The Ethical Implications of Using AI for Preparing Research Papers

Description

A recent global survey found that roughly one in three researchers had used AI to edit or otherwise help prepare manuscripts, and many respondents understand the need for disclosure when AI contributes beyond routine copy?editing. This rapid uptake has moved the question from "Can I use AI?" to "How should I use AI ethically when preparing research papers?" This article defines the key terms, summarizes publisher and editorial expectations, outlines the main ethical risks, and gives practical, actionable guidance you can adopt in your research workflow.

What is meant by "using AI for manuscript preparation"?

Content generation

Generative artificial intelligence (GenAI) systems that produce text, images, or other data from prompts (e.g., ChatGPT, Claude). These tools may be used for drafting, paraphrasing, translation, summarization, or grammar checks.

AI-assisted editing

Using AI to refine language, restructure sentences, fix grammar, or suggest stylistic changes under human supervision. This differs from fully automated content generation, where the AI creates large amounts of original text with minimal human input.

The distinction between these two is important. AI-assisted editing, while strictly executed by competent authors, can increase productivity without introducing ethical complications. Content generation, on the other hand, could lead to risks ranging from hallucinated facts and fabricated citations to potential plagiarism and accountability gaps all of which can threaten research integrity and the author's reputation.

Why this matters now

AI is already present in the research pipeline: analyses suggest generative models influenced the text of some published papers early in the AI era. One analysis across journals found detectable ChatGPT influence in a non?trivial share of papers.

Editorial bodies and major publishers have updated guidance: ICMJE requires disclosure of AI assistance in manuscript preparation; many publishers and journals clarify that AI cannot be listed as an author.

Ethical risks and how they arise

Hallucination (fabricated facts or references)

Generative models can produce plausible but false statements or invent citations; if used unchecked, these propagate error.

Plagiarism and mosaic borrowing

Substituting synonyms or lightly rewriting existing text without proper attribution can still constitute plagiarism. Plagiarism is presenting another's words or ideas as your own and remains an academic offense.

Accountability gap

AI cannot consent to authorship, approve final versions, or take responsibility — hence it cannot be an author under prevailing criteria.

Confidentiality and data privacy

Uploading unpublished data or sensitive manuscript material into a third?party AI tool may violate journal policies or institutional rules.

Bias and homogenization

AI reflects its training data and may unintentionally reproduce cultural or disciplinary biases, reducing diversity of expression.

Policies and editorial expectations

Disclosure

Many editorial bodies and journals expect authors to disclose the use of AI tools in the Methods, Acknowledgments, or cover letter when the tools contributed substantive content or analysis. Routine language polishing tools may not require disclosure in some publisher policies, but requirements vary – check target journal guidance.

Authorship

AI cannot be credited as an author because it cannot be accountable or enter into copyright/ethical declarations. Always list only human contributors.

Data, images, and figures

Many publishers prohibit using generative AI to fabricate or alter figures and expect authors to declare if AI was used in image generation.

How to use AI ethically when editing a manuscript – a practical checklist

Define the task explicitly:

- Use AI for language polishing, grammar, or reorganizing text – not for generating novel research claims or results.

Keep human oversight central:

- Critically review and verify every factual claim, numeric value, and reference produced or suggested by the tool before including it.

Avoid uploading sensitive or unpublished datasets:

- Check the tool's terms of service and your institution/journal confidentiality rules.

Disclose use transparently:

- If the AI contributed substantive wording, analytical steps, or literature synthesis, include a brief statement in the Methods or Acknowledgments describing which tool and version was used and for what purpose. Example phrasing: "We used [tool name, version] to assist with language polishing and copyediting; all content was reviewed and approved by the authors."

Preserve traceability:

- Keep records of prompts, AI outputs, and edits you accepted – useful if questions arise during peer review.

Verify citations:

- Never accept AI?generated references without confirming the cited source exists and matches the claim.

Common mistakes and how to avoid them

Mistake: Copy?pasting AI output without verification.

Fix: Treat AI output as a draft; verify facts and references, and rewrite in your own scholarly voice.

Mistake: Failing to disclose substantive AI use.

Fix: When in doubt, disclose. Many journals prefer transparency and may treat nondisclosure as misconduct.

Mistake: Uploading confidential peer?review material into public AI services.

Fix: Use internal, secure editorial tools or avoid AI for confidential content.

Practical tips for labs or collaborative projects

- Add a short AI?use item to your lab's manuscript checklist: tool name/version, purpose, who reviewed outputs, where disclosed.
- Ask co?authors to confirm that they reviewed and approved any AI?influenced text before submission (this aligns with ICMJE authorship expectations). icmje.org
- Use AI for formatting and language, but reserve interpretation, method description, and results explanation for humans.
- Keep a minimal prompt log (date, prompt, AI response summary) as part of your submission records.

Points to note when choosing AI tools

- Check terms of service for data retention and IP wording.
- Prefer tools that allow local deployment or institutional licenses for sensitive material.
- Be prepared for bias and errors; complement AI with domain?expert review.

Important: What's acceptable yesterday might not be ok tomorrow

Editorial policies are actively evolving (ICMJE 2023 update; many publishers updated guidance through 2024–2025), so review the target journal's instructions before submission.

Detection tools, publisher screening, and community norms are maturing; transparency and recordkeeping will make the difference between responsible use and reputational risk.

Final practical takeaway

Use AI as an assistant, not a coauthor. Apply these simple rules: verify everything AI produces,

disclose substantive use in submission documents, and ensure human accountability for content. This approach preserves research integrity while allowing you to benefit from efficiency gains.

Visit our Responsible AI Movement for a summary table of publisher policies, practical author roadmap, and learning resources to help you use AI responsibly and productively!

Category

1. Reporting Research

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