

## Fundamentals of Implant Prosthodontics Through a Digital Workflow

Prof. Kyung Chul Oh

Advances in digital technology have transformed every stage of implant prosthodontic treatment, from diagnosis and treatment planning to fabrication and clinical verification. In particular, improvements in intraoral scanner performance have enabled clinicians to directly digitize intraoral conditions, allowing patient-specific data to be acquired and integrated into treatment more efficiently than ever before. This digital workflow not only streamlines diagnosis and treatment planning, but also facilitates stepwise verification throughout the restorative process and supports more intuitive communication among clinicians, dental technicians, and patients, thereby enhancing the predictability and overall quality of implant prosthodontic care.

Nevertheless, the successful implementation of a digital workflow depends fundamentally on the acquisition of accurate scan data. Scan quality and accuracy are influenced by multiple factors, including scanner performance, the characteristics of the scanned object, intraoral conditions, operator experience, and scan strategy. Among these variables, scan strategy is one of the most important factors under direct operator control. The selection of an appropriate scanning path and data acquisition protocol is therefore a critical prerequisite for obtaining reliable digital impressions. Once accurate scan data have been secured, a range of digital prosthetic workflows, including modeless approaches, can be applied according to the clinical situation, available equipment, and manufacturing protocol.

This lecture will review the fundamental principles underlying the effective use of digital workflows in implant prosthodontics, with particular emphasis on practical considerations for acquiring accurate intraoral scan data and incorporating such data into clinical decision-making and prosthesis fabrication. Through representative clinical cases, the lecture will also address the integration of 3-dimensional digital data into treatment workflows, stage-specific verification, the clinical advantages and current limitations of digital approaches, and future directions in this rapidly evolving field. Ultimately, the aim is to provide clinicians with practical guidance and clinically relevant insight for the application of digital workflows in everyday implant prosthodontic practice.

### Profile

- \* DDS, Yonsei University College of Dentistry
- \* PhD in Dental Science, Yonsei University Graduate School
- \* Director, Board Certification, The Korean Academy of Prosthodontics
- \* Editorial Board Member, The Journal of Prosthetic Dentistry
- \* Present, Associate Professor, Department of Prosthodontics, Yonsei University College of Dentistry