

## The Effect of Interval Exercise with Active Rest and Passive Rest To Degree of Oxidative Stress

### ABSTRACT

The purpose of the study was to determine the effect interval exercise with active rest and passive rest to degree of oxidative stress. Using “randomized pretest-posttest control group design. Samples were obtained in randomized fashion from population 124 healthy subjects between 21-22 years of age, and obtained 8 persons for each groups. They were chosen from Faculty of Sport Science, in University state of Malang. Healthy people were defined as not having a major medical illness, not smoking, no hospital admissions, no current medication, and a subjective perception of good health as determined by health questionnaire. None of the subjects received any medical (vitamin E, C) supplement and non-medical antioxidants (tomato, orange, and so forth). Blood samples were obtained from cubital veins before exercise and after exercise in eppendorf tubes. The present research was designed to determine the changes of plasma lipid peroxidation levels (expressed as malondialdehyde [MDA]) and erythrocyte SOD activity in healthy people. This type of exercise is an aerobic interval exercise by ergocycle. This exercise was executed in the morning. Laboratory examination of the variables used TBARS method in Brawijaya University. Data analysis was carried out using descriptive and inferensial statistic with statistical software SPSS version 15. Followed with pairwise comparisons statistical multivariat.

The result showed that sample characteristic data after normality test had  $p > 0.05$  indicating normality and homogeneity. Normality test with Kolmogorof-Smirnof and homogeneity test with lavene’s test, the dependent variables showed  $p > 0.05$  indicating normality and homogeneity. Result of mancova was  $p: 0.004$ , revealing difference between group (Wilk Lambda,  $p < 0.05$ ). Strongest difference shown by comparison between pretest SOD erythrocyte activity and posttest SOD erythrocyte activity in interval exercise with passive rest.

From stastical analysis, result showed the difference of rate MDA plasma post test between active group of rests interval exercise and passive rests interval exercise have value  $p = 0.153$ . This mean that there are no difference of influence which significant between group of interval exercise with active rest and interval exercise with passive rest. While difference of enzymatic activity SOD erythrocyte between group of interval exercise with active rest and interval exercise with passive rest have value  $p = 0.004$ . Thereby inferential that there are difference is influence which significant between group of interval exercise with active rest and interval exercise with passive rest

This research result is can give scientific information contribution for concept development effort and form of athletics practice which evaluated from oxidative stress parameter.

**Keyword:** *Interval exercise, active rest, passive rest and degree of oxidative stress*