



THE ROLE OF ARTIFICIAL INTELLIGENCE IN TRANSFORMING DIAGNOSTIC PRACTICES IN MODERN STOMATOLOGY

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Introduction:

In recent years, the application of artificial intelligence (AI) in healthcare has expanded significantly, with dentistry and stomatology being no exception. AI technologies offer potential improvements in diagnostics, particularly in image-based disease detection and clinical decision support systems.

Keywords: Artificial intelligence, diagnostic dentistry, oral health, digital tools, image recognition

Objective:

To evaluate the current impact of AI on diagnostic methods in stomatology and identify the primary challenges and future directions for its effective implementation.

Methods:

A narrative review was conducted using articles from 2018 to 2025 obtained from PubMed, Scopus, and Google Scholar. The focus was on studies involving AI applications in dental diagnostics, including image analysis, predictive algorithms, and digital treatment planning.

Results:

AI systems demonstrated high accuracy in detecting dental caries, periodontal bone loss, and early-stage oral cancer through radiographic image interpretation. The integration of AI improved diagnostic speed and consistency. However, challenges such as limited dataset diversity, data privacy concerns, and lack of clinician training remain critical barriers.



Conclusion:

AI has the potential to transform diagnostic workflows in stomatology. For sustainable implementation, further validation in real-world settings and integration into educational curricula are essential. Ethical considerations must guide its use to ensure patient safety and data security.

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