

# DENTAL HEALTH FORUM

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## Artificial Intelligence in Oral & Maxillofacial Surgery

In the last decade or so, artificial intelligence (AI) through its successful and influential applications has revolutionized the field of medicine. The introduction of AI in Oral & Maxillofacial Surgery is more recent & predominantly experimental but holds tremendous promise. The use of AI seems particularly well adapted in the context of orthognathic surgery protocols such as improved diagnostic precision using AI enhanced maxillofacial imagery, treatment planning using 3D models, CAD/CAM manufacture of custom orthodontic appliances & equipment as well as improved therapeutic follow-up. A key contribution of artificial intelligence in oral surgery is the development of robotic or computer-assisted surgery. Oral surgical procedures with robotic assistance can be performed with less blood loss, fewer complications, shorter hospital stays, and better cosmetic results than standard open surgical techniques. Application of AI in the form of surgical navigation has added advantages of reduced operating time, preservation of adjacent vital structures, and higher intraoperative accuracy. An ingenious application of AI is “bioprinting”, where living tissues and organs can be constructed in thin successive layer of cells. Despite the numerous advantages, AI has its own limitations with respect to potential misinterpretations, unclear privacy, security & ethical regulations, lack of accountability in a clinical scenario, and high initial cost. It has to be emphasized that AI can only assist the clinician & surgeon in performing the tasks efficiently, but in no way replace the intellect of human knowledge, skill and decision making ability. Hence, we must learn to appreciate and value how useful artificial intelligence, augmented reality, and robotics can be and find ways to maximize their use for the benefit of our surgical patients.

## Biography:

Dr. AMARJEET GAMBHIR graduated in dentistry from GDC, Indore in 2002 & completed his post-graduation in Oral & Maxillofacial Surgery from NHDC, Mumbai in 2006. He completed his 3 year Senior Residency from Lady Hardinge Medical College & Hospital, New Delhi in 2009. He then worked as a faculty at different dental colleges and was promoted to Professor, Oral & Maxillofacial Surgery in 2016. He again joined Lady Hardinge Medical College as a Faculty in 2016. He has worked as a co-investigator in pilot project on school-based sealant programme 2017 under Ministry of Health & Family Welfare, Government of India. He is a reviewer of various international journals & has published more than 15 national & international papers in indexed journals. He has attended a number of conferences & workshops and presented more than 10 papers & key-note lectures in national & international conferences/ webinars. He has also authored 3 books for dental postgraduate entrance examinations. His areas of interest include oral cancer, TMJ disorders, maxillofacial pathology & reconstruction & dental implants.