Subject: "Study on the Association between Dietary Inflammatory Index and Sarcopenia in the Elderly"

Dear Editor,

Thank you for giving us the opportunity to revise our manuscript entitled Study on the Association between Dietary Inflammatory Index and Sarcopenia in the Elderly. We sincerely appreciate the time invested by the editors and reviewers, as well as their insightful comments. We have carefully addressed all the issues raised, and the revisions made to the manuscript have been highlighted in red for your convenience.

Below is our point-by-point response to each comment.

Reviewer 1

This article explored the association between DII and sarcopenia in the elderly. It is the opinion of the review that this article would benefit for the authors to consider the following points.

1.The abstract provides substantial amount of detail that distracts from the key findings of the study. I suggest refining the abstract to be more concise and highlight the key findings relating DII with sarcopenia.

Response to Comment 1:Thank you for your valuable suggestion. We have carefully revised the abstract to enhance conciseness by removing redundant details. The revised version now emphasizes the core findings regarding the association between the Dietary Inflammatory Index (DII) and sarcopenia, ensuring the key results are prominently presented. The revised abstract has been attached to the manuscript with red highlights for easy identification.

2.It is the opinion of the reviewer that this article would benefit from an extensive spelling, grammatical and referencing review and amendment.

Response to Comment 2:Thank you for your insightful comment. We have thoroughly revised the manuscript with respect to spelling, grammar, and referencing formats. Specifically, we aligned the revisions with the guidelines and standards of the target journal by carefully referring to its official publications. All identified issues have been addressed to ensure the accuracy and (normativity) of the manuscript.

3.It is the opinion of the reviewer that the preface requires attention, the current format and information provided does not highlight why this study should be conducted. The DII information is not needed and more information is required to describe why diets inflammatory effect may have an influence on sarcopenia. What is the pathophysiology of the disease that links inflammation with progression? What has been done in this space specifically exploring the influence of DII on sarcopenia? What other contributing factors are there to the progression of sarcopenia?

Response to Comment 3:Thank you for your constructive feedback on the preface. We have thoroughly revised this section to address the concerns raised:

We have added and highlighted (in red) content elaborating on the potential mechanisms by which dietary inflammatory effects influence sarcopenia, with a specific focus on the pathophysiological links between inflammation and sarcopenia progression.

We have supplemented a critical review of existing literature regarding the association between DII and sarcopenia, summarizing previous research findings in this field.

We have also expanded on other key contributing factors to sarcopenia progression to provide a more comprehensive background.

The revised preface now clearly articulates the rationale for conducting this study, which aims to explore how DII affects sarcopenia and provide a theoretical basis for its prevention.

All revisions are marked in red in the manuscript for your convenience.

4.The calculation of the DII is not entirely clear. It also appears your range of total score presented is not correct with the reported range from the original validity paper.

Response to Comment 4:Thank you for the reviewer's feedback regarding the lack of clarity in the description of the DII calculation method and the potential misunderstanding about the score range. In response to your suggestions, we have made detailed revisions and clarifications in the manuscript (Methods section), as outlined below:

（1）. Detailed steps of the DII calculation method have been explicitly supplemented:

Our calculation strictly follows the standard method established by Shivappa et al. The revised manuscript now fully includes the following step-by-step calculation process:

Step 1 (Data acquisition and nutrient calculation): Individual food intake data were collected using a semi-quantitative food frequency questionnaire (SFFQ) and converted into daily nutrient intakes based on the China Food Composition Table (Standard Edition), 6th edition.

Step 2 (Calculation of standardized Z-scores): The individual daily intake of each nutrient was compared with the mean and standard deviation of the corresponding nutrient from a global dietary reference database to calculate the standardized

Z-score using the formula: Z = (Individual intake - Global mean intake) / Global standard deviation.

Step 3 (Conversion to a symmetrically distributed centered proportion): To correct for the skewed distribution of dietary data, each Z-score was converted to a cumulative probability (P) using the standard normal cumulative distribution function. This was followed by a linear transformation to obtain the centered proportion = P × 2 - 1. This step ensures that the centered proportion for each nutrient is normalized to a symmetric range of -1 (representing the lowest intake) to +1 (representing the highest intake), with the zero point representing the global mean intake level. (It is important to clarify that this range of -1 to +1 specifically refers to the "centered proportion" for each nutrient, not the final overall DII score.)

Step 4 (Calculation of the overall DII score): The centered proportion for each nutrient was multiplied by its literature-derived "food parameter-specific inflammatory effect score" (positive weights for pro-inflammatory components, negative weights for anti-inflammatory components) to obtain the component-specific DII score. Finally, the component-specific scores for all nutrients considered were summed to yield the individual's overall DII score.

（2）. Clarification regarding the total score range:

We fully agree with the reviewer's point and align with the original validation paper. The description of the score range in the initial manuscript may have caused confusion. We hereby solemnly clarify:

The overall DII score derived from the original DII method has no strict theoretical upper or lower limit. Its actual range depends on the number of nutrients included in the study and their respective inflammatory effect weights; therefore, it typically exceeds -1 to +1.

The -1 to +1 range mentioned in Step 3 specifically refers to the "centered proportion" obtained for each nutrient during the intermediate calculation process. This is an intermediate variable used to standardize intake levels to a comparable scale. It does not represent the range of the final overall DII score.

We have explicitly included this key clarification in the revised calculation section to prevent reader misunderstanding.

We believe the above supplementary explanations and clarifications have fully addressed the issues raised by the reviewer. All revised content has been clearly marked in the manuscript. Thank you for your review and valuable feedback.

