

# Flexible partial dentures benefits and challenges

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## ABSTRACT

**Introduction.** For partial edentulousness there are several treatment plan options, dental implants are an excellent restorative option for patients with missing teeth, but not all patients can tolerate implants or cannot afford this treatment plan option. That is why partial prostheses are a much more affordable option in the case of partial edentulous teeth.

**Background and objectives.** The purpose of this study is to highlight in particular the benefits of the flexible partial prosthesis viewed individually or in comparison with the traditional acrylic partial prosthesis.

**Materials and methods.** Between May 2023 and May 2024, 20 patients were selected for this study. Of these, there were patients who were already wearers of traditional acrylate prostheses and who were not satisfied with the traditional prostheses, and the rest presented themselves in the clinic with partial edentulousness and were treated for the first time with partial flexible prostheses.

**Results.** The former wearers of traditional prostheses immediately felt the improvement after applying the flexible prosthesis in the oral cavity, and the patients who benefited from the flexible prosthesis for the first time quickly tolerated wearing it.

**Conclusions.** Flexible partial dentures are not for everyone, but they are an excellent and affordable solution for many edentulous cases. These prosthetics have their pros and cons, but as the materials evolve and improve, so too might the advantages and drawbacks.

**Keywords:** flexible partial dentures, traditional acrylic partial dentures, old prostheses, partial dentures

## INTRODUCTION

A removable partial denture enables the restoration or improvement of 4 oral functions: aesthetics, mandibular stability, mastication, and speech [1]. Well-known disadvantages of removable partial dentures are problematic oral hygiene, negative influence on the remaining dentition and limited oral comfort [2].

By comparison, the flexible prosthesis is much more comfortable for patients, since it does not have a rigid base, it provides the patient with ease in

speech and mastication. Flexible partial dentures were made from multiple materials like: nylon acrylic resin, polyester, polycarbonates, acrylics-PM-MA, polypropylene, acetate resin, also including super flexible crystalline nylons and polyolefins [3-5]. Flexible dentures use a special flexible resin that prevents them from chafing the gums, allows the wearer to chew properly. Some of the commercially available products are Valplast, Sunflex, Duraflex, Flexite, Proflex, Lucitone, Impak where as Valplast, Sunflex and Lucitone are monomer free [5,6].

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### MATERIALS AND METHODS

This study included a total of 20 partially edentulous patients who received new flexible prostheses. The selection also encompassed patients who had previously worn traditional partial prostheses, including those who had experienced dissatisfaction with traditional acrylic prostheses due to issues such as mucosal irritation, unpleasant odor, difficulty in wearing and removing the dentures, and frequent fractures.

Between May 2023 and May 2024, these 20 patients were provided with the appropriate prostheses and observed over the course of one year to assess their function and patient acceptance compared to their previous prostheses.

The clinical implications of various factors were closely monitored and presented in the results [7].

### RESULTS

All cases were thoroughly analyzed at regular intervals, with particular focus immediately after the application of flexible partial dentures. The analysis included monitoring the patients' hydration with the dentures, evaluating any mucosal irritations, assessing the ease of insertion and removal, and noting the frequency of fractures and overall comfort during use. All patients were followed up regularly at intervals of 1 to 2 months [7].

Following the application of the prostheses, patients generally demonstrated good adaptation,



