ABSTRACT
THE EFFECT OF ISOMETRIC EXERCISE MODEL ON BLOOD GLUCOSE IN DIABETIC MICE (*Musmusculus*)

A True Experiment Study

By: Sonia Hadiyanti

Based on the latest research, exercise had significant effect to decrease blood glucose. The aimed of this study was to investigate the effect of isometric exercise model on blood glucose in Diabetic Mice (*Mus musculus*).

This research was used a true experimental study with the randomize post-test only control group design. The sample was male mice (*Mus musculus*) in 20-27 grams weight. 27 male mice were divided into three groups; the first group was normal group (control) that injected by NaCl as placebo, the second group was diabetic mice and the third group was diabetic mice with exercise. Both second group and third group were injected by streptozotocin (STZ) to induce Diabetes Mellitus. After 48 hours injected, all groups were given oral glucose (Dextrose-40% or D40). One hour after they given by D40, the third group was treated by isometric exercise used treadmill for 23.31 minutes with 21 cm/second speed and 0° elevation angle. Then the blood samples of all groups were taken to measure the blood glucose level. Data were analyzed by One Kolmogorov-Smirnov test, ANOVA test, and Least Significance Difference (LSD) with significance level of $\alpha \leq 0.05$.

The result of One Kolmogorov-Smirnov test were $p=0.94$ in normal group, $p=0.50$ in diabetic group, and $p=0.19$ in diabetic with exercise group. The result of ANOVA test was $p=0.08$. The result of LSD for blood glucose revealed was $p=0.23$ for diabetic group and diabetic with exercise group. The researcher had an assumption that probably it happened because of in second group there were two mice that had normal blood glucose levels and in the third group the initial blood glucose levels were unknown, hence they probably could had normal blood glucose levels too.

It can be concluded that there is no effect of isometric exercise to decrease blood glucose. Further research should investigate more about the frequency and intensity of isometric exercise that could has effect to decrease blood glucose.

Keyword: Isometric exercise, blood glucose level, Diabetes mellitus, mice