekwondo, Sports Sociology, Sports Psychology, and Sports Marketing.

### **Presenter Benefits**

Approximately 50 presenters will be chosen from the submissions received for the symposium. Those presenters will be provided complimentary rooms for 3 nights/4 days on June 28-30, 2017 and meals on June 29-30, 2017.

### **Submission Information**

To participate in the symposium, presenters must submit abstracts by April 30, 2017 to Dr. John A. Johnson at [journaloftheiatr@gmail.com](mailto:journaloftheiatr@gmail.com). Abstracts, copyright forms, and registration forms (below) should be submitted together. Completed papers should be submitted at [www.jiatr.org](http://www.jiatr.org).

### **Future Publication Prospects**

Full papers received for the symposium will be considered for publication in forthcoming issues of the *Journal of the International Association of Taekwondo Research (JIATR)*. Papers are due by May 20<sup>th</sup> to be considered for publication in the June 2017 issue.

### **Abstract Guidelines**

All abstracts should follow these guidelines:

- Microsoft Word
- New Times Roman font
- 12-point font
- Single spacing throughout the paper

### Natural Science Papers

Natural science/quantitative abstracts should contain ca. 300 words. Abstracts should emphasize any new and important aspects of the study. Authors should separate abstracts into six sections: purpose, methods, results, conclusions, keywords, and references. Authors should identify 3-6 keywords that are not in the title, and they should provide a sample list of 5-10 references used in the research. Finally, authors should include any tables, figures, or other graphics used in the final paper. If Medical Subject Headings (MeSH) terms are not available for recently introduced terms, present terms may be used. Authors are requested to follow the attached example abstract.

### Humanities Papers

Humanities/qualitative abstracts should contain ca. 300 words in a single paragraph. The abstract should emphasize any new and important aspects of the study. The text should include the following information: a statement of purpose/hypothesis, methods, results, and conclusions. Authors should identify 3-6 keywords that are not in the title, and they should provide a sample list of 5-10 references used in the research. Finally, authors should include any tables, figures, or other graphics used in the final paper. If Medical Subject Headings (MeSH) terms are not available for recently introduced terms, present terms may be used.

### References

References should be listed in alphabetical order and numbered and formatted according to the United States National Library of Medicine. See these websites for examples:

#### **US National Library of Medicine**

[http://www.nlm.nih.gov/bsd/uniform\\_requirements.html](http://www.nlm.nih.gov/bsd/uniform_requirements.html)

#### **JIATR**

<http://www.jiatr.org/jiatr/index.html?gubun=2>

### Tables and Figures

Tables and figures should be numbered consecutively according to the order in which they have been first cited in the text. Data should not be repeated in the tables and figures. Figures should be prepared in black and white. Legends for the figures should be submitted on a separate sheet of paper and should be self-explanatory. When symbols, arrows, numbers, or letters are used to identify parts of the illustrations, identify and explain each one clearly in the legend. The recommended file formats for figures are: \*.jpg or \*.tif with an image resolution of 300 or 600 dpi. Photographs must be black and white glossy prints.

Tables must:

- Be numbered consecutively in Arabic numerals.
- Have a brief title.
- Include explanatory notes (e.g., MAP: mean arterial pressure) after the title if needed.
- Avoid the use of non-significant decimal places in tabular data.
- Identify statistical variations such as SD and SEM.

All figures require a descriptive caption that describes, in sentence form, the prominent details of the figure and places it in the relevant context of the manuscript.

## **Symposium Schedule**

The following is the tentative schedule for the symposium. Further details regarding the schedule will be posted at [www.jiatr.org](http://www.jiatr.org) and sent to all presenters/interested parties via email.

