Jentashapir Journal of Cellular and Molecular Biology
Volume 15 · Issue 3 · e149397

OPEN PEER REVIEW

The Effect of Increasing Aerobic Exercise on the Expression of NF-κB and COX-2 Genes in Heart Tissue of Rats Under a High-fat Diet

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SUBMITTED	REVISED	ACCEPTED	DOI
18 Jun 2024	24 Jul 2024	26 Jul 2024	10.5812/jjcmb-149397

About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

1 comment · 25 Jun 2024

Referee 1 Reviewer

MINOR REVISION 25 Jun 2024

Abstract part
Line 8: Write the total number of groups studied and the number of rats in each group.

Result part
Line 88: Instead of “mice”, write rat or animals.
Line 89: Correct ($p < 0.05$) to $p > 0.05$.
Line 89: Correct “mice” to rat or animals.
Line 91: Correct the HFD and IAE groups to the HFD + IAE group.
Mark the p-values (significant differences between groups) on the graph of weight changes.
In the results section, write the obtained p-values shown in figures 2 and 3 (for example, $p< 0.05$, $p <.0.01$ and $p < 0.001$). Write accurately.
Line 99: Correct in the HFD to in the rats of the HFD+ IAE group.
Line 102: Correct ($p < 0.05$) to $p > 0.05$.

In discussion part
Line 112: Correct groups to group.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear editor
All comments are considered and highlighted in the revised file.

Reviewer# 1
1- In the abstract, the sentence (The program followed the principle of gradual overload and was based on the maximum speed of the rats) is written 2 times. please correct it.
.**Response:** it has been corrected

In the abstract, write the full name of COX-2 and NF-κB in line 7 because you say their -2 .name for the first time in the manuscript
.**Response:** it has been corrected

3-In the introduction, line 32, you wrote (The Nuclear factor kappa B (NF-κB) regulates the expression of anti-inflammatory and 32 inflammatory cytokines.) say more about this. How do you justify this dichotomy?
Response: it has been corrected. The Nuclear factor kappa B (NF-κB) regulates the expression of inflammatory cytokines and anti-inflammatory genes during the resolution of inflammation in vivo.

4-In the introduction, line 47, you wrote (there are contradictory results regarding the impact of regular aerobic activity on COX-2 and NF-κB genes, which are involved in inflammatory pathways). Briefly write about these contradictory results.
Response: These controversial results may be due to the difference in the duration of the training period or the intensity of the exercises used.

5-In Materials and Methods, in line 67, why did you elevate the duration and speed of the training program each week? I mean why did you choose increasing aerobic exercise instead of constant aerobic exercise?
Response: Since our animals were obese, to prevent injury and the occurrence of overtraining syndrome, we used increasing training.

6-Why did you collect the heart tissue 48 hours after the experiment? Why didn't you do it Immediately after the experiment?
Response: At least 48 hours of training are required to eliminate the short-term effect of training on the variables.

7-In the results, line 101, you wrote (No notable difference in the expression of NF-κB and COX-2 genes was between HFD + IAE and the healthy control group.) It means that with only 6 weeks of exercise, the expression of genes completely reached the base level and there was no difference. please explain more.
Response: The result section was written based on the analysis of our obtained data.

8-In discussion, line 118, write briefly about your results before this sentence (In contrast to our results).

Response: It has been revised. The results of our research showed that increasing aerobic exercise decreases the expression levels of COX-2 and Nf-kB genes in the heart tissue of rats under high-fat diet.

9-In the discussion, line 136, you wrote (Also, aerobic training increased NF-κB protein levels in the prostate tissue of healthy mice.) Is it not contradictory to the findings? According to your data, it is expected to decrease. please explain.
Response: In Saed Mocheshi et al.'s study, each training session lasted 45 minutes, and healthy .mice were used, while our training session was 20 minutes for obese rats
The title is complete and specifies the topic of the research.
The text of the article is clear and understandable.
Most of the references are new.
If the questions are answered accurately and correctly and the ambiguities are resolved, the article is acceptable.

Reviewer# 2
Abstract part
Line 8: Write the total number of studied groups and the number of rats in each group.
Response: it has been mentioned in the material and methods.

Result part
Line 88: instead of “mice” write rat or animals.
Response: it has been revised.

Line 89: correct ($p < 0.05$) to $p > 0.05$.
Response: it has been revised.

Line 89: correct “mice” to rat or animals.
Response: it has been revised.

Line 91: correct the HFD and IAE groups to HFD + IAE group.
Response: it has been revised.

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Mark the p values (significant differences between groups) on the graph of weight changes.
Response: it has been revised.

In the result part write the obtained p- values shown in figures 2 and 3. (for example $p< 0.05$, $p <.0.01$ and $p < 0.001$) Write accurately.
Response: it has been revised.

Line 99: correct in the HFD to in the rats of HFD+ IAE group
Line 102: correct ($p < 0.05$) to $p > 0.05$.

Response: it has been revised.

In discussion part
line 112: correct groups to group.
Response: it has been revised.

2 Revision 1

0 comments

No public comments in this round.