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Direct-Printed Aligners: Advancing Precision and Efficiency in Orthodontic Care

This lecture examines the transformative impact of direct 3D-printed aligners on modern orthodontic practices, focusing on the innovative use of methacrylate-based photopolymer resin (Shape memory clear aligner resin) approved for clinical applications. Participants will explore the clinical advantages of these aligners, including their customizable design features for precise force delivery, such as variable thickness, cutouts, and bite ramps. The session will also outline the production workflow, from digital setup and 3D printing to post-processing, emphasizing the enhanced efficiency and accuracy of this technology. By the end, attendees will gain insights into how 3D-printed aligners improve treatment outcomes, expand clinical possibilities, and streamline orthodontic workflows. Join us to discover how direct 3D printing is reshaping orthodontic care.

Learning Objective

1. Evaluate the clinical advantages of direct 3D-printed aligners, including customizable design features like variable thickness, cutouts, and bite ramps, to enhance treatment precision and efficiency.
2. Understand the complete production workflow for 3D-printed aligners, from digital setup and 3D printing to post-processing, and apply these steps to streamline orthodontic workflows.
3. Analyze the material properties of TC-85DAC resin, including its biomechanical and clinical benefits, to determine its suitability for specific orthodontic applications.