

# Removable Partial Dentures – Treatment Now and for the Future

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## Introduction

Removable partial dentures have been used since the mid-19th century, and with the development of porcelain teeth by S.S. White and Vulcanite rubber by B.F. Goodyear, both removable partial dentures and complete dentures gained broader use. Since then, significant developments in materials, techniques, designs, and impression materials have occurred that have improved the quality of the removable partial dentures (RPDs) and the lives of partially edentulous patients. This article describes four removable partial denture treatment modalities that represent viable treatment options for the partially edentulous patient well into the future.

## Implant Supported RPD

Partially edentulous patients with a poor prognosis and minimal number of remaining teeth for a conventional RPD can now have an excellent prognosis with the advent of osseointegrated dental implants.



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## Abstract

The use of a removable partial denture (RPD) in clinical practice remains a viable treatment modality. Various advancements have improved the quality of a RPD, subsequently improving the quality of life for the individuals that use them. This article describes four removable partial denture treatment modalities that provide valuable treatment for the partially edentulous patient. These modalities include: the implant supported RPD, attachment use in RPDs, rotational path RPDs, and Titanium and CAD/CAM RPDs.

Data on future needs for RPDs indicate that while there is a decline in tooth loss in the U.S., the need for RPDs will actually increase as the population increases and ages. With the growth in the geriatric population, which includes a high percentage of partially edentulous patients, the use of RPDs in clinical treatment will continue to be predictable treatment option in clinical dentistry.

## KEY WORDS:

RPD, implant, CAD/CAM, retention, mandible, maxilla

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# Functional Impressions for Complete Denture Fabrication

## A Modified Jump Technique

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### INTRODUCTION

Jump techniques are commonly used in dentistry for rebasing complete dentures. They are methods that use the existing denture as a custom tray to impress the edentulous arch while the denture is simultaneously held in occlusion. In that way the occlusal table is accurately oriented to the underlying tissue surface. That orientation is captured in the lab with a denture flask or an indexing jig, and it is preserved while the old denture base material is replaced with new. The term “jump” conveys the figurative leap of that tooth-to-tissue relationship from one denture base to another.



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### Abstract

Tissue conditioners are used with great success in dentistry as functional impression materials for rebasing removable prostheses. In the rebase procedure, a functional impression is made in an existing denture to create a master cast. The orientation of the occlusal surface to the underlying tissue surface is captured with a reline jig or denture flask and transferred to the new denture base in what is called a “jump” in laboratory jargon. Functional impression methods are not commonly considered, however, for the fabrication of new dentures despite their popularity and ease of use. This article describes a modified jump technique for remaking complete dentures. The method uses functional impressions in existing maxillary and mandibular dentures to create master casts and to act as stabilized carriers for jaw relation records. More precise esthetic and phonetic assessments of the existing prostheses are accommodated, and prescriptive changes may be referenced to the current tooth arrangement.

### KEY WORDS:

Complete denture, dental impression, functional impression, jump technique

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# Edentulism and Comorbid Factors

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Edentulism is defined as the loss of all permanent teeth, and is the terminal outcome of a multifactorial process involving biologic processes (caries, periodontal disease, pulpal pathology, trauma, oral cancer) as well as non-biologic factors related to dental procedures (access to care, patient preferences, third party payments for selected procedures, treatment options, etc.) (1). Chronic oral disease represents an enormous global health care burden that is often neglected in developed and developing countries; because of its economic impact, and association with other life-threatening entities such as coronary artery disease, stroke, and cancer, the treatment of chronic oral diseases, including the completely edentulous condition, should not go unnoticed. The distribution and prevalence of complete edentulism between developed and less-developed coun-



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## Abstract

**Introduction:** Complete edentulism is the terminal outcome of a multifactorial process involving biological factors and patient-related factors. It continues to represent a tremendous global health care burden, and will for the foreseeable future. The purpose of this review is to determine what comorbid factors exist for the completely edentulous patient.

**Methods:** This literature review evaluated articles obtained via the National Library of Medicine's PubMed website, using keywords of edentulism with various combinations of the terms comorbidity, incidence, health, nutrition, cancer, cardiovascular health, diabetes, osteoporosis, smoking, asthma, dementia, and rheumatoid arthritis. Abstracts were selected and screened, and selected full-text articles were reviewed. Articles were limited to those with adequate patient cohorts and a minimum of 2-year follow-up data.

**Results:** Edentulism was found to be a global issue, with estimates for an increasing demand for complete denture prostheses in the future. Completely edentulous patients were found to be at higher risk for poor nutrition, coronary artery plaque formation (odds ratio 2.32), to be smokers (odds ratio 2.42), to be asthmatic and edentulous in the maxillary arch (odds ratio 10.52), to being diabetic (odds ratio 1.82), to having rheumatoid arthritis (odds ratio 2.27), and to having certain cancers (odds ratios varying from 1.54 to 2.85, depending on the type of cancer). Chronic residual ridge resorption continues to be the primary intraoral complication of edentulation, and there appear to be few opportunities to reduce bone loss in the edentulous patient.

**Conclusions:** While the completely edentulous patient seems to be at risk for multiple systemic disorders, whether development of these disorders is causal or casual has not been determined. To minimize the loss of residual alveolar ridges, exemplary complete denture therapy, along with the establishment of routine recall systems, should be the ultimate goal of treatment of this patient cohort.

## KEY WORDS:

Comorbidity; complete dentures; residual ridge resorption; chronic oral disease.

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