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Effect of Eight Weeks of High-Intensity Interval Training (HIIT) on Serum Asprosin Levels and Body Composition in Overweight and Obese Men

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1. Round 1

1.1 Reviewer 1

Reviewer:

In the Introduction, the statement "the prevalence of overweight and obesity was nearly 38% in 2020 and is projected to escalate 42% by 2025, 46% by 2030, and 51% by 2035" requires clarification regarding whether these percentages refer to the global adult population, combined overweight/obesity prevalence, or obesity alone. Greater precision is needed because the epidemiological interpretation changes substantially depending on the denominator used.

The paragraph beginning with "Asprosin travels to the liver, where it triggers gluconeogenesis via a cAMP-mediated pathway" provides a useful mechanistic explanation; however, the manuscript would benefit from a more explicit conceptual framework linking HIIT-induced metabolic adaptations to potential reductions in circulating Asprosin. At present, the rationale connecting the intervention and primary outcome remains somewhat indirect.

In the Results section, the sentence "A significant decrease was observed in weight, fasting blood glucose, x. and also HDL-C increased" contains an obvious typographical or editing error ("x."). This sentence should be corrected and carefully revised because it currently interrupts interpretation of the findings.

The Results section states that “no adverse events were reported,” yet the flowchart indicates participant attrition due to irregular participation and non-attendance. The authors should clarify whether any exercise-related discomfort, musculoskeletal complaints, or minor adverse events occurred during the intervention, even if they did not result in withdrawal.

Author revised the manuscript and uploaded the updated document.

1.2 Reviewer 2

Reviewer:

The authors state that “this study employed a quasi-experimental design with a pretest-posttest control group structure,” yet participants were “randomly assigned” to groups using Randomizer software. These two descriptions are inconsistent. If true random allocation was performed, the study should be described as a randomized controlled trial rather than a quasi-experimental study. The methodological classification should be corrected throughout the manuscript.

In the Methods section, the authors report a G*Power calculation based on an expected effect size of f = 0.25. However, no justification or reference is provided for selecting this effect size. The manuscript should indicate whether this estimate was derived from previous Asprosin-related studies, pilot data, or conventional statistical assumptions.

The description “participants provided written informed consent, completed a general health questionnaire, and submitted a 24-hour dietary recall” is insufficient to address dietary confounding. Since body composition and adipokine concentrations are strongly influenced by caloric intake, the authors should clarify whether dietary intake was reassessed during the intervention and whether participants received standardized nutritional instructions.

The HIIT protocol presented in Table 1 includes exercise intensities ranging from 100–140% vVO_2max. The authors should provide a stronger physiological justification for prescribing intensities exceeding 100% vVO_2max in overweight and obese sedentary adults, particularly regarding safety, feasibility, and participant adherence.

In the Methods section, exercise intensity monitoring relied on the Borg Rating of Perceived Exertion scale. Given that the intervention was prescribed relative to vVO_2max, the manuscript should explain whether heart rate monitoring was also used to verify exercise intensity. Reliance solely on RPE may compromise precision in exercise dose quantification.

The sentence “Blood samples were drawn ... both at baseline and 48 hours after the final training session” requires further justification. Since acute exercise can transiently alter adipokines and metabolic markers, the authors should explain why a 48-hour washout period was selected and cite supporting literature demonstrating that this interval is sufficient to assess chronic adaptations rather than acute exercise effects.

The statistical analysis section reports the use of ANCOVA; however, the manuscript does not clearly identify the covariate included in the model. Since ANCOVA results are central to the study conclusions, the authors should explicitly specify the covariate(s), justify their inclusion, and report the assumptions tested for ANCOVA (e.g., homogeneity of regression slopes).

Author revised the manuscript and uploaded the updated document.

2. Revised

Editor’s decision after revisions: Accepted.
Editor in Chief’s decision: Accepted.