Implant dentistry enjoys one of the highest success rates for any orthopedic medical restorative process. According to Scott D. Ganz, DMD, Maxillofacial Prosthodontist, these success rates perhaps explain one of the barriers to clinicians ordering more computed tomography (CT) scans for prospective implant patients. He explains, however, that “CT imaging can help clinicians improve all aspects of implant reconstruction, including both restorative and surgical phases while diminishing complications of malpositioned implants.”

First and foremost, says Ganz, clinicians need to understand the importance and benefits of CT imaging. Getting the scan is only one part of the equation, giving rise to his slogan, “It is not the scan; it is the plan!” Determining potential implant receptor sites is based on an understanding of the available bone, the density of the bone (which can be determined with conventional CT and some cone beam [CB] CT machines), avoidance of important anatomical structures, and restorative and aesthetic requirements. Data from either conventional or cone beam CT are easily processed and transferred to the desktop or laptop computer, allowing true interactive three-dimensional (3-D) analysis. Using available software as a diagnostic aid allows the clinician to develop multiple treatment plans quickly and efficiently. Additionally, he says, the information can be used as an excellent marketing and communication tool between all members of the implant team.

Brief History of Dental Imaging

Ganz explains that the advent of the panoramic radiograph was an excellent screening modality to recognize jaw structures, allowing clinicians an expanded view beyond the capabilities of single-film, periapical radiography. In fact, he says, for many clinicians the panoramic radiograph is still the imaging tool of choice when planning for implant reconstruction despite its two-dimensional limitations and inherent distortion factor.¹