

AI 툴의 사용과 출판윤리

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ICMJE 가이드라인 2024

- Who is an Author?
 - The ICMJE recommends that authorship be based on the following 4 criteria:
 - 1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
 - 2. Drafting the work or **reviewing** it critically for important intellectual content; AND
 - 3. Final approval of the version to be published; AND
 - 4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Non-Author Contributors

- Use of AI for writing assistance should be reported in the acknowledgment section.

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AI-Assisted Technology

- At submission, the journal should require authors to disclose whether they used Artificial Intelligence (AI)–assisted technologies
- Authors who use such technology should describe, in both the cover letter and the submitted work in the appropriate section if applicable, how they used it. (data collection, analysis, or figure generation)
- Chatbots (such as ChatGPT) should not be listed as authors because they cannot be responsible for the accuracy, integrity, and originality of the work

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AI-Assisted Technology

- Authors should not list AI and AI-assisted technologies as an author or co-author, nor cite AI as an author. Authors should be able to assert that there is no plagiarism in their paper, including in text and images produced by the AI.
- Humans must ensure there is appropriate attribution of all quoted material, including full citations.

ICMJE 가이드라인 2024

Manuscript Section

- Method
 - Authors who used AI technology to conduct the study should describe its use in the methods section in sufficient detail to enable replication of the approach, including the tool used, version, and prompts where applicable.
- References
 - Referencing AI-generated material as the primary source is not acceptable.

ICMJE 가이드라인 2024

Peer Reviewer

- Reviewers must maintain the confidentiality of the manuscript as outlined above, which may prohibit the uploading of the manuscript to software or other AI technologies where confidentiality cannot be assured.
- Reviewers must request permission from the journal prior to using AI technology to facilitate their review.
- Reviewers should be aware that AI can generate authoritative-sounding output that can be incorrect, incomplete, or biased.

WAME (World Association of Medical Editors)

WAME Recommendations on ChatGPT and Chatbots in Relation to Scholarly Publications, May 31, 2023

- 1) Only humans can be authors
- 2) Authors should acknowledge the sources of their materials
- 3) Authors must take public responsibility for their work
- 4) Editors and reviewers should specify, to authors and each other, any use of chatbots in evaluation of the manuscript and generation of reviews and correspondence
- 5) Editors need appropriate digital tools to deal with the effects of chatbots on publishing.

WAME (World Association of Medical Editors)

WAME Recommendations on Chatbots and Generative Artificial Intelligence in Relation to Scholarly Publications, Oct 25, 2023

- 1) Chatbots cannot be authors.
- 2) Authors should be transparent when chatbots are used and provide information about how they were used.
- 3) Authors are responsible for material provided by a chatbot in their paper (including the accuracy of what is presented and the absence of plagiarism) and for appropriate attribution of all sources (including original sources for material generated by the chatbot).
- 4) Editors and peer reviewers should specify, to authors and each other, any use of chatbots in the evaluation of the manuscript and generation of reviews and correspondence.
- 5) Editors need appropriate tools to help them detect content generated or altered by AI.

WAME (World Association of Medical Editors)

WAME Recommendations on Chatbots and Generative Artificial Intelligence in Relation to Scholarly Publications, Oct 25, 2023

1) Chatbots cannot be authors. (<— Only humans can be authors)

No AI tool can “understand” a conflict-of-interest statement, and does not have the legal standing to sign a statement.

Chatbots have no affiliation independent of their developers.

WAME (World Association of Medical Editors)

WAME Recommendations on Chatbots and Generative Artificial Intelligence in Relation to Scholarly Publications, Oct 25, 2023

2) Authors should be transparent when chatbots are used and provide information about how they were used.

The extent and type of use of chatbots in journal publications should be indicated.

This is consistent with the ICMJE recommendation of acknowledging writing assistance and providing in the Methods detailed information about how the study was conducted and the results generated.

WAME (World Association of Medical Editors)

WAME Recommendations on Chatbots and Generative Artificial Intelligence in Relation to Scholarly Publications, Oct 25, 2023

2) Authors should be transparent when chatbots are used and provide information about how they were used.

2.1: Authors submitting a paper in which a chatbot/AI was used to draft new text should note such use in the acknowledgment; all prompts used to generate new text, or to convert text or text prompts into tables or illustrations, should be specified.

2.2: When an AI tool such as a chatbot is used to carry out or generate analytical work, help report results (e.g., generating tables or figures), or write computer codes, this should be stated in the body of the paper, in both the Abstract and the Methods section. In the interests of enabling scientific scrutiny, including replication and identifying falsification, the full prompt used to generate the research results, the time and date of query, and the AI tool used and its version, should be provided.

WAME (World Association of Medical Editors)

WAME Recommendations on Chatbots and Generative Artificial Intelligence in Relation to Scholarly Publications, Oct 25, 2023

3) Authors are responsible for material provided by a chatbot in their paper (including the accuracy of what is presented and the absence of plagiarism) and for appropriate attribution of all sources (including original sources for material generated by the chatbot).

Authors of articles written with the help of a chatbot are responsible for the material generated by the chatbot, including its accuracy.

It is the author's responsibility to ensure that the content reflects the author's data and ideas and is not plagiarism, fabrication or falsification. Otherwise, it is potentially scientific misconduct to offer such material for publication, irrespective of **how it was written**.

WAME (World Association of Medical Editors)

WAME Recommendations on Chatbots and Generative Artificial Intelligence in Relation to Scholarly Publications, Oct 25, 2023

4) Editors and peer reviewers should specify, to authors and each other, any use of chatbots in the evaluation of the manuscript and generation of reviews and correspondence. If they use chatbots in their communications with authors and each other, they should explain how they were used.