<b>Date</b>	<b>Time</b>	<b>Program</b>
	08:15 – 09:00	Symposium Check-in
	09:00 – 10:00	Opening Ceremony
	10:00 – 12:00	Keynote Speeches I & II
	12:00 – 13:00	Lunch
June 29 (Thurs)	13:00 – 15:45	Academic Sessions I & II
	15:45 – 16:00	Coffee Break
	16:00 – 18:00	Academic Sessions III & IV
	19:00 – 21:00	Reception Banquet
	09:00 – 09:30	Keynote Speeches III & IV
	09:30 – 11:30	Academic Sessions III & IV
June 30 (Fri)	11:30 – 12:30	Lunch
	12:30 – 14:30	IATR Round Table Meeting IATR Annual Meeting IATR Editorial Board Meeting
	14:30 – 16:00	Poster Session
July 1 (Sat)	09:00 – 15:00	TaekwondoWon Tour & Cultural Events (TBA)

## **Organizing Committee Contacts**

Dr. Jong-Kook Song	(+82) 31-201-2708
Vice-president	<a href="mailto:jksong@khu.ac.kr">jksong@khu.ac.kr</a>
Dr. Hyon Park	(+82) 31-201-2732
Secretary General	<a href="mailto:hpark@khu.ac.kr">hpark@khu.ac.kr</a>
Dr. Peter Ha	(+82) 31-201-2733
Deputy Secretary General	<a href="mailto:peterha61@yahoo.com">peterha61@yahoo.com</a>
Dr. John A. Johnson	(+82) 31-201-2708,
Deputy Secretary General	<a href="mailto:journaloftheiatr@gmail.com">journaloftheiatr@gmail.com</a>

## Aerobic and Anaerobic Capacity in Collegiate Taekwondo Athletes

**Jong Kook Song\*, Hyun Chul Jung, Hyo Jung Kang, Hyun Bae Kim**

Dept. of Taekwondo, College of Physical Education, Kyung Hee University

### ABSTRACT

**Purpose:** The purpose of the study was to determine gender-related difference of aerobic and anaerobic capacity in Taekwondo athletes.

**Methods:** Twenty five well trained male and female collegiate Taekwondo *poomsae* athletes participated in the study. They performed a graded incremental maximal exercise on treadmill and supramaximal exercise (Wingate anaerobic test) and two different taekwondo *poomsae*s (Koryo and Taebaek). The maximum oxygen uptake ( $VO_{2max}$ ), maximal pulmonary ventilation ( $VE_{max}$ ), maximal heart rate ( $HR_{max}$ ) and anaerobic threshold (AT) were measured. Blood lactate concentrations were determined during the maximal exercise and *poomsae*.

**Results:** Significant difference could be obtained for aerobic and anaerobic capacity between male and female Taekwondo athletes. Male athletes had significantly higher  $VO_{2max}$  ( $63.1 \text{ ml} \cdot \text{kg} \cdot \text{min}^{-1}$ ) and  $VE_{max}$  ( $128.5 \text{ L} \cdot \text{min}^{-1}$ ) levels than those of the female athletes ( $45.7 \text{ ml} \cdot \text{kg} \cdot \text{min}^{-1}$ ,  $78.0 \text{ L} \cdot \text{min}^{-1}$ ). However, no difference was found for  $HR_{max}$ . AT, peak power, and average power were significantly higher in the male athletes than the female athletes. Blood lactate concentrations during the Wingate anaerobic test were significantly changed from rest ( $2.06 \text{ mmol} \cdot \text{L}$ ,  $1.87 \text{ mmol} \cdot \text{L}$ ) to 5 min recovery ( $12.97 \text{ mmol} \cdot \text{L}$ ,  $11.56 \text{ mmol} \cdot \text{L}$ ) for both male and female athletes.

**Conclusions:** These findings indicate that male Taekwondo *poomsae* athletes showed higher aerobic and anaerobic capacities than female athletes. Additionally, they provide coaches and physical trainers the ability to design specific physical conditioning programs for their athletes.

