

# Denture Adhesives as an Approach in the Treatment of Edentulous Patients

Opinion

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## Author Details

Mendoza Marin DO<sup>1</sup>\* and Pero AC<sup>2</sup>

<sup>1</sup>Assistant Professor, Federal University of Santa Catarina, Brazil

<sup>2</sup>Associate Professor, São Paulo State University Brazil

## \*Corresponding author

Danny Omar Mendoza Marin, Assistant Professor, Department of Dentistry, Federal University of Santa Catarina, R. Eng. Agrônomo Andrei Cristian Ferreira, Florianópolis, Brazil

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## Abstract

Several studies have been carried out evaluating the retention, stability of complete dentures and factors associated with the patient's perception as masticatory efficiency with the use of denture adhesives. The aim of this article is to provide a perspective about the use of denture adhesives for complete denture in the treatment of edentulous patients.

**Keywords:** Complete denture, Denture adhesive, Satisfaction

## Introduction

The main treatment option for the rehabilitation of the edentulous patient is the conventional complete denture (CD) due the lower cost and aesthetically acceptable [1]. However, many complaints are reported by complete denture wearers, especially with the mandibular ones. Mandibular dentures are supported by a smaller area of bearing tissues than the maxillary ones, which compromises their retention and stability. Also, physiological changes of the supporting oral tissues, due to the resorption of the alveolar ridges can influence in decline retention and stability of CD, increasing discomfort and reduced masticatory efficiency [2].

Patient complaints related to retention and stability of their complete dentures, negatively impact on the masticatory efficiency [2,3], satisfaction and quality of life [2], accompanied by the discontinuation usage of the CD, as a consequence, impacting food consumption and diet quality[5]. Due to this, denture adhesives (DA) have been recognized by denture wearers as a useful adjunct to denture retention, stability and function and are mainly indicated for patients with reduce bone height and/or thin or flaccid mucosa susceptible to trauma [3]. However, many dentists are reluctant to prescribe these products for fear that it indicates their failure to provide an adequate prosthesis [2,4].

A consensus about the advantages of using DA in complete denture wearers is lacking [5], however, some Randomized Clinical Trials have assist practitioners to choose a DA as a useful adjunct in patient's

rehabilitation based on scientific evidence. A systematic review [5] based on randomized clinical trials showed that DA, when used in CD, improves the retention, stability, masticatory performance and increase the satisfaction of the patients.

### Indication according to the type of Denture Adhesive

It is demonstrated that DA are effective in increasing denture retention and stability of ill-fitted or well-fitted CD, regardless of the type of DA [6], and the choice is subjective. The indication of DA for patients with well-fitting dentures would be the difficulty of achieving satisfactory retention and stability, such as those who suffer from xerostomia and for patients with ill-fitting dentures if they cannot get new dentures due several reasons [7].

A consensus about the correct indication according to the type of DA is related to the following to factors [5-7]:

- Denture borders
- Anatomic changes in the soft and hard tissues
- Reduction in salivary flow (xerostomia), a common condition in geriatric population resulting in poor retention, and
- Impaired neuromuscular control

However, information is still lacking regarding these factors, as well as the knowledge about the duration of the retentive action of these products, which can vary from 3 to 12 hours depending of type of DA [8].



In situations where the patient has a dry mouth, patients exhibited a general increase in general satisfaction and quality of life with the use of DA [9]. In these cases, cream DA presents better results when compared to powder DA because of the lack of moisture and given that powder DA generally removes oral humidity [9]. Furthermore, cream DA improved the quality of life in patients with poor residual ridge [10], due to a better sealing properties and avoid the accumulation of particles under de complete denture. In addition, a period longer than 12 h with the use of DA can be recommended to allow proprioceptive adaptation [4].

In situations with extensive residual ridge resorption, the performance of the DA is crucial. In this situation, cream DA showed a better masticatory performance when compared with strip DA [11]. Another advantage, in patients with normal alveolar ridges, cream DA increases the masticatory cycle which is associated with better mastication [12].

#### Satisfaction of Complete Denture wearers with Denture Adhesives

A systematic review showed that the most studies reported significant improvement of general satisfaction after use of DA [7], allowing less muscle fatigue and greater comfort during mastication [13]. Furthermore, mandibular complete denture has an important role in the overall satisfaction of the complete denture wearers [14], where 23.3 % and 20% of the patients considered “good” the comfort and retention of their mandibular complete dentures without DA, respectively, and a significant improvement could be observed after the use of DA in comfort (76,7 %) and retention (83,3 %) [14] and this effect can subjectively influence the patient’s confidence in the use of CD, improving function and increasing treatment satisfaction.

#### Influence of Denture Adhesive on the Jaw Movements and Masticatory Performance

A systematic review [7] showed that improving the retention of the CD after the use of DA, could change the jaw movements, as follows:

- decreased duration of chewing burst
- faster masticatory cycle
- more completed bites before denture dislodgement
- shortened occlusion time and dis-occlusion time implying more even and stable occlusion
- increased vertical mandibular movement

Therefore, DA could help reaching an efficient chewing ability.

Subjectively, chewing ability is influenced by the DA, as demonstrated in a study [14], where 83.3% of the patient’s using DA reported “good” for this aspect against 16.7% that not use DA and confirm in a systematic review[8]. This indicate that chewing ability is significantly improved when a DA is used, providing the retention and stability, expected by the patients, during functional activities, greater ability to chew, less denture movement and more confidence and comfort.

It was demonstrated that DA usage increased the amplitude of the mandible movements during chewing in the vertical plane [14]. It was probably related to the improvement of the retention and stability of both complete dentures, increasing the comfort and confidence of the patients, allowing them to chew more vigorously and improving the masticatory cycles with regular and organized pattern like. Furthermore, DA improve the retention and stability of the maxillary denture during chewing, suggesting that tissue trauma might be reduced avoiding tissue trauma and ridge resorption [15].

#### Final Considerations

It is important to emphasize that the use of DA does not replace

the need for well-fitted complete dentures [5]. Some patients try to compensate misfit of the complete denture with DA, masking clinical problems such as incorrect impressions during the fabrication of complete dentures [8]. The use of DA must be periodically monitored by a professional to evaluate and perform the maintenance or the need of replacement of the complete denture, avoiding the misuse of these products.

Furthermore, it has been shown that DA are effective regardless of the type and without differences among them. The clinical recommendations for the choice of a DA should consider the manual dexterity, mucosal conditions and remaining residual ridge height of the of the patient [16].

Despite all the advantages, studies well-designed randomized long-term clinical trials are still necessary [16].

#### Conclusion

DA should be considered as an approach in the treatment of edentulous patients because of its advantages related to the improvement of the patients’ satisfaction with their CD and the overall better performance of the rehabilitation treatment.

#### Sources of Support

None

#### Conflict of Interest

None

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