WAME (World Association of Medical Editors)

WAME Recommendations on Chatbots and Generative Artificial Intelligence in Relation to Scholarly Publications, Oct 25, 2023

5) Editors need appropriate tools to help them detect content generated or altered by AI. Such tools should be made available to editors regardless of ability to pay for them, for the good of science and the public, and to help ensure the integrity of healthcare information and reducing the risk of adverse health outcomes.

WAME checklist

Oct 25, 2023

4. Use of artificial intelligence/large language models. Was an artificial intelligence (AI)-based system used for any portion of the work? (See [WAME](#) and [ICMJE](#) recommendations.)

☐ No

☐ Yes: Complete the following information:

a. Which AI-based systems were used? _____

b. Which portions of the work included AI input? Indicate each and for what specifically AI was used, including use of AI for research; editorial work (writing, editing, translation), referencing, design (making tables, figures, graphs and photos); and search, classifying, analyzing, or doing bibliographic studies.

c. Did authors review and revise the AI-generated outputs and text?

☐ No

☐ Yes: what changes were made to the outputs?

d. Were all the statements and references compiled by the AI-based system independently verified for accuracy?

☐ Yes

☐ No

WAME checklist

Oct 25, 2023

e. The following information is included in the manuscript:

☐ The abstract (if applicable) summarizes what portions included AI input

☐ For a research manuscript: the Methods describe the ways in which AI was used in the study, including:

- queries that were used and the specific date(s) on which the queries were asked
- the AI-system used to answer the questions
- the parts of the research and/or manuscript affected, including research components, text, Tables, Figures, appendix/supplement, etc.
- If AI was used in studies involving humans, how AI use was disclosed to participants and how privacy/anonymity was preserved

☐ For a non-research manuscript: the manuscript includes:

- queries that were used and the specific date(s) on which the queries were asked
- the AI-system used to answer the questions
- the parts of the manuscript affected, including text, Tables, Figures, appendix/supplement, etc.

☐ Yes

☐ No. Provide the information here or in an attachment:



Artificial intelligence (AI). AI-assisted technologies [such as large language models (LLMs), chatbots, and image creators] do not meet the *Science* journals' criteria for authorship and therefore may not be listed as authors or coauthors, nor may sources cited in *Science* journal content be authored or coauthored by AI tools. Authors who use AI-assisted technologies as components of their research study or as aids in the writing or presentation of the manuscript should note this in the cover letter and in the acknowledgments section of the manuscript. Detailed information should be provided in the methods section: The full prompt used in the production of the work, as well as the AI tool and its version, should be disclosed. Authors are accountable for the accuracy of the work and for ensuring that there is no plagiarism. They must also ensure that all sources are appropriately cited and should carefully review the work to guard against bias that may be introduced by AI. Editors may decline to move forward with manuscripts if AI is used inappropriately. Reviewers may not use AI technology in generating or writing their reviews because this could breach the confidentiality of the manuscript.

AI-generated images and other multimedia are not permitted in the *Science* journals without explicit permission from the editors. Exceptions may be granted in certain situations—e.g., for images and/or videos in manuscripts specifically about AI and/or machine learning. Such exceptions will be evaluated on a case-by-case basis and should be disclosed at the time of submission. The *Science* journals recognize that this area is rapidly developing, and our position on AI-generated multimedia may change with the evolution of copyright law and industry standards on ethical use.



Use of AI-Assisted Technologies

The *Journal* has adopted the following policies, as specified by the International Committee of Medical Journal Editors (ICMJE), on the use of artificial intelligence (AI) in preparation of material to be submitted for publication in the *Journal*.

- Authors must disclose at submission of the manuscript whether AI-assisted technologies (such as large language models, chatbots, or image creators) were used to produce the submitted work. If so, both the cover letter and the submitted work should include a description of the technologies used and what was produced.
- Because the authors of a manuscript are responsible for the accuracy, integrity, and originality of the work, chatbots or other AI-assisted technologies cannot be listed as authors.
- Authors should carefully review and edit all materials produced through the use of AI, to prevent the submission of authoritative-sounding output that is incorrect, incomplete, or biased.
- Authors should be able to assert that there is no plagiarism of text or images in materials produced by AI. Authors must ensure that all quoted material is properly attributed, including full citations.
- Citation of AI-generated material as a primary source is not acceptable.

Instructions for Authors

Nonhuman artificial intelligence, language models, machine learning, or similar technologies do not qualify for authorship. If these models or tools are used to create content or assist with writing or manuscript preparation, authors must take responsibility for the integrity of the content generated by these tools. Authors should report the use of artificial intelligence, language models, machine learning, or similar technologies to create content or assist with writing or editing of manuscripts in the **Acknowledgment section** or Methods section if this is part of formal research design or methods. See also **Use of AI in Publication and Research, Reproduced and Re-created Material, and Image Integrity**.

X. AUTHOR'S MANUSCRIPT CHECKLIST



XI. DISCLOSURE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY



If artificial intelligence (AI)-assisted technologies (such as large language models, chatbots, or image creators) were used during preparation of the manuscript, authors should disclose how they used AI in both the cover letter and the submitted work. Authors are responsible for scientific integrity of all contents that AI generated. Authors should not list AI-assisted technologies as an author or co-author, nor cite AI as an author. All submissions or publications that do not adequately disclose AI assistance will be rejected from review or retracted.