**KEYWORDS:** *poomsae*, aerobic, anaerobic, blood lactate, heart rate

### References

1. Argus CK, Gill N, Keogh J, Hopkins WG, Beaven CM. Effects of a short-term pre-season training programme on the body composition and anaerobic performance of professional rugby union players. *Journal of Sports Science*. 2010;28(6):679–86.
2. Guadalupe GA, Fuentes T, Guerra B, Calbet JA. Exercise and bone mass in adults. *Sports Medicine*. 2009;39(6):439–68.
3. Markovic G, Misigoj-Durakovic M, Trninic S. Fitness profile of elite Croatian female Taekwondo athletes. *Collegium Antropologicum*. 2005;29(1):93–9.
4. Purvis D, Gonsalves S, Deuster PA. Physiological and psychological fatigue in extreme conditions: overtraining and elite athletes. *PM&R*. 2010;2(5):442–50.
5. Weber CL, Chia M, Inbar O. Gender differences in anaerobic power of the arms and legs—a scaling issue. *Medicine & Science in Sports & Exercise*. 2006;38(1):129–37.

\*Corresponding author: jksong@khu.ac.kr.

Table 1. Physical Characteristics of Subjects

	Male Athletes (n = 17)		Female Athletes (n = 8)	
	Mean	SD	Mean	SD
Career (yr)	3.50	1.82	5.00	3.24
Body Weight (kg)	62.9	5.06	52.6	5.01
Height (cm)	172.4	5.55	158.6	5.20
Percent Body Fat (%)	11.7	2.62	23.8	2.88
Fat Mass (kg)	7.3	1.71	12.6	1.95
Lean Body Mass (kg)	53.1	4.66	35.2	9.36
Bone Mineral Density (g/cm <sup>2</sup> )	1.22	0.07	1.14	0.04

Table 2. Aerobic and Anaerobic Power in Taekwondo Poomsae Athletes

	Male Athletes		Female Athletes		T-value
	Mean	SD	Mean	SD	
VO <sub>2</sub> max (ml·kg <sup>-1</sup> ·min <sup>-1</sup> )	63.1	5.31	45.7	3.28	10.29**
VEmax (L·min <sup>-1</sup> )	128.5	17.04	78.0	10.03	9.50**
HRmax (beat·min <sup>-1</sup> )	193.1	8.87	189.8	9.97	0.85
Anaerobic Threshold (ml·kg <sup>-1</sup> ·min <sup>-1</sup> )	31.4	1.79	27.4	3.99	3.53**
Peak Power (w)	689.4	114.90	485.0	73.45	5.51**
Average Power (w)	493.6	61.21	338.1	51.15	6.88**
Anaerobic Fatigue (%)	48.8	8.36	48.7	6.20	0.06
Peak Power (w·kg <sup>-1</sup> )	14.5	2.85	9.2	1.09	1.47
Average Power (w·kg <sup>-1</sup> )	10.0	3.99	6.4	0.71	1.78

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## Copyright Form

**June 29-30, 2017  
Muju, Korea**

Each author must sign the following statement.

I (we) hereby affirm that the below-named manuscript is original and has not been published, nor is it currently under review for publication elsewhere. I (we) in consideration of the acceptance of the below work for publication in the Proceedings of the 6<sup>th</sup> International Symposium for Taekwondo Studies do hereby assign and transfer to the symposium's Organizing Committee all of the rights and interest in and to the copyright of my (our) above titled work. I (we) warrant that the work has not been previously copyrighted, and that I (we) have the right to transfer copyright.

Abstract Title:

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## Registration Form

**June 29-30, 2017**

**Taekwondowon, Muju, Korea**

<b>Abstract Title</b>	
<b>Name of Presenter</b>	
<b>Full Name of First Author</b>	
<b>Full Name(s) of Contributing Author(s) (if any)</b>	
<b>Presenter's Institution</b>	
<b>Address with Postal Code</b>	
<b>Country</b>	
<b>Telephone</b>	
<b>Fax</b>	
<b>Email</b>	

- Complete the form by typing or printing clearly in English.
- Incomplete registrations forms will not be considered.
- Please make a copy of this document for your own records.

\*Check your presentation type in the table below with an X.

<b>Oral</b>	<b>Poster</b>

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