

## The Frequency of Denture Replacement

Removable complete and partial dental prostheses are used to replace missing teeth in the completely or partially edentulous patient. They are medical devices with limited lifespans, and should not be considered as “permanent” restorations. Limitations to their longevity result from continual changes in the patient’s hard and soft tissues beneath the denture bases (necessitating relining, rebasing, or remaking of the prostheses), degradation of the components used in the fabrication of the prostheses (wear, fracture, chipping, others), and the inherent porosity of the acrylic resin components of the prostheses.

Hard and soft tissue changes (resorption of the residual ridges) may lead to a loss of “fit” of the removable prosthesis. This can lead to a loss of prosthesis retention, stability, support, and to tissue inflammation/ulceration. Chronic irritation caused by an ill-fitting prosthesis may promote carcinogenesis, particularly if other carcinogenic contributors (alcohol, tobacco) are involved. Persons with more than 15 missing teeth may be at greater risk for developing oral cancer, and they frequently wear dentures.<sup>1</sup> Further, there is a four times greater risk of developing head and neck cancer if the denture is ill fitting.<sup>2</sup> Precise fit of removable prostheses should not be considered a luxury, but a necessity. While resorption of the residual ridges occurs throughout the life of the patient, the denture base adaptation does not, resulting in an increasing misfit of the prosthesis. Although denture adhesives may be used to assist in the retention of a prosthesis, excessive use of adhesives to accommodate prosthesis misfit should be avoided.

Degradation of the components of the removable prosthesis can include wear of the prosthetic teeth or denture base acrylic resin, chipping or fracture of the prosthetic components, deformation of the metal or acrylic resin components, cracking of the denture base, or tooth loss from the prosthesis. Degradation can lead to loss of retention, support and stability of the prosthesis, chronic tissue irritation/inflammation, biofilm adherence, and loss of esthetics.

Porosity can lead to colonization of the prostheses with pathogenic bacteria, fungi, and viruses, which may contribute to aspiration diseases (such as pneumonia).<sup>3</sup> Oral biofilm (plaque) is formed on all surfaces of a removable prostheses in a similar fashion to the natural dentition, as well as within the porosities in the acrylic resin, necessitating removal and appropriate cleaning of the prostheses on a daily basis. Colonization in porosities makes proper hygiene of the prostheses considerably more challenging, and may prevent commercially available denture cleansers from removing the biofilm.

There is currently no evidence to determine the frequency of denture relines, rebasing, or remakes of removable complete or partial dental prostheses.<sup>4</sup> However, prudent clinical decision making suggests that they should be replaced periodically, depending on the adaptation of the prostheses for a given patient. The decision to reline, rebase, or remake a removable prosthesis should only be made after a thorough examination of the patient and his or her prostheses, assessing retention, denture base adaptation (fit) and support, occlusal vertical dimension, esthetics, phonetics, and patient satisfaction.



Therefore, it is the position of the American College of Prosthodontists (ACP) that removable complete and partial dentures should be evaluated for replacement when at least one of the following conditions occurs:

- If chronic irritation (inflammation) exists beneath the denture bases (including but not limited to epulis fissuratum, oral ulcerations, or treatment-resistant Candida-related denture stomatitis). (Caveat: The list is not intended to be all-inclusive, but rather key examples of “red flags” signaling that a denture should be replaced).
- If denture adhesives are required for the patient to eat, or to retain the dentures socially (i.e., when the dentures will not remain in place by themselves), or when adhesives must be used more than once daily.
- If the patient will not, or cannot, wear the removable prostheses.
- If the removable prostheses have degraded sufficiently to lead to prosthesis instability, loss of retention, loss of esthetics, loss of support, inability to eat, or if the prostheses or prosthetic teeth are discolored, cracked, broken, or missing.
- If the teeth supporting a removable partial denture or overdenture are lost.
- If the prosthesis has been in function for more than 5 years.

The ACP recommends that patients consult with their oral health care provider (general dentist or prosthodontist) and request that their removable prostheses be examined regularly.<sup>4</sup>

## References

1. Zeng X-T, Lou W, Huang W, et al: Tooth loss and head and neck cancer: a meta-analysis of observational studies. PLOS/One 2013;8:e79074. Doi: 10.1371/journal.pone.0079074\
2. Manoharon S, Nagaraja V, Eslick GD: Ill-fitting dentures and oral cancer: a meta-analysis. Oral Oncol 2014;50:1058-1061.
3. Felton DA: Edentulism and comorbid factors. J Prosthodont 2009;18:88-96
4. Felton D, Cooper L, Duqum I, et al: Evidence-based guidelines for the care and maintenance of complete dentures: a publication of the American College of Prosthodontists. J Prosthodont 2011;20:S1-S12

## Authors

Frank J. Tuminelli, DMD, FACP  
Lyndon F. Cooper, DDS, PhD, FACP  
Stephen D. Campbell, DDS, MMSc, FACP  
David A. Felton, DDS, MSD, FACP  
Victoria A. Vickers, DDS  
Radi Masri, DDS, MS, PhD, FACP  
Ann Wei, DDS, FACP



**Date**

Approved ACP Board of Directors: Oct. 20, 2015

Reaffirmed ACP Board of Directors: Oct. 30, 2018