

***Tooth movement in maxillary complete
dentures fabricated with fluid resin polymer
using different investment materials***

**A Thesis Submitted to the Council of the College of Dentistry at the
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Abstract

Statement of the problem: Constructing complete dentures with little occlusal discrepancy using simple and fast laboratory techniques are one of the objectives in prosthodontics. Fluid resin techniques are considered the easiest and simplest one compared to the conventional processing techniques, but it undergoes more shrinkage when invested in reversible hydrocolloid molds.

Purpose: This study investigates the effect of different investments on tooth movement of new fluid resin and compares the results with that of heat-cured resin. Besides, comparison between the right and left changes in vertical distances of maxillary complete dentures that had been made.

Materials and methods: A maxillary complete denture with acrylic teeth was waxed to full contour on the master cast and replicated to make 40 wax dentures. Metallic reference points were placed for linear and vertical measurements. Ten dentures were allocated for each of 4 groups; group I was processed using conventional heat-cured resin (RegularTM), group II was processed with cold-cured fluid resin (CastavariaTM) in a reversible hydrocolloid mold, group III and IV processed with the same fluid resin in addition silicone duplicating mold, and in a dental stone type III mold, respectively. Measurements had been made at the wax stage immediately before flasking, 24 hours after deflasking, and after decasting, finishing and storage in water at 37°C for 1 week, the measurement had been made with a micrometer microscope accurate to 0.005 mm.

Results: the results showed a significant tooth displacement in the different investments and in different types of acrylic resin used in this study. The right and left vertical measurements did not differ significantly from each other.

Conclusions: Maxillary dentures processed from fluid resin in silicone molds, produce the least linear dimensional changes comparable to those constructed from heat-cured resins. The decrease in vertical dimension of occlusion still exists as a disadvantage of the new fluid resin systems.