

# Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders: a systematic review of observational studies

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Handling editor:

Michal Heger

*Department of Pharmaceutics, Utrecht University, the Netherlands*

*Department of Pharmaceutics, Jiaxing University Medical College, Zhejiang, China*

Review timeline:

Received: 7 June, 2022

Editorial decision: 1 July, 2022

Revision received: 20 July, 2022

Editorial decision: 27 July, 2022

Revision received: 3 August, 2022

Editorial decision: 12 August, 2022

Published online: 27 September, 2022

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1<sup>st</sup> Editorial decision

01-July-2022

Ref.: Ms. No. JCTRes-D-21-00094

Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders:

A systematic review of observational studies

Journal of Clinical and Translational Research

Dear Mrs., Pereira,

Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to reconsider my decision.

For your guidance, reviewers' comments are appended below.

If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript. Also, please ensure that the track changes function is switched on when implementing the revisions. This enables the reviewers to rapidly verify all changes made.

Your revision is due by Jul 31, 2021.

To submit a revision, go to <https://www.editorialmanager.com/jctres/> and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely

Michal Heger  
Editor-in-Chief  
Journal of Clinical and Translational Research

Reviewers' comments:

Reviewer #1: Review manuscript Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders: A systematic review of observational studies

The above-mentioned manuscript provided a comprehensive review of depression, anxiety, and sleep disorders and their association with dietary total antioxidant capacity. This is an area of research that has growing interests and the review was nicely written and conclusions were made with convincing evidence. To certify a good publication, I have some suggestions:

The study presents a small sample size and the data collection was conducted in 2020 October - November. In the opinion of this referee, the authors should perform a new search in order to collect new articles and include them.

It is suggested to discuss the part of oxidative stress in more detail. Authors are advised to cite this important article <https://doi.org/10.1155/2020/2972968>

Line 22, pg 7: It would be helpful to review the available evidence from studies examining the link between dTAC and anti-inflammatory effects. In addition, the link between inflammation and oxidative stress should be better explained. In this regard, the above-suggested reference could be useful, at least for depression outcome.

Line 30, pg 7: When the authors say "In addition, to anti-inflammatory effects, consumption of certain fruits and dark green vegetables may be related to increased melatonin concentrations". This affirmation should be referenced and the mechanisms discussed.

In addition to present relevant evidence, it would also be helpful to discuss how antioxidants display effects on the different mental disorders studied here. It seems too much generic to discuss the same mechanism for all of them.

Line 55, pg 4: please remove the dot after "adult".

Table 1: the first column can be listed alphabetically. Furthermore, it is not necessary to separate different studies, as they are already shown in the text.

Tables 2 and 3: these tables should be combined in one.

It would be helpful to have some more in-depth discussion regarding the limitations of current research and the challenges ahead.

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Authors' response

Editor-in Chief

Journal of Clinical and Translational Research

Juiz de Fora, 20 July, 2021

Dear Dr. Michal Heger:

Re: Manuscript reference No. JCTRes-D-21-0009

Thank you very much for reviewing our manuscript entitled “Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders: A systematic review of observational studies”. We also greatly appreciate the reviewer for their comments and suggestions for improve the article. Please find attached a point-by-point response to the reviewer’s questions. We hope the revised version is now suitable for publication and we look forward to hearing from you in due course.

Thank you for your time and consideration

Sincerely,

The Authors.

We appreciate the reviewer's comments. Following are our point-by-point responses:

### **Editor and reviewer responses**

**Question 1:** The study presents a small sample size and the data collection was conducted in 2020 October - November. In the opinion of this referee, the authors should perform a new search in order to collect new articles and include them.

**Answer 1:** We appreciate the suggestion. We redid the search for articles in the databases and updated the text (lines 93, 124 and figure 1).

