

# Annual World Dentists Summit

and

2<sup>nd</sup> Annual Congress on

## Dental Health and Oral Care

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### The state of art and properties in digital dentures

**Background:** Digital technologies offer the opportunity to integrate different scans into the design of digital dentures and provide a 3D preview and tooth arrangement for treatment planning and manufacturing. The conventional fabrication methods have been error-prone, time-consuming, complex, and expensive procedures. Removable partial dentures (RPD), and Complete dentures (CD) fabricated by computer-aided design and computer-aided manufacturing (CAD-CAM) techniques have become popular. Therefore, we reviewed the treatment outcomes of concepts used for implant-supported overdentures, RPDs and CDs.

**Method and Materials:** An effective search of the literature was done, mainly through PubMed, Scopus, and Google Scholar with ("removable partial denture" OR "RPD" OR "complete dentures" OR "dentures" OR "implant" OR "overdenture") AND ("CAD-CAM" OR "digital impression" OR (digital technology) OR "3D print" OR "milling" OR "rapid prototyping") as keywords from 2001 to 2021. According to the research methods 31 eligible articles were chosen.

**Results:** Digital dentures can be fabricated by digital or combined analog-digital procedure while using intraoral scanners or extra-oral scanners. Milling and rapid prototyping (3D printing), have been widely used in the fabrication of dentures. They have been reported to have clinically acceptable results. Digital dentures were evaluated by their accuracy, patient's satisfaction, clinical outcomes and their procedures. CAD/CAM dentures have several advantages such as reducing clinical chair time and the number of visits, digital archiving, significantly higher retention, and more favorable clinical and patient-centered, less denture tooth movement, increased toughness, ideal flexural strength, and higher elastic modulus. CAD/CAM dentures showed at least comparable accuracy. However, disadvantages such as high cost, software errors, and lack of jaw relations in functional state, are still the problem.

**Conclusions:** CAD/CAM dentures had shown better clinical outcomes compared to conventional dentures. Although, there are some limitations in the manufacturing procedures. Results of studies suggest there is a great potential for further investigations.

### Biography

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