Reviewer 1:

Introduction: More detailed exploration of exercise and metabolic health is needed. How does resistance training compare to other training types. What sort of resistance training protocols have been used. Also need a stronger exploration of what is meant by metabolically unhealthy as this seems to be a catch all when what is predominantly being looked at in the paper is fat metabolism. A more detailed introduction to the full topic area is needed.

Methods: The collection of resistance training data seems to simplistic to me. Why was no attempt taken to record the intensity of sessions since it is well established that exercise intensity is a key variable for metabolic adaptation to exercise. Was any attempt made to determine the extent of cardiovascular work carried out in visits to the gym as this will have a major impact on metabolic health. Was any attempt made to control for job type.

Results: No presentation of blood pressure data

Overall: Unfortunately I do not see the novelty in what has been done. I do not see what new findings you are adding to the broader literature on exercise and health. Therefore I cannot recommend publication at this time.

ANSWER:

In this new version of the article, we seek to respond to the suggestions made to improve the introduction: we have included a brief explanation of what it means and characterizes the metabolically unhealthy phenotype (MUH); highlight the benefits of resistance training (RT) to improve cardiometabolic health in menopausal women, considering the benefits for body composition and lipid profile; and, we emphasize the innovative nature of this work, since there are no studies on the relationship between the practice of RT, body composition, lipid profile and metabolic phenotypes in menopausal women.

Regarding the suggestion for more detail on the practice of physical exercises and cardiometabolic health, we chose to keep this content in the discussion section of the submitted article, as can be seen on pages 11 and 12.

Regarding the methods, we understand that intensity is one of the main responsible for the metabolic adaptations related to the practice of RT, however, we consider the recommendation of the World Health Organization (2020) which only addresses the weekly frequency for the practice of RT . As a way of deepening the discussion and complementing the research content, we also evaluated the time in years and weekly of practice, as performed by previous and recently published studies (Burrup et al, 2018; Brelhentin et al, 2021).

In this new version of the article, we seek to detail a little more about the RT practice of the study participants based on the recommendations made by the ACSM (2009) and referencing recently published articles that used similar methods to assess the RT practice in different populations (Burrup et al, 2018; Brelhentin et al, 2021).

Although we have not evaluated the intensity of the RT practice from a recall or performed any procedure to assess its impact on the extent of cardiovascular work, as

questioned, we believe that the analysis of metabolic and body composition variables as well as their relationship with different volumes of RT performed in the present study, can complement the scientific literature on this topic.

Regarding the results, we do not present more detailed data on blood pressure since we propose to evaluate the dose-response relationship of resistance exercise on lipid profile, body composition and metabolic phenotypes. Information about this variable as well as blood glucose were used to determine the prevalence of MH and MUH phenotypes, as used in the Comorbidity Criteria. Thus, we present information on these variables only in the sample characterization table (Table 1), describing them in the total sample and in the MH and MUH groups.