**Question 2:** It is suggested to discuss the part of oxidative stress in more detail. Authors are advised to cite this important article <https://doi.org/10.1155/2020/2972968>

**Answer 2:** We appreciate the excellent manuscript suggestion. More details regarding oxidative stress were added and the suggested manuscript was referenced in the text (line: 206 and 210).

**Question 3:** It would be helpful to review the available evidence from studies examining the link between dTAC and anti-inflammatory effects. In addition, the link between inflammation and oxidative stress should be better explained. In this regard, the above-suggested reference could be useful, at least for depression outcome.

**Answer 3:** Thank you very much. The relationship between oxidative stress and inflammation was better explained and the suggested manuscript cited in the text (Line: 212).

Studies that examined the link between the anti-inflammatory effects and dTAC were added in the text (Line: 234). In this sense, three others studies were cited.

[ 41] Bawaked RA, Schröder H, Ribas-Barba L, Izquierdo-Pulido M, Pérez-Rodrigo C, Fito M, et al. Association of diet quality with dietary inflammatory potential in youth. *Food Nutr Res.* 2017;61:1328961. <https://doi.org/10.1080/16546628.2017.1328961>.

[42] Brighenti F, Valtuena S, Pellegrini N, Ardigo D, Del Rio D, Salvatore S, et al. Total antioxidant capacity of the diet is inversely and independently related to plasma concentration of high-sensitivity C-reactive protein in adult Italian subjects. *Br J Nutr.* 2005;93:619–25. <https://doi.org/10.1079/BJN20051400>.

[43] Valtueña S, Pellegrini N, Franzini L, Bianchi MA, Ardigo D, Del Rio D, et al. Food selection based on total antioxidant capacity can modify antioxidant intake, systemic inflammation, and liver function without altering markers of oxidative stress. *Am J Clin Nutr.* 2008;87:1290–7. <https://doi.org/10.1093/AJCN/87.5.1290>.

**Question 4:** When the authors say "In addition, to anti-inflammatory effects, consumption of certain fruits and dark green vegetables may be related to increased melatonin concentrations". This affirmation should be referenced and the mechanisms discussed.

**Answer 4:** Thank you very much. The relationship between fruit and vegetable consumption and circulating melatonin was referenced and explained (Line: 239). In this sense, four studies were cited in the text.

[47] Gomes Domingos AL, Hermsdorff HHM, Bressan J. Melatonin intake and potential chronobiological effects on human health. *Crit Rev Food Sci Nutr.* 2019;59:133–40. <https://doi.org/10.1080/10408398.2017.1360837>.

[48] Garrido M, Paredes SD, Cubero J, Lozano M, Toribio-Delgado AF, Muñoz JL, et al. Jerte Valley Cherry-Enriched Diets Improve Nocturnal Rest and Increase 6-Sulfatoxymelatonin and Total Antioxidant Capacity in the Urine of Middle-Aged and Elderly Humans. *Journals Gerontol Ser A.* 2010;65:909–14. <https://doi.org/10.1093/GERONA/GLQ099>.

[49] Garrido M, Gonzalez-Gomez D, Lozano M, Barriga C, Paredes SD, Moratinos ABR. A jerte valley cherry product provides beneficial effects on sleep quality. Influence on aging. *J Nutr Heal Aging.* 2013;17:553–60. <https://doi.org/10.1007/S12603-013-0029-4>.

[50] Howatson G, Bell PG, Tallent J, Middleton B, McHugh MP, Ellis J. Effect of tart cherry juice ( *Prunus cerasus* ) on melatonin levels and enhanced sleep quality. *Eur J Nutr.* 2011;51:909–16. <https://doi.org/10.1007/S00394-011-0263-7>.

**Question 5:** In addition to present relevant evidence, it would also be helpful to discuss how antioxidants display effects on the different mental disorders studied here. It seems too much generic to discuss the same mechanism for all of them.

