# IS ARTIFICIAL INTELLIGENCE TRANSFORMING DENTISTRY TODAY?

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Since the birth of science, the most fascinating structure of the human body is the human brain. Over the past centuries' researchers have been developing the latest technologies to imitate and explore how the human brain functions. However, to develop a machine that thinks like a human brain is still a dream for researchers. Aristotle's early efforts to devise logical thinking via his syllogisms (a three-part deductive reasoning) were a source of inspiration for modern computers and technologies[1]. In the1950, Alan Turing designed a machine to decode encrypted messages, which was a breakthrough of super computers in the days of yore. He designed the "Turing Test" which was coined to assess whether a computer could exhibit intelligence better known as "artificial intelligence" (AI) today[2]. AI is "a field of science and engineering concerned with the computational understanding of what is commonly called intelligent behavior, and with the creation of artifacts that exhibit such behaviour"[3].

Since 1980, AI has come a long way, virtual reality is being used in dental education these days to create real life situations and promote clinical work on simulators to eliminate risk factors associated with training on live patients. Recently artificial intelligence has been integrated with tutoring systems like "Unified Medical Language System" (UMLS), which have resulted in a better quality of feedback, which the preclinical virtual patients provide to the students[4,5]. This interactive phase helps students to evaluate their clinical skills and compare their skills with the standard ones, thus creating an ideal and high-quality training environment. Studies have been carried out regarding the efficacy of AI systems, which have stipulated that preclinical students build higher competencies than with the use of traditional simulator units[6-8].

Currently AI inbuilt virtual dental assistants are present in the market. They can execute various chair side tasks with greater accuracy and less manpower ensuring minimum error during the procedures. In the world of implantology and maxillofacial surgery AI helps plan and prepare surgeries with smallest details forgoing actual surgery. Some exceptional uses of AI include robotic surgeries in the field of maxillofacial surgery and bioprinting (where tissues and organs can be reconstructed in thin layers)[9]. The field of AI has flourished to great extent in the past decade; AI systems are an aid to the field of dentistry and dental education.

This narrative attempts to explain possible AI-based applications in the future, it can be used for dental diagnosis, planning out treatments, conducting image analysis, and record keeping. AI-based technologies streamline and reduce laborious workforce to routine tasks, it ensures dental procedures are possible at a lower cost and ultimately makes predictive, preventive, and participatory dentistry possible. The use of AI in dental procedures needs to be guaranteed; its application with human oversight and evidence-based dentistry shall be expected. Dental education needs to be introduced to clinical AI solutions by promoting digital literacy in the future dental liveware.

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