Optimized Tooth Preparation for Accurate and Efficient Digital Prosthetic Workflows

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The rapid advancement of digital dentistry has fundamentally transformed the paradigm of prosthetic treatment. The introduction of CAD-CAM systems and intraoral scanners has accelerated the transition from analog-based techniques to a digital workflow. Within this evolving environment, the importance of tooth preparation is further emphasized. In digital prosthodontics, all stages—including data acquisition, design, and fabrication—are data-driven; therefore, the accuracy and consistency of initial tooth preparation serve as critical determinants of the definitive prosthesis' fit and long-term prognosis. Accordingly, tooth preparation should not be regarded as a mere reduction procedure, but rather as a design phase that governs data quality and the overall success of the restoration. Accurate and standardized preparation strategies are essential to maximize the advantages of CAD-CAM systems and to improve clinical outcomes. This lecture aims to systematically review preparation strategies for achieving accurate and efficient digital prosthetic restorations, with a particular focus on CAD-CAM-based ceramic restorations, and to present their practical clinical applications.

Profile

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