

## 3D Printing As Part of the Radiology revolution



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The world of 3D printing has evolved rapidly over the past two decades, including in the field of softwares that can process data and build accurate 3D models and enable Virtual Surgical Planning, design of guides or implants and analysis of volumetric dimensions. However, the paramount advancement in this field is the progress in Additive Manufacturing (AM) technologies, creating new 3D printers using various technologies that can 3D print complex models, guides and implants such as in the Oral and Maxillofacial field.

These AM technologies made it possible and feasible for the surgeons to establish a Point-Of-Care (POC) in their departments, that includes; softwares for segmentation and design, and 3D printers. Where they can personalize treatment to every patient. The technologies enables the transformation of medical information such as CT or MRI into a 3D printable and designable model that can contribute to both understanding of pathology and its dimensions, and to tailor a treatment for the patient, either with designing; cutting guides, repositioning guides, Implants, and/or splints, all Patient Specific, or just use the model for pre-adjustment of a plate or any other implant.

We will review in this lecture, our experience in establishing an active POC, that aids us on daily basis in personalizing and improving the health care we provide our patients, in all the Oral and MaxilloFacial fields, including; Trauma, Oncology, Orthognatic Surgery and more. We'll also show some Pitfalls and the Pearls from our experience.

We believe that there are improvements to come in the field of machinery, materials, and software, that would provide new applications to further improve our patients health care.