

# PENGARUH RENANG BERBAGAI INTENSITAS TERHADAP KADAR KOLESTEROL TOTAL PADA TIKUS (*Rattus norvegicus*) MODEL OBESITAS

## Abstrak

**Pendahuluan:** Obesitas berkorelasi dengan kondisi kolesterol total. Olahraga aerobik dapat menurunkan kadar kolesterol total melalui penurunan kadar LDL-C dan peningkatan HDL-C. Penelitian ini bertujuan untuk mengetahui pengaruh renang dengan berbagai intensitas terhadap penurunan kadar kolesterol total tikus (*Rattus norvegicus*) galur Wistar model obesitas.

**Metode:** Penelitian ini menggunakan penelitian eksperimental murni dengan desain *posttest-only with control group*. Tikus sebanyak 20 ekor dibagi menjadi 5 kelompok secara acak. Kelompok K II (kontrol positif), P I (renang intensitas ringan), P II (renang intensitas sedang), dan P III (renang intensitas berat) diinduksi *High Fat Diet* selama 11 minggu. Perlakuan renang dilakukan setiap hari selama 14 hari. Kadar kolesterol total diukur menggunakan metode CHOD-PAP dan dianalisis dengan uji *One Way ANOVA*. Nilai signifikan adalah  $p < 0,05$

**Hasil:** Rerata kadar kolesterol total pada setiap kelompok yaitu kelompok K I (kontrol negatif)=145,25 mg/dL; kelompok kontrol positif=244,25 mg/dL; kelompok renang intensitas ringan=199,75 mg/dL; kelompok renang intensitas sedang=164,75 mg/dL; kelompok renang intensitas berat=212,25 mg/dL. Melalui Uji *Post Hoc* LSD diketahui perbedaan signifikan antara kelompok K I dengan kelompok K II, P I, P III, antara kelompok K II dengan kelompok P I, P II, P II, antara kelompok P I dengan kelompok P II, serta antara kelompok P II dengan P III.

**Kesimpulan:** Perlakuan renang berbagai intensitas memiliki pengaruh signifikan dengan intensitas sedang adalah yang paling signifikan menurunkan kadar kolesterol total tikus Wistar model obesitas.

**Kata Kunci:** kolesterol total, obesitas, renang berbagai intensitas

## **THE EFFECT OF SWIMMING AT DIFFERENT INTENSITIES ON TOTAL CHOLESTEROL LEVELS IN OBESE RATS (*Rattus norvegicus*)**

### **Abstract**

**Introduction:** Obesity is correlated with total cholesterol levels. Aerobic exercise can lower total cholesterol levels by lowering LDL-C levels and increasing HDL-C levels. This study aimed to determine the effect of swimming at different intensities on the reduction of total cholesterol levels in obese Wistar rats.

**Methods:** This study used a true experimental study with a posttest-only control group design. Twenty rats were randomly divided into 5 groups. Groups K II (positive control), P I (low-intensity swimming), P II (moderate-intensity swimming), and P III (high-intensity swimming) were induced with High Fat Diet for 11 weeks. Swimming treatment was performed for 14 days. Total cholesterol levels were measured using the CHOD-PAP method and its analyzed using the One Way ANOVA test. The significant value was  $p < 0.05$ .

**Results:** The mean total cholesterol levels in each group were K I (negative control)=145.25 mg/dL; K II=244.25 mg/dL; P I=199.75 mg/dL; P II=164.75 mg/dL; P III=212.25 mg/dL. Through the LSD Post Hoc Test, there were significant differences between K I with K II, P I, and P III, between K II with P I, P II, and P III, between P I with P II, and between P II with P III.

**Conclusion:** There is a significant effect of swimming at different intensities, especially the moderate intensity on total cholesterol reduction in obese Wistar rat models

**Keywords:** obesity, swimming at different intensities, total cholesterol