

Content available at: <https://www.ipinnovative.com/open-access-journals>

IP Annals of Prosthodontics and Restorative Dentistry

Journal homepage: <https://www.aprd.in/>

## Editorial

# Maxillofacial rehabilitation with patient specific implants-Need of the hour

Poonam Prakash <sup>1,\*</sup>

<sup>1</sup>Dept. of Prosthodontics and Crown & Bridge, Command Military Dental Centre, NC, Udhampur, Jammu and Kashmir, India



## ARTICLE INFO

### Article history:

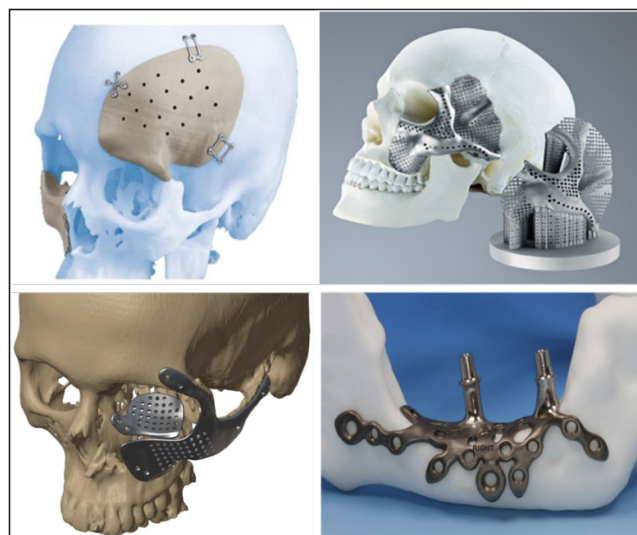
Received 15-03-2023

Accepted 18-03-2023

Available online 21-03-2023

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](#), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: [reprint@ipinnovative.com](mailto:reprint@ipinnovative.com)



Maxillofacial defects can result from a variety of causes, including trauma, congenital abnormalities or cancer. Rehabilitation of residual maxillofacial defects is quite challenging due to complexity of anatomical structures and cosmetic and functional effects on patients. The use of alloplastic implants and autogenous grafts is often

associated with resorption, infection, and displacement. Recent trends in maxillofacial prosthetics include the use of digital technology, development of new materials, advancements in surgical techniques and concept of custom computer-designed patient-specific implants (PSIs)

## Digitization

The use of digital technologies, such as 3D scanning and printing, has revolutionized the field of maxillofacial prosthetics by allowing for accurate and efficient design and fabrication of prostheses. Digital technologies can be used to create accurate models of patients' facial structures, which can be used to design and fabricate custom prostheses. Digital scanning and 3D printing technology have also made it possible to create patient-specific prosthetics that fit more precisely and comfortably.

## Patient-Specific Prostheses

Advances in digital technology have made it possible to create prostheses that are customized to the unique needs of individual patients. This can include prostheses that are designed to match the patient's skin tone and texture, as well as prostheses that are tailored to fit the patient's facial contours. Patient-specific implants (PSIs) are a type of medical implant that is customized to fit the unique anatomical structure of a particular patient. PSIs are designed using advanced imaging technologies such as computed tomography (CT) or magnetic resonance imaging

\* Corresponding author.

E-mail address: [pnmprakash@yahoo.co.in](mailto:pnmprakash@yahoo.co.in) (P. Prakash).

(MRI) to create a 3D model of the anatomical structure. This allows for precise fabrication of an implant that matches the patient's specific needs.

Patient-specific implants have been used in a variety of maxillofacial prosthetic applications, such as cranial, orbital, auricular, and nasal defects. These implants have proven to be highly effective, providing improved function and aesthetics for patients with various facial defects, including cancer, trauma, and congenital anomalies. Another significant advantage of patient-specific implants is their ability to reduce surgical time and improved patient outcomes. Because the implant is custom-made to fit the patient's specific anatomy, the surgical procedure is often less invasive, resulting in less trauma and a faster recovery time.

In conclusion, the use of PSIs for maxillofacial reconstruction has several advantages over traditional reconstruction methods. PSIs can result in better functional outcomes, such as improved speech and chewing ability, and better aesthetic outcomes, which can improve the patient's quality of life. Its main drawback is its high cost.


With continued advancements in digital technology and materials, patient-specific implants would continue to

transform the field of maxillofacial prosthetics, improving the lives of patients with various facial defects. Overall, the advancements in maxillofacial prosthetics have significantly improved the quality of life for patients suffering from various oral and facial defects. However, it's important to note that PSIs may not be appropriate for all patients or all types of maxillofacial defects. The decision to use PSIs should be made on a case-by-case basis by a team of specialists, including a Maxillofacial Prosthodontist, Radiologist, Surgeon and Engineer.

### Conflict of Interest

None.

### Author biography

**Poonam Prakash**, Associate Professor  <https://orcid.org/0000-0002-9179-0161>

**Cite this article:** Prakash P. Maxillofacial rehabilitation with patient specific implants-Need of the hour. *IP Ann Prosthodont Restor Dent* 2023;9(1):1-2.