

Effect Short-term Aquarobic Exercise on DHEA-S Levels in Women

Siti Baitul Mukarromah^{1,*}, Tandiyo Rahayu², Tri Tunggal Setiawan³, Ipang Setiawan², Soegiyanto¹,
Komarudin⁴, Nguyen Tra Giang⁵

¹Laboratory of Sports Science, Faculty of Sports Science, Universitas Negeri Semarang, Indonesia

²Department of Physical Education, Faculty of Sports Science, Universitas Negeri Semarang, Indonesia

³Department of Coaching Science, Faculty of Sports Science, Universitas Negeri Semarang, Indonesia

⁴Department of Physical Education, Faculty of Sports Science, Universitas Negeri Yogyakarta, Indonesia

⁵Faculty of Physical and Military Education, Hong Bang International University, Vietnam

*Corresponding author: sitibaitul@mail.unnes.ac.id

Abstract

Dehydroepiandrosterone (DHEA) is precursor of sex steroid hormone, DHEA hormones produced by the adrenal cortex which decline in concentration with age. Decreased DHEA levels are associated with age-related disease and oxidative stress. The purpose of this study is to investigate the effect of short-term Aquarobic Exercise on DHEA-S Levels in Women. 24 females, who they had not regular exercise in their daily program, voluntarily take a share in this research. Cases of this research divided into three groups of the Aquarobic (n=12) and control group (n=12). This research performed in the form of quasi-experimental that studies the changes of biological cycle by pre-test and post-test. Blood samples were collected prior to exercise, immediately, and 1h post exercise. Independent T test and Anova was used to comprehensive analyze of data and significant level ($p=0.05$) was considered. DHEA levels significantly increased immediately post exercise, however, DHEAS levels only significantly increased in aquarobic exercise. Cortisol significantly decreased immediately post exercise, and 1 h post exercise compared to pre. There were no significant differences in resting hormone levels, non hormonal responses to exercise between training status groups. The findings suggest that aquarobic exercise can stimulate DHEA production in older women, and that hormonal responses to exercise differ between aquarobic exercise and weight training exercise.

Keywords: Hormone, BMI, Cortisol, Aquarobic