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Journal Homepage



## The Effect of Exercise Volume on Depressive-Related Behaviors and Levels of Brain-Derived Neurotrophic Factor and Serum Testosterone Levels

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### 1. Round 1

#### 1.1 Reviewer 1

Reviewer:

The introduction mentions various forms of exercise but lacks specificity on why swimming was chosen. Add a sentence explaining why swimming is particularly relevant for this study (e.g., due to its known impacts on neurogenesis and BDNF levels).

The statement "among various exercises aerobic exercises such as swimming, cycling, and hiking have a more significant effect on mood and depression treatment" needs citations. Provide references for each type of exercise mentioned.

Mention the rationale behind choosing the suspension test and its relevance to measuring depression-related behaviors in mice.

The process of brain extraction is briefly mentioned. Describe the method used for brain extraction and its preservation in more detail.

Include the rationale for choosing the Shapiro-Wilk test and Levene's test for normal distribution and variance equality, respectively. Explain why these tests were appropriate for this study.

The table could be more informative if it included p-values for the differences between groups. This would provide immediate statistical insights without referring to the text.

In Table 2, ensure all statistical values (F, df, Sig) are clearly defined in a footnote to enhance understanding for readers unfamiliar with these terms.

Author revised the manuscript and uploaded the updated document.

## 1.2 Reviewer 2

Reviewer:

Clarify the rationale for choosing NMRI mice and how their characteristics are relevant to the study. Mention if previous studies have used NMRI mice for similar research.

The temperature and light conditions are stated twice. Remove the redundancy and combine the details for clarity.

Specify if the depth and duration of swimming sessions were the same for both short-term and long-term training groups from the second to the fourth week, or if there were any differences.

Provide more details on how the "wave maker motor" was used to prevent floating and its potential impact on the results.

The sucrose consumption test description is unclear. Explain how "reluctance to consume the sucrose bottle" is quantified and define the threshold for depressive behavior.

The discussion should compare the findings with those of previous studies in more detail. Mention if the magnitude of BDNF increase observed in long-term training is consistent with past research.

Address the contradictory findings from Liu and Chang (2008) in more depth. Discuss potential reasons why your study found different results regarding high-intensity exercise and BDNF levels.

The conclusion is overly broad. Summarize specific findings more concisely, such as the significant impact of long-term training on BDNF and testosterone levels, and the non-significant impact of short-term training on BDNF levels.

Author revised the manuscript and uploaded the updated document.

## 2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.