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## **PENGARUH DOSIS LATIHAN FISIK AEROBIK TERHADAP PENURUNAN INDEKS MASSA TUBUH, ASAM LEMAK BEBAS DARAH DAN KADAR LEPTIN DARAH PADA MAHASISWI UNIVERSITAS NEGERI SEMARANG**

## **PENGARUH DOSIS LATIHAN FISIK AEROBIK TERHADAP PENURUNAN INDEKS MASSA TUBUH, ASAM LEMAK BEBAS DARAH DAN KADAR LEPTIN DARAH PADA MAHASISWI UNIVERSITAS NEGERI SEMARANG**

1. Sugiharto - -->

### **Abstract**

The purpose of this study was to prove that aerobic physical exercise (APE) could decrease body mass index (BMI), blood free fatty acid (FFA), and blood leptin levels (LL). The dose chosen was 50% and 70% VO<sub>2</sub> max, with the expectation that APE at 70% VO<sub>2</sub> max would be the more effective dose. This study used the Randomized-Control Group, Pre test- Post test design, Samples were taken from population of healthy, untrained, female, 3rd semester students studying at the Public Health, Fashion Design and Culinary Study Programs, Semarang State University, fulfilling the following criteria: overweight (BMI > 25%) 18-22 years old and showing no physical abnormalities that prevent them from participating in physical exercise. From all students meeting this criteria, 24 were taken and divided randomly into 3 groups of 8 students each, i.e. group 1 (control), group 2 (APE at 50% VO<sub>2</sub> max), and group 3 (APE at 70% VO<sub>2</sub> max), For group 2 and 3 exercises were done 3 times a week for 6 weeks . For all 3 groups pre- and post test values of all 3 variables were measured and their means calculated. The difference between the pre-and-post test values, the so called "t" values and their means were then calculated. Next, the delta values were subjected to statistical analysis comprising of homogeneity, normality, Anova and paired t- test. The result of these statistical analysis showed that physical exercise at 50% VO<sub>2</sub> max was significantly more effective in reducing BMI, FFA and LL as compared to 70% VO<sub>2</sub> max, a finding contrary to the expected outcome. It seems that in untrained overweight subjects, the exercise at 70% VO<sub>2</sub> max already exceeds the anaerobic threshold so that for these subjects, the exercise became partly anaerobic.

Keyword : overweight, subjects, aerobic, physical, exercise, VO<sub>2</sub>, max, body, mass, index, free, fatty, acids, leptin.,

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