



AALBORG UNIVERSITY
DENMARK

Doctoral School in Medicine and Biomedical Science and Technology

Generative artificial intelligence (AI) and AI-assisted technologies have an increasing influence on how data and knowledge are utilized and created. Generative AI is an integral part of many platforms such as *ChatGPT*, *Copilot*, *MidJourney*, and others, generating contents based on requests made in day-to-day communication. These requests can be related to e.g., text, picture, video, or computer code. It is important to note that other platforms like *Scite*, *Perplexity* can also be used to condensate or make overview of academic work.

The **Doctoral School in Medicine, Biomedical Science and Technology of the Faculty of Medicine at Aalborg University (AAU)** supports the freedom of PhD students when choosing research methods, but these choices need to be made in agreement with good scientific practice including data protection. We have, therefore, developed a document stating important points to be aware in relation to generative AI and AI-assisted technologies use in relation to the Danish Code of Conduct for Research Integrity ¹. See also the WHO recommendations for AI guidelines in medicine ².

- Generative AI suffers from several limitations with respect to validity, quality and reliability challenging two basic principles of the Danish Code of Conduct for Research Integrity, i.e., accountability and honesty. Be especially aware if you have been using or plan to use generative AI on your own materials like pictures or other types of data as this may result in suspicion of falsification or fabrication.
Recommendation: Be aware of the strength and limitations of generative AI. For that purpose, see the [AAU's micro course on generative AI and ChatGPT](#). Moreover, read recent papers and materials testing and reporting the utilization of different AI-assisted platforms.
- Generative AI uses materials from other sources (text, pictures, etc. collected for large language model (LLM)). The contents are generated using statistical methods resulting in a lack of references. Here, it is still important to mention that the section on publication of the Danish Code of Conduct for Research Integrity states: "*using one's own work and the work of other researchers in a publication, appropriate and accurate references to such work should be provided.*". This cannot be not solely linked to text rendition but should be used keeping the definition of plagiarism in mind ("*Appropriation of other people's ideas, processes, results, text, or particular concepts without rightful attribution*"). See legislation on scientific misconduct (in Danish) ³.
Recommendation: Always verify the output when using generative AI, especially keep an eye on the nuances and limitations of the original materials and cite original references. When collaborating with others (supervisors or external collaborators), agree

¹ <https://ufm.dk/publikationer/2014/filer-2014/the-danish-code-of-conduct-for-research-integrity.pdf>

² https://www.medscape.com/viewarticle/998216?ecd=mkm_ret_231111_mscpmrk-OUS_IntStories_etid6040496&uac=24397SX&implD=6040496

³ <https://www.retsinformation.dk/eli/lta/2017/383>



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in advance if generative AI can or cannot be used.

AI platforms or LLM can never be co-author on articles as specified in the updated recommendations of the International Committee of Medical Journal Editors based on the Vancouver guidelines (see section 4) ⁴.

- Generative AI necessitates a special focus on documentation in relation to reliability and transparency of research methodology. This applies especially to AI-assisted technologies that partly or fully replace human judgment and/or interpretation of data.
Recommendation: Always check beforehand the policy of the journal or publisher you intend to submit your manuscript to as the acceptability towards the use of generative AI varies. At AAU, we recommend you to declare the use of generative AI for language edition and for data collection/generation or analysis (add the information in the methods section).
NB: Mentioning the use of generative AI or AI-assisted technologies ensures transparency but does not necessarily make the methods reliable or valid (biased dataset). In case of generation of dataset, save the generated or synthetic data.
- Generative AI is used in many platforms and software. The Danish Code of Conduct for Research Integrity, the National legislation, and the local rules at AAU must comply with general data protection regulation. There are to date several unsolved cases and breaches after the use of generative AI and AI-assisted technologies.
Recommendation: Always check if the AI-assisted technologies you plan to use is approved if you plan to work with personal data at [the overview of approved platforms](#), or if there is an agreement made for a specific project. In a broader sense, do not feed AI-assisted technologies with personal information.
- When reviewing manuscripts or books, you still must check the quality and respect integrity in that process. This includes confidentiality of not providing manuscripts, parts hereof, ideas, concepts or the like to third parties. Several publishers have added criteria related to the use of generative AI for reviewers.
Recommendation: Check if the use of generative AI is acceptable in relation to the reviewing of scientific material.

This document has been prepared by Karsten Kryger Hansen, Chief consultant, Aalborg University Library and Professor Pascal Madeleine, PhD, DSc, head of the graduate school at the Faculty of Medicine, Aalborg University in April 2024. Check eventual update or amended guidelines.

⁴ <https://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html#four>