**Answer 5:** As studies point to similar mechanisms for common mental disorders, we kept the depression and anxiety discussion together. Furthermore, the studies analyzed in this review also point to similar mechanisms related to common mental disorders. The relationship between oxidative stress and sleep is not fully elucidated, the articles analyzed here only offer hypotheses for this relationship. As suggested, we separate a paragraph for the sleep part (Line. 220).

**Question 6::** Line 55, pg 4: please remove the dot after "adult"

**Answer 6:** Thank you very much. The “dot” in the text was removed.

**Question 7:** Table 1: the first column can be listed alphabetically. Furthermore, it is not necessary to separate different studies, as they are already shown in the text.

**Answer 7:** Thank you very much. We made all modifications requested.

**Question 8:** Tables 2 and 3: these tables should be combined in one.

**Answer 8:** Thank you very much. The tables contain different information and that is why we present them separately.

**Question 9:** It would be helpful to have some more in-depth discussion regarding the limitations of current research and the challenges ahead.

**Answer 9:** Thank you very much. A topic was inserted in the article regarding of the limitations of the current research and the future perspectives. (Line: 277)

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2<sup>nd</sup> Editorial decision  
27-Jul-2021

Ref.: Ms. No. JCTRes-D-21-00094R1  
Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders:  
A systematic review of observational studies  
Journal of Clinical and Translational Research

Dear author(s),

Reviewers have submitted their critical appraisal of your paper. The reviewers' comments are appended below. Based on their comments and evaluation by the editorial board, your work was FOUND SUITABLE FOR PUBLICATION AFTER MINOR REVISION.

Before we can proceed to publication of your work, however, the editorial board kindly asks you to improve the language and raise it to academic standards in accordance with the journal's author guidelines. The best strategy is to have a native speaker thoroughly peruse through the text and make modifications. If this is not an option, you could contract a third-party proofreading service. Alternatively, we have staff editors who will conduct a deep dive on the text, which to date has resulted in an instant accept verdict. The latter option is associated with a fee. Please contact the editor if you are interested.

If you decide to revise the work, please itemize the reviewers' comments and provide a point-by-point response to every comment. An exemplary rebuttal letter can be found on at <http://www.jctres.com/en/author-guidelines/> under "Manuscript preparation." Also, please use the track changes function in the original document so that the reviewers can easily verify your responses.

Your revision is due by Aug 26, 2021.

To submit a revision, go to <https://www.editorialmanager.com/jctres/> and log in as an Author. You will see a menu item call Submission Needing Revision. You will find your submission record there.

Yours sincerely,

Michal Heger  
Editor-in-Chief  
Journal of Clinical and Translational Research

Reviewers' comments:

Reviewer #1: The authors accepted all of my recommendations and made the pointed changes

I suggested.  
The manuscript can be accepted.

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Authors' response

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Juiz de Fora, 03 August, 2021

Re: Manuscript reference No. JCTRes-D-21-00094R1

Dear Dr. Michal Heger,

Thank you for giving us an opportunity to resubmit a revised version of our manuscript entitled  
“Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders: A  
systematic review of observational studies.”

We are grateful for the useful comments of the reviewers, as a result of which the paper has been  
considerably improved. As suggested at this stage of the review, we send the manuscript to a  
certified  
company for English language review. Below, we send the company's proof of correction. We  
are  
also submitting the revised manuscript.

On behalf of the authors, kindest regards,

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3<sup>rd</sup> Editorial decision  
12-Aug-2022

Ref.: Ms. No. JCTRes-D-21-00094R2  
Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders:  
A systematic review of observational studies  
Journal of Clinical and Translational Research

Dear authors,

I am pleased to inform you that your manuscript has been accepted for publication in the

Journal of Clinical and Translational Research.

You will receive the proofs of your article shortly, which we kindly ask you to thoroughly review for any errors.

Thank you for submitting your work to JCTR.

Kindest regards,

Michal Heger  
Editor-in-Chief  
Journal of Clinical and Translational Research

Comments from the editors and reviewers: