

Large Language Models in Academic Plastic Surgery: The Way Forward

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Plastic surgery is a field of medicine that focuses on improving the appearance and function of various body parts through surgical procedures. With the advancements in technology, the use of artificial intelligence (AI) and natural language processing has become more prevalent in various fields, including plastic surgery. ChatGPT, a large language model (LLM) developed by OpenAI has several potential uses in academic plastic surgery.

One potential use of ChatGPT in plastic surgery research is in the analysis of patient data. With the ability to analyze vast amounts of patient data, ChatGPT can help identify patterns and trends that could lead to new insights in the field of plastic surgery. ChatGPT can also help predict patient outcomes and identify areas where surgical procedures can be improved.

Another potential use of ChatGPT is in the development of surgical techniques. ChatGPT can analyze data from surgical procedures and identify areas where the procedure can be improved or made more efficient. That can lead to the development of new techniques that could improve patient outcomes and reduce the risk of complications. Furthermore, it can help improve patient communication. With its natural language processing capabilities, ChatGPT can help research participants to understand the risk and benefits of participating in a study. It can also answer questions and provide information to patients before and after their surgery.

However, there are also several potential drawbacks of using ChatGPT in plastic surgery research. One of the main disadvantages is the lack of human interaction. Research participants may feel more comfortable and confident when speaking with a human rather than with a machine. Moreover, it has a significant potential for bias. While ChatGPT is designed to be objective, it is only as unbiased as the data it is trained on. If the data used to train ChatGPT are biased, it could lead to biased results and potentially

harmful surgical procedures. Lastly, the cost of implementing ChatGPT can be a major barrier. The cost of training, maintaining, and implementing ChatGPT can be high and may not be feasible for all plastic surgery researchers.

In conclusion, ChatGPT has several potential uses in academic plastic surgery. As the technology continues to improve, it will be important to weigh the potential benefits and drawbacks of using ChatGPT in plastic surgery research. Ultimately, a combination of human interaction and AI technologies may provide the best academic and patient care in plastic surgery.

As some readers may have suspected at this point, everything above this line has been generated by ChatGPT. As with every novel technology, its implementation is both exciting and scary. It is inevitable that novel LLMs represent the beginning of a new epoch in artificial intelligence, and although it is clear that this new powerful technology can have many uses in academic medicine, it is as clear that the ethics of using it need to be well regulated and controlled. Many journals and editorial organizations such as COPE, JAMA Network, and the World Association of Medical Editors provided their recommendations on using ChatGPT and chatbots in academic writing. Similarly, both the *Plastic and Reconstructive Surgery* and *Plastic and Reconstructive Surgery Global Open* journals have both released a statement clarifying that an LLM cannot be considered as an author and that its use must be acknowledged in the article. However, many other journals have yet to comment on their specific policy with regard to the use of LLMs in academic writing. Therefore, we conclude this Editorial with some caveats to be aware of when using LLMs such as ChatGPT in plastic surgery research:

1. LLMs can help both researchers and journal editors to write and edit articles, allowing them to focus on the research methodology and generating hypotheses rather than spending hours on writing and formatting. It can also help authors from different countries, where English is not their primary language, to write high quality manuscripts, and hence improve author diversity. However, if LLMs are to be used as a writing aid, it is imperative to review and edit all AI-generated texts in order to personalize and ensure its accuracy.
2. Using LLMs in research should be mentioned by all authors in their acknowledgement section in order to ensure transparency and honesty within the academic world.

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- LLMs are as accurate and unbiased as the data they are trained on and therefore, it is important for researchers to use them for literature searches with caution, and to cross-reference and critically analyze their generated information.
- Journals should start specifying whether they accept LLM-generated text and in what capacity.

Finally, it is important to remember that as of now, the use of LLMs and their ethical considerations remain very elusive and unclear, specifically with how closely resemble their work is with that of humans. Therefore, academic plastic surgeons have the responsibility to familiarize themselves with this new technology and work together to develop guidelines for its use. Although the authors have written the last two paragraphs of this viewpoint, it remains elusive whether it was edited by AI technology.

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