FIGURE 1. Flexible partial dentures with uncovered palatal vault for maxilar

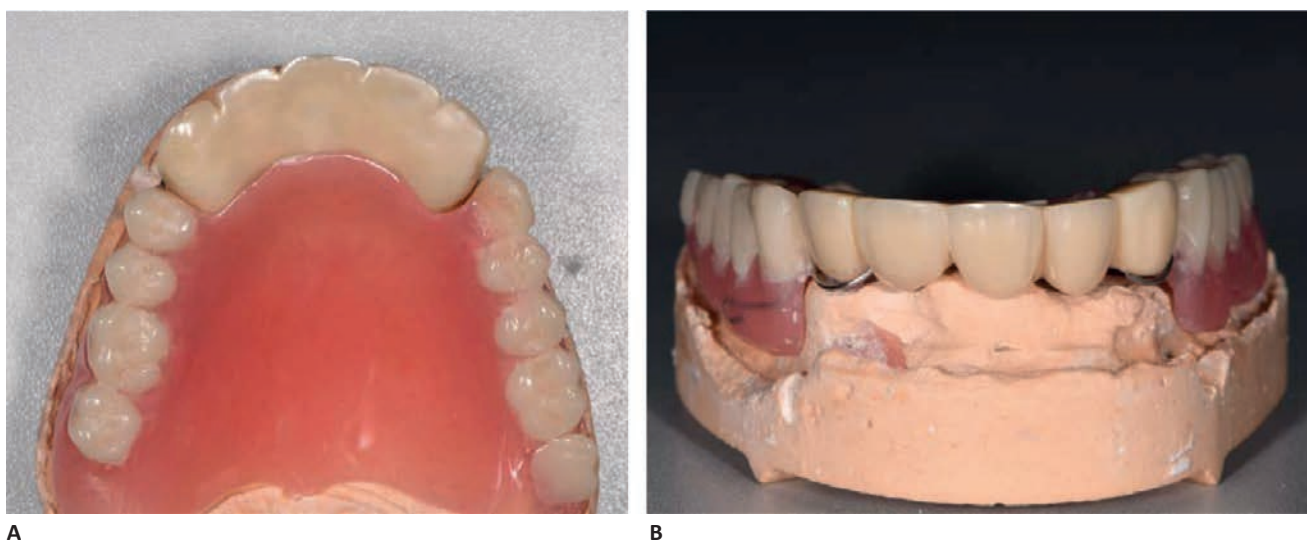


FIGURE 2. (A) Traditional acrylic partial dentures occlusal view for maxilar; (B) Partial dentures frontal view



**FIGURE 3.** (A) Traditional acrylic partial dentures frontal view in oral cavity; (B) Traditional acrylic partial dentures frontal view in oral cavity

with former wearers of traditional acrylic partial dentures expressing particular satisfaction, likely due to their previous experience with similar devices. When asked about their preference between the two types of denture base materials, 100% of the patients favored the flexible dentures over the conventional methyl methacrylate dentures [7].

## DISCUSSION

The number of partially dentate adults is increasing, and many patients will require replacement of missing teeth [8].

The transparency of the study will inevitably shed light on the less favorable aspects of flexible partial prostheses, particularly the factors that may contribute to patient discomfort. These prostheses are challenging to relines and rebase using soft tissue denture liners, acrylic resin, or even other flexible

denture base materials. Additionally, they are difficult to repair and prone to staining from various food ingredients, tea, and coffee if not properly polished and regularly cleaned by the patient [9].

The enhancement in oral health-related quality of life (OHRQoL) associated with the use of prostheses may be attributed to improvements in diet, aesthetics, and social interactions. Furthermore, the provision of removable partial dentures (RPDs) has been documented to significantly enhance OHRQoL, especially when anterior teeth are replaced. This effect may be more pronounced with flexible partial dentures, likely due to their superior aesthetic appeal [10].

Other ways, in general, flexible partial prostheses are versatile and easy to integrate, and the biggest advantage is their affordable price. Like any other treatment plan option, they have advantages, but also disadvantages.

## CONCLUSION

Removable partial dentures are nowadays primarily indicated in patients with complaints about missing teeth in the aesthetic zone, which cannot be solved in another way.

The absence of teeth can lead to functional impairments, affecting an individual's ability to chew and compromising aesthetics, depending on the location of the missing tooth or teeth. This can subsequently impact their overall quality of life.

The use of flexible partial dentures has been shown to improve patients' oral health-related quality of life. Consequently, thermoplastic materials represent a viable alternative for the fabrication of removable partial denture (RPD) bases in patient management.

By having a discussion with your patients and ensuring that everyone understands what the bene-

fits and challenges are, as well as the expectations for the outcome, flexible partial dentures can deliver excellent patient outcomes.

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