

PEER-REVIEW REPORT

Name of journal: *World Journal of Methodology*

Manuscript NO: 88519

Title: The Gut Microbiome in Alcohol Use Disorder: Implications for Health Outcomes and Therapeutic Strategies - A literature review

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 02822447

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Poland

Author's Country/Territory: Greece

Manuscript submission date: 2023-09-27

Reviewer chosen by: Jia-Ru Fan

Reviewer accepted review: 2023-11-24 13:52

Reviewer performed review: 2023-11-24 17:03

Review time: 3 Hours

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| Scientific quality | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| Novelty of this manuscript | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty |
| Creativity or innovation of this manuscript | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation |

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| Scientific significance of the conclusion in this manuscript | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance |
| Language quality | <input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection |
| Conclusion | <input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection |
| Re-review | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Peer-reviewer statements | Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous |
| | Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

Great article touching on a very interesting area of the effect of alcohol consumption on the gut microbiota. The authors have made a very solid review of publications. I only have a couple of comments - 35000 species of bacteria is an exaggerated number - about 1500 species are usually given. The term flora is not used - we are not talking about the plant world. There is a lack of information about viromycetes and myxobiotics.

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Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05272457

Position: Peer Reviewer

Academic degree: Doctor, MD

Professional title: Associate Professor, Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Greece

Manuscript submission date: 2023-09-27

Reviewer chosen by: Jia-Ru Fan

Reviewer accepted review: 2023-11-24 08:07

Reviewer performed review: 2023-11-28 12:06

Review time: 4 Days and 3 Hours

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| Scientific quality | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| Novelty of this manuscript | <input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty |
| Creativity or innovation of this manuscript | <input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation |

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| Scientific significance of the conclusion in this manuscript | <input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance |
| Language quality | <input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection |
| Conclusion | <input checked="" type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection |
| Re-review | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Peer-reviewer statements | Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous |
| | Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

This is a well written review article which depicts the relationship of the Gut Microbiome and AUD (Alcohol Use Disorder) and explores its therapeutic avenues for the management of AUD. A few minor revisions are list below: 1.The reference to "leaky gut" in the Abstract and Keywords section is not further explained in the main text, which merely refers to "increased intestinal permeability". 2.The last paragraph of the Introduction refers to "a particular focus on the increased risk of liver disease, cardiovascular disease and type 2 diabetes", but in the latter part of the article, only the "increased risk of liver disease" part is stated, while the latter two are not explicitly explained in further detail. 3.The definition of AUD in the Introduction mentions that "AUD is characterized by excessive drinking and persistent alcohol-seeking behavior". Can the concept of "alcohol dependence(alcoholism)" appearing later in the text be equated with it, or does it require a slight explanation of both? 4.The format of the "Alcohol Consumption and the Gut Microbiome" heading is not harmonized with that of its peer.

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Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03262691

Position: Peer Reviewer

Academic degree: MA

Professional title: Chief Doctor, Professor

Reviewer's Country/Territory: China

Author's Country/Territory: Greece

Manuscript submission date: 2023-09-27

Reviewer chosen by: Jia-Ru Fan

Reviewer accepted review: 2023-11-25 01:59

Reviewer performed review: 2023-12-04 17:11

Review time: 9 Days and 15 Hours

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| Scientific quality | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| Novelty of this manuscript | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty |
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| Re-review | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Peer-reviewer statements | Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous |
| | Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

In recent years, interconnection of gut microbiota and diseases of the human body has become a global research hotspot, as seen in this review discussing the interesting topic of gut dysbiosis in patients with alcohol use disorders (AUD) which include alcoholic liver disease, CNS diseases, and mental disorders as well. The authors discussed the latest findings regarding the changes in gut microbiota and their implications in AUD. Based on these findings, the authors also discussed the therapeutic strategies targeting gut dysbiosis for AUD. This is a well-written review with rich literature data and in-depth discussion reflecting the current research progress in this field. However, when it comes to the question of “whether alcohol drinking is the cause or the consequence of changes in the gut microbiota” the assumption of “alteration in the gut microbiota could be a precursor to the development of alcohol-dependence” needs to be further addressed for a logical explanation of the bidirectional communication. Besides, fecal microbiota transplantation (FMT) is of great potential in the treatment of gut dysbiosis-related diseases including AUD. So, it would be better to add something more to FMT.