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## Materials used and techniques practiced by private dental clinicians for complete denture impression making: A study

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### Abstract

Success of complete denture depends on accuracy of the complete denture impression. A survey was conducted to know about the material used and the techniques practiced by private dental clinicians for making the complete denture impression. 57% private clinicians use stainless steel perforated dentulous stock trays, 17% private clinicians use base plate for custom tray, 79% private clinicians use alginate and 20% the zinc oxide eugenol and 1% light body condensation silicone for secondary impression making. Cidex was used by 12% clinicians for disinfection and the rest used to rinse the impression under tap water. Private clinicians used easier methods for manipulations of less expensive impression materials for impression making.

**Keywords:** Base plate, cold cure acrylic, custom tray

### Introduction

The most crucial step for making complete denture is an accurate impression making. The accurate impression captures all the limiting areas, stress bearing and relief areas. The accurate impression provides the complete denture with retention, stability, good support and intimate tissue contact. The factors that decide the accuracy of the complete denture impression are type of impression material used, type of tray used, technique used, and clinician's level of education and clinical experience, financial status of the patient and the clinical situation of edentulous patient.

There are diverse number of impression materials and techniques available for complete denture impression making. It requires vast clinical knowledge and experience to select proper impression material and technique for a particular clinical situation present for making accurate impression.

**Aims and objectives:** This survey was conducted to know about the material used and technique practiced for making complete denture impression.

### Materials and Methods

A questioner consisting of 9 questions was made and sent to 150 private dental clinicians. Only 120 dental clinicians replied. The questions in the questioner are as under:

#### 1. Which tray do you use to make primary impression for complete denture?

- Stainless steel perforated edentulous stock tray
- Stainless steel perforated dentulous stock tray
- Stainless steel non-perforated edentulous stock tray
- Plastic stock tray
- Bio prosthetic system

#### 2. Which impression material do you use to make primary impression for complete denture?

- Impression compound
- Alginate
- Heavy body or medium body elastomeric impression material

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- d. In case heavy body
- e. or medium body elastomeric impression material is used then which one
  - A. Poly ether
  - B. Addition silicone
  - C. Condensation silicone

**3. Which material do you use to fabricate custom tray for secondary impression?**

- a. Autopolymerising resin
- b. Heat cured resin
- c. Light cured resin
- d. Base plate
- e. Thermoplastic sheet

**4. Do you use spacer in custom tray for secondary impression?**

- a. Yes
- b. No

**5. In case spacer is used in the custom tray, then which one?**

- a. Full spacer with tissue stops
- b. Full spacer without tissue stops
- c. T spacer

**6. Which material do you use for border molding?**

- a. Low fusing impression compound
- b. Resin
- c. Silicone

**7. Which material do you use for making secondary impression?**

- a. Zinc oxide eugenol
- b. Light body silicone
- c. Alginate

**8. Do you disinfect the complete denture impression?**

- a. Yes
- b. No

**9. In case you disinfect the complete denture impression, then which disinfectant do you use for impression disinfection?**

- a. Cidex (2% glutraldehyde)
- b. Alcohol
- c. Rinse under tap water
- d. Any other disinfectant

**Results**

57% private clinicians use stainless steel perforated dentulous stock trays, 30% use stainless steel perforated edentulous stock trays, 10% stainless steel non-perforated edentulous stock trays and 3% the plastic stock trays for primary impression. 72% private clinicians use alginate, 25% the impression compound and 3% the heavy body addition silicone for primary impression making. 81% clinicians use autopolymerising resin, 17% the base plate and 2% the thermoplastic sheets for custom tray fabrication. Only 17% dental clinicians use spacer in custom tray that too the full spacer without tissue stops. 100% private dental clinicians use low fusing impression compound for impression making. 79% private clinicians use alginate and 20% the zinc oxide eugenol and 1% light body condensation

silicone for secondary impression making. Cidex was used by 12% clinicians for disinfection and the rest used to rinse the impression under tap water.

**Discussion**

An accurate impression making is an integral part of making good and successful prosthesis. This survey indicated that low cost and less accurate materials were used and the easier impression making techniques were practiced by private clinicians.

**Only 30% private clinicians use stainless steel perforated edentulous stock trays**

72% private clinicians use alginate for preliminary impression. Alginate has good flow and does not capture the limiting areas in over extended form. It gets plastically deformed by functional movement of limiting areas. Impression compound and heavy body silicones have high viscosity and don't yield under functional movement of muscle drape and capture limiting areas in extended form and hence are preferred for primary impression making.

17% private clinicians use base plate for custom tray which is brittle and gets melted while border molding and result in under extended impression.

Low fusing impression compound is used by all clinicians by incremental technique. Silicone is better than low fusing impression compound as silicones possess pseudo plasticity. Under the stress of functional movement of tissue drape, the flow of silicone maximizes and viscosity reduces that captures the limiting areas.

Most clinicians do not use spacer that provides space for wash material. Only 17% use spacer without tissue stops that help in reorienting the custom tray and provide uniform thickness to wash material.

Light body of polyether records tissues more accurately than zinc oxide eugenol that is widely used by private clinicians. Clinician's choice of disinfectant for impression disinfection is cidex and rinse the impression under tap water.

**Conclusion**

This study was conducted to assess the procedure the private clinicians follow to make impression for complete denture fabrication. This survey shows that clinicians use easier methods for manipulation of less expensive impression materials for impression making.

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