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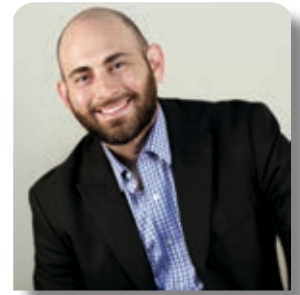
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Artificial Intelligence: The Good, the Bad, and the Ugly

by Michael Saba, DMD



Artificial Intelligence (AI) has permeated numerous sectors of our lives, including healthcare, and dentistry is no exception. The integration of AI in dentistry has promised significant advantages, but it also raises questions and concerns. Let's explore the pros and cons of AI in the dental field.

Pros:

- **Enhanced Diagnostics:** AI-driven diagnostic tools have the potential to significantly improve the accuracy and speed of dental diagnoses. Machine learning algorithms can analyze X-rays, scans, and patient records more efficiently than humans, helping detect oral health issues at an early stage.
- **Improved Treatment Planning:** AI can assist dentists in creating personalized treatment plans for patients by analyzing their historical data, current condition, and risk factors. This approach results in more effective and patient-specific care.
- **Efficient Workflow:** AI can streamline administrative tasks in dental practices, such as appointment scheduling, billing, and patient communication. This frees up dental professionals to focus on patient care, ultimately improving the overall patient experience.
- **Prosthetic Fabrication:** 3D printing and CAD/CAM technologies, driven by AI, allow for the precise and rapid fabrication of dental prosthetics like crowns, bridges, and dentures.
- **Preventive Dentistry:** AI-powered predictive analytics can identify patients at risk of specific oral health problems. Dentists can intervene early, helping patients avoid costly and invasive treatments.

Cons:

- **Cost of Implementation:** Integrating AI systems into dental practices requires a significant initial investment. Smaller clinics and dental professionals in resource-limited settings may struggle to afford these technologies.

- **Data Privacy Concerns:** AI relies on large amounts of patient data, which can raise concerns about privacy and security. Safeguarding this information from breaches or misuse is crucial.
- **Depersonalization:** While AI can streamline administrative tasks, there is a concern that overreliance on technology may depersonalize the patient experience. Some patients may prefer human interaction for their dental care.
- **Training and Learning Curve:** Dental professionals need to learn how to effectively use AI tools. The time and resources required for training and adapting to new technology can be challenging for some practitioners.
- **Algorithm Biases:** AI algorithms can inherit biases present in the data they are trained on. This could lead to disparities in diagnosis or treatment recommendations, particularly if the training data is not diverse.

Now for the real eye opener; everything you just read preceding this current sentence has been formulated by AI using ChaptGPT using the search text, "create an article using advanced vocabulary and punctuation concerning artificial intelligence in dentistry." I removed the conclusion for the sake of the length of this editorial which was impressive. And each time a search is requested with the same text a different result formulates. So what is this all about? The example above sheds light on what some issues are with AI that many are not yet familiar with. Our high school and college aged students are well aware of these resources and are breezing through homework and papers in the blink of an eye as there is no way to detect plagiarism, yet. Although there is a plethora of useful information contained above, much of it does not come from a reliable source and there's no indication where it came