

## Definitive Impression Making

### I Massad Edentulous Tray

- A) Definitive impression making can be performed with a special stock tray specifically designed to meet the requirements of the edentulous patient. These trays are for one-time use only. They are distributed in five upper and five lower sizes.
- B) This maxillary tray is anatomically designed with low vestibular borders and relief areas for required muscle attachments. The posterior of the tray is contoured to allow for the precise capturing of the functional hard-soft palate throat form.
- C) The retention slots, utilized throughout the tray, are engineered to make adhesive-use optional. The tray's vestibular border also has retention grooves. And finally, the handle is built for the proper lip length facilitating a smooth impression.
- D) The mandibular tray also has an enhanced handle allowing proper lip position. The anatomical design allows for precise capturing of the mylohyoid space. The tray is extended in this area in order to negotiate the sublingual gland and fatty tissue. This allows the operator to obtain an ideal lingual extension.
- E) Next, the ergonomic finger supports allow the operator to place his or her fingers in a way that provides even pressure.

### II The Maxillary Impression

#### A) Sizing the Impression Tray

- 1 Use a ruled caliper and measure evenly on each side of the tuberosity. Now, take the estimated tray size and verify its accuracy by holding the measuring caliper onto the posterior one-third of the impression tray. This should correlate with the maxillary ridge size.
- 2 Five trays in various sizes are available to choose from. Although it is generally not necessary, the trays are designed to allow customization via a heat molding procedure. If the posterior peripheral borders of the tray are too wide, it creates displacement of the vestibular sulcus. Simply heat each posterior border by passing it through a flame quickly until the resin just softens. **CAUTION: OVERHEATING WILL DISTORT THE TRAY AND MAY CAUSE BURN.** Once the resin is soft, bend the borders to the appropriate position. Now, cool with water to reharden. This reshaping can be done on one or both sides as necessary. Correct placement puts the border of the tray in the middle of the vestibular sulcus.

## B) Tissue Stop Procedure

- 1 The addition of tissue stops is critical. Place these stops in the four locations equally distributed onto the maxillary tray with a heavy viscosity polyvinyl siloxane impression material (also called PVS).
- 2 Place in the patient's mouth and center the tray with the maxillary arch while keeping it about two to three millimeters away from the vestibular sulcus. Note: rest fingers on the tray's finger rest to allow for bilateral stabilization.
- 3 Allow the material to set according to manufacturer's recommendations. Remove and evaluate before proceeding. These stops will allow for:
  - One adequate space for impression material.
  - Two stabilization of the tray in the most centered position.
  - Three redirection of the operator to a constant path of insertion.
  - Four a tactile sense of resistance allowing the operator to prevent over-seating.
  - Five proper functional border molding by spacing the tray border short of the vestibular sulcus, which prevents over-extended borders.

## C) Border Molding Procedure

- 1 Next, place a heavy viscosity PVS on the peripheral tray borders and along the post-palatal tray area. The heavy viscosities act like border molding wax compounds. Seating the tray is now easy and should prevent the operator from over-seating due to the tissue stops previously placed.
- 2 Border molding the maxillary arch can be optimally accomplished by detailing the functional movements of the following:
  - One anterior frenum
  - Two anterior vestibular sulcus
  - Three buccal frenum and vestibular sulcus
  - Four post-zygomatic vestibular sulcus and hamular frenum
  - Five functional hard and soft palate junction (also called the post palatal zone)

- 3 Border movements include:
  - a grasping the filtrum close to the lip line and pulling downward. This identifies the anterior frenum.
  - b pooching the lips outward with a sucking action. This will form the anterior vestibular sulcus.
  - c grasping the forefinger and thumb at the corners of the mouth and pulling downward and forward. This forms the buccal frenum and vestibular sulcus.
  - d dropping the mandible downward by opening wide will delineate the post-zygomatic vestibular sulcus and hamular frenum. This action translates the coronoid process, bringing the musculature to its terminal position, creating a definitive posterior border.
  - e occluding the nostrils and then coughing will facilitate the soft palate to migrate to its natural anterior functional position, thereby forming an ideal post-palatal zone. Once again, note how the soft palate migrates anteriorly as the patient coughs.
- 4 Remove the impression and evaluate the detail.
- 5 Note: If the tray rubbed through the impression material, simply trim away approximately one to two millimeters before making the final wash impression of the tissue basal seat (or load-bearing area).

