A COMPARATIVE EVALUATION OF DIMENSIONAL STABILITY AND WEIGHT CHANGES OF TWO COMMERCIALLY AVAILABLE TISSUE CONDITIONERS – AN IN VITRO STUDY

By

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ABSTRACT

BACKGROUND AND OBJECTIVES: The use of tissue conditioning material has been found to be effective in edentulous complete denture patients for managing abused tissues underlying ill-fitting dentures, temporary relining of ill-fitting dentures & immediate dentures. However, in addition, these materials are also suitable for functional impressions. The effectiveness of tissue conditioners as a functional impression material depends on their viscoelastic properties, compatibility with gypsum products and reproduction of details. Dimensional stability and weight changes also affect the accuracy of the functional impressions. Thus the purpose of this study is to evaluate and compare dimensional stability and weight changes of two commercially available tissue conditioners used as functional impression materials.

METHOD: 20 Viscogel and 20 GC Reline Soft samples, of dimensions 30x10x2mm in length, width and thickness were fabricated and were further grouped as 10 for measuring dimensional stability and 10 for measuring weight changes. After 2 hrs of specimen preparation, the baseline reading for all the samples was taken for dimensional stability as well as weight changes using travelling microscope and digital weighing machine respectively. All samples were then immersed in distilled water and were kept in incubator at 37°C. Dimensional stability and weight changes were measured again at 8 and 24 hrs. The obtained results were then statistically analyzed using Student's t-test and Paired t-test.

RESULTS: Significant dimensional and weight changes were seen in Viscogel and GC Reline Soft samples on immersion in distilled water. It was observed that there was significant shrinkage and weight loss of the samples when measured from 2 hrs to 24 hrs.

INTERPRETATION AND CONCLUSION: The present findings suggest that there is a direct relationship between dimensional stability and weight changes. It also shows that on immersion in water, there were fewer changes seen in GC Reline Soft. Hence it is a better material for functional impression making. It was also found that these changes were less between 8 hrs to 24 hrs and thus the period recommended for forming functional impressions would be 24 hrs.

KEYWORDS: Tissue conditioner; Viscogel; GC Reline Soft; Dimensional stability; Weight changes.