5.The methods need to describe all methods undertaken in the study. How do you identify/diagnose sarcopenia? All results presented must be described in the methods section as to how this data was collected.

Response to Comment 5:Thank you for your valuable feedback. We have comprehensively supplemented and revised the Methods section to address the raised concerns:

Sarcopenia Diagnosis Criteria: Detailed diagnostic standards for sarcopenia have been added (marked in red), including specific assessment indicators and diagnostic procedures in line with relevant guidelines.

Data Collection Procedures: For all results presented in the study, the data collection processes have been fully described. This includes the methods, tools, and steps for collecting demographic, clinical, dietary, and other relevant data (all revisions are highlighted in red in the "Objects and Methods" section).

Please refer to the revised manuscript for specific details of the revisions.

6.I do not believe the results presented are suitable for the study aim however, this may be because I am unaware what data was collected as it is not described in the methods.I recommend describing Sarcopenia diagnosis and aligning this with the Asian Working Group in sarcopenia definition.

Response to Comment 6:Thank you for your feedback. We apologize for the lack of clarity in the initial Methods section, which may have led to the misunderstanding regarding the alignment between results and the study aim.

We have supplemented the detailed diagnosis criteria for sarcopenia in the "Objects and Methods" section (marked in red), strictly aligning with the definition and diagnostic standards proposed by the Asian Working Group for Sarcopenia (AWGS).

We have also comprehensively described all data collected in the study, including demographic characteristics, clinical indicators, dietary intake data, and sarcopenia-related assessment results, to clarify how the results support the study aim.

The revised content is highlighted in red in the manuscript for your reference.

Reviewer 2

The manuscript entitled “A study on the association between dietary inflammatory index and sarcopenia in elderly people” addresses an important and timely topic in the field of geriatric nutrition and public health. The relationship between diet-related inflammation and sarcopenia is of growing research and clinical interest, and the authors have collected valuable data from a large elderly population sample. Overall, the study is well-structured and has potential for publication; however, several methodological clarifications and minor revisions are required to enhance the rigor and clarity of the work.

Major

1. Please specify which measurements where performed to investigate sarcopenia. Which measurements where applied to estimate muscle strength and physical performance?

Response to Comment 1:Thank you for your feedback. We apologize for the lack of clarity in the initial Methods section, which may have led to the misunderstanding regarding the alignment between results and the study aim.We have supplemented the detailed diagnosis criteria for sarcopenia in the "Objects and Methods" section (marked in red), strictly aligning with the definition and diagnostic standards proposed by the Asian Working Group for Sarcopenia (AWGS).

The revised content is highlighted in red in the manuscript for your reference.

2. Authors referred that they indicate 194 patients with sarcopenia – this include patients with severe sarcopenia and pre-sarcopenia?

Response to Comment 2:Thank you for your inquiry. According to the diagnostic criteria of the Asian Working Group for Sarcopenia (AWGS) adopted in this study (detailed in the revised Methods section, marked in red), the 194 patients identified as having sarcopenia refer to those who met the formal sarcopenia diagnosis. The study did not further subdivide them into pre-sarcopenia or severe sarcopenia subgroups.

The specific diagnostic criteria and classification principles have been clearly described in the "Objects and Methods" section for your reference.

3. Although PSQI is included in the analysis, the Methods section does not explain how the questionnaire was administered or scored. Include details about the number of components, total score range, and cutoff value for poor sleep quality (e.g., >5).

Response to Comment 3:Thank you for your valuable reminder. We have supplemented detailed information about the Pittsburgh Sleep Quality Index (PSQI) in the Methods section (marked in red), including:

The administration procedure of the questionnaire;

Specific scoring criteria, including the number of components (7 components: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction);

Total score range (0–21) and the cutoff value for poor sleep quality (a total score > 5 indicates poor sleep quality).

Please refer to the revised "Objects and Methods" section for detailed content.

Minor

1. A reference for the Asian Working Group for Sarcopenia (AWGS) criteria should be provided. Please ensure that the most recent version (e.g., AWGS 2019) is cited and that cutoff values are consistent with it.

Response to Comment 1:Thank you for your reminder. We have supplemented the reference for the Asian Working Group for Sarcopenia (AWGS) diagnostic criteria in the Methods section (marked in red). The most recent version (AWGS 2019) is cited, and all cutoff values used in the study are consistent with this guideline.

Please refer to the revised manuscript for the specific reference and related details.。

2. Number of participants recommended to referred on the beginning of the methods

Response to Comment 2:Thank you for your suggestion. We have supplemented the

sample size information at the beginning of the Methods section (marked in red). Specifically, the sample size was calculated prior to the study, and a total of 1,370 participants were ultimately surveyed.
Please refer to the revised "Subjects and Methods" section for details.
3. Please ensure that the manuscript complies with the journal's guidelines and has the proper formation.
Response to Comment 3:Thank you for your reminder. We have carefully studied the guidelines on the journal's official website and comprehensively revised the manuscript to ensure it complies with all the journal's formatting requirements, including but not limited to article structure, reference citation style, figure/table layout specifications, and word count limits. All adjustments have been made in strict accordance with the journal's regulations. Should there still be any formatting oversights in the manuscript, we sincerely request the editor to point them out, and we will rectify and improve them promptly. We sincerely appreciate your understanding and guidance.。

Thank you again for your valuable guidance. We believe that the above revisions have properly addressed all the issues raised and enhanced the clarity and rigor of our manuscript. We look forward to your favorable consideration of the revised manuscript.

Sincerely,

PING TANG