

New Horizons in Implant Prosthodontics:

CAD/CAM-Individual Implant Abutments

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Predictable osseointegration has taken the role of implant dentistry beyond the mere restoration of function for the compromised edentulous and partially edentulous patient to an accelerated and esthetic treatment approach for implant-supported restorations. Despite the predictable longevity of implant suprastructures, there is an ongoing interest to improve the implant restorative treatment and outcome.

One of the recent developments is the application of computer-aided design and computer-aided manufacturing (CAD/CAM) to produce implant abutments and frameworks from metal or ceramic materials. Optical scanning of master casts will prosthetically extend the scope of abutment and restoration fabrication in removable and fixed prosthodontics. Custom abutments are available in Y-TZP zirconia and titanium and can be more predictably designed to re-create the desired supporting crown orientation and morphology. This facilitates the formation of anatomical gingival topography and coronal contours for prosthetic replacement. They offer natural emergence anatomy; proper spatial design at the cervical margin; sufficient occlusal reduction; and proper axial angulation for ideal design.

The presentation will critically evaluate the rationale of CAD/CAM technology in implant restorative dentistry and will highlight the natural symbiosis of a functional and esthetic treatment approach, considering novel techniques and their material aspects.