

## ABSTRACT

### EFFECT OF TREADMILL TREATMENT AGAINST NUMBER AND SPERM MOTILITY OF OBESE MICE (*MUS MUSCULUS L.*)

By

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**Background:** The prevalence of obesity is increasing in both the developed and developing countries. In developed countries, obesity has become an epidemic by contributing 35% of the morbidity and accounted for 15-20% of deaths. Obesity can spur cardiovascular disorders, renal, metabolic, and even the quality of spermatozoa. The effect on sperm parameters are also influenced by several other factors, such as lifestyle. With the development of technology there are negative impacts, one of which humans rarely make physical activity, lifestyle changes, and excessive intake of nutrients. This study aimed to see if there was an effect of exercise using treadmill with the number and motility of spermatozoa obese mice.

**Methods:** Samples are 24 male mice were divided into 4 groups: normal control group (K1), a control group of obesity (K2), the treatment group (P1) mice obese by treatment treadmill 1 times a day for 10 minutes, and the treatment group (P2) obese mice treated with treadmill 2 times a day each 10 minutes. K1 given the standard feed and drink ad libitum, while K2, K3, and K4 fed high fat high protein (TLTP) and drink ad libitum.

**Results:** The mean number of spermatozoa in group K1, K2, P1 and P2 are respectively  $19.44 \pm 1.90$ ;  $13.70 \pm 4.16$ ;  $27.46 \pm 3.27$ ;  $12.50 \pm 2.22$  million / ml. While the average percentage of motility in the same group respectively were  $42.55 \pm 19.46$ ;  $23.60 \pm 12.62$ ;  $63.96 \pm 14.30$ ;  $50.68 \pm 14.95$ . Analysis by using One-Way Anova showed significant differences, namely  $p = 0.00$  for the number of spermatozoa and  $p = 0.002$  for sperm motility.

**Conclusion:** Treatment treadmill 1x10 minutes a day can increase the number and motility of spermatozoa obese male mice.

**Keywords:** number of sperm, motility of sperm, obesity, treadmill