

### **From Ancient Vedic Wisdom to Modern Dentistry: The Evolution and Impact of Artificial Intelligence in Dentistry**

Recently, the term 'Artificial Intelligence (AI)' has gained significant attention in our day-to-day lives. Just a few weeks ago, our Honorable Prime Minister's speech was delivered in various Indian languages using AI technology.

Artificial intelligence (AI) refers to the ability of machines to perform tasks that typically require human intelligence. While AI may seem like a modern concept, its roots trace back to ancient India, specifically mentioned in the Vedas, which were written between 1500 BCE and 500 BCE.

At present, artificial intelligence (AI) encompasses the use of computers to create algorithms that classify, analyze, and make predictions based on data. Additionally, AI involves acting upon data, learning from it, and enhancing its data interpretation abilities over time.

Modern AI technology and its applications aim to enhance convenience for medical professionals. In the field of dentistry, AI has been integrated across various dental disciplines. A significant portion of AI applications in dentistry focuses on 'diagnosis' using radiographic or optical images.

Traditionally, as dental surgeons, we diagnose caries through visual and/or radiographic examinations. However, identifying early lesions presents challenges, particularly when deep fissures, tight interproximal contacts, and secondary lesions overlap. Consequently, many lesions are only detected in advanced stages, necessitating complex treatments. Drawing from the established features of radiology, AI algorithms can more effectively analyze patterns and offer predictions for each tooth segment, facilitating early detection and diagnosis of caries.

Dental practitioners are increasingly recognizing AI as a valuable tool that can enhance their efficiency and precision. AI aids in diagnosis, decision-making, treatment planning, predicting treatment outcomes, and forecasting disease progression. By standardizing procedures and elevating diagnostic capabilities, AI enhances case acceptance rates. Furthermore, AI offers a more cost-effective approach. Undoubtedly, the future of dentistry is intertwined with AI.



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