#### D) Final Wash Procedure

- 1 Make a wash of the maxillary arch utilizing a light viscosity impression material. The rationale here is to obtain a static imprint of the load-bearing area. However, different degrees of stasis can be obtained if so indicated. If the pre-maxillary arch displays loose and spongy tissues and the posterior maxilla has coarse and non-mobile tissues, the dentist may elect to use different viscosities simultaneously in each area to obtain an ideal imprint. For example, a light or extra-light viscosity in the pre-maxillary area can be selected eliminating loose tissue from distorting, and a medium viscosity in the post-maxilla can be used where the tissue is normal, thereby obtaining an ideal selective static imprint. Also, the medium viscosity placed in the post-maxilla will flow less, reducing excess flow down the throat, which may stimulate the gag reflex. In any case, using a lighter viscosity is generally indicated for load-bearing tissue areas, whereas a heavier viscosity is indicated for the peripheral borders. Place a light viscosity in the pre-maxillary area and a medium viscosity in the post-maxillary area when similar tissue conditions exist. Seat the impression until appropriate tactile resistance is felt.

- 2 Repeat the border molding procedure.
  - a anterior frenum
  - b anterior vestibular sulcus
  - c buccal frenum and vestibular sulcus
  - d post-zygomatic vestibular sulcus and hamular frenum
  - e functional hard and soft palatal zone
- 3 Remove from the mouth and evaluate the detail before casting the final impression. The detail of the final maxillary impression should be approved before casting.

### **III The Mandibular Impression**

#### **A) Sizing the Impression Tray**

- 1 Size the lower arch by measuring anterior to the retro-molar pad on the crest of the ridge. Fit the appropriate tray.
- 2 If the lingual extension of the tray encroaches on any bony areas, the tray may be adjusted via trimming and/or heating, then reshaping, as previously described.

#### **B) Tissue Stop Procedure**

- 1 Once again, place PVS tissue stops on the tray. On the lower tray, three stops are suggested. Center the tray appropriately onto the mandibular ridge. Proper ergonomic finger positioning allows for tray stabilization. Allow approximately two minutes for material to set. Analyze the stops and the tray position before proceeding.
- 2 According to the operator's preference, place either medium or heavy viscosity PVS on all borders of the lower tray. The use of heavy viscosities are generally indicated for maxillary border molding, while medium to heavy viscosities are usually selected to capture the mandibular borders.
- 3 Place the tray onto the mandibular ridge and apply pressure until resistance is felt. The stops will direct the correct placement. Border-molding the lower is now performed.

#### **C) Border-Molding Procedure**

- 1 First, have the patient place the tip of the tongue straight out and forward, then side to side, and then back as if touching the roof of the

mouth. This will eliminate an over-extension on the lingual border, thereby creating the mylohyoid zone.

- 2 Second, grasp the lower lip at the lip line and pull upward. This delineates the anterior frenum and vestibular sulcus.
- 3 Third, secure two fingers on the tray finger supports and the thumb on the patient's chin to stabilize the impression in the mouth. Then, have the patient pooch out and suck. This produces the anterior and buccal vestibular sulcus.
- 4 Fourth, take the forefinger and thumb and secure the corners of the mouth, pulling upward and forward. This forms the buccal frenum and the external oblique vestibular sulcus.
- 5 Secure the impression until set and then remove.
- 6 Now analyze the impression for detail. If the tray rubs through the impression material along the peripheral borders, adjust by reducing the tray border approximately one to two millimeters before the final wash impression is made. Note the detail of the adjusted borders on the impression before proceeding.

#### D) Final Wash Procedure

- 1 Now, apply the PVS impression material wash. It should be noted light and extra-light viscosities are generally indicated for mandibular ridges for the wash procedure due to the general tissue character and tissue mobility being compromised.
- 2 Dispense the final wash material into the lower tray. Seat until tactile resistance is felt.
- 3 Now, repeat the border-molding to obtain the best detail.
- 4 Remove the impression and evaluate the detail before casting the model.

### IV Conclusion

#### A) Let's review the overall impression-making steps.

- 1 Step one: size the impression tray to the arch. If necessary, trim or heat the impression tray to reshape for optimal fit.
- 2 Step two: place tissue stops on tray and position in the mouth.

- 3 Step three: apply heavy viscosity impression material on the tray borders and perform border-molding movements. Remove impression and evaluate. Trim excess material and relieve tray if necessary.
  - 4 Step four: apply light viscosity to the tissue side of the tray. Seat, and repeat border-molding procedure. Remove and inspect the final impression.
- B) This impression system can give each practitioner superb results in less than twenty minutes per arch. The learning curve is brief since most of the techniques are common to dentists and are patient-friendly. Remember, this impression should be your first and final one, eliminating one clinical appointment and one lab procedure. Enjoy the new era of predictable removable prosthodontics. Thank you.
- C) For more information about removable prosthodontic procedures, ask about Dr. Massad's new DVD release, Predictable Complete Dentures: The Platinum Series.