

3MSM Health Care Academy

Implant-based all-ceramic restoration using an open or closed tray impression technique.

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Dental implants are fast becoming a preferred restoration option for permanent tooth replacement, however, the implant treatment plan can only be as accurate as your impression. If you're among the growing number of doctors who are incorporating implants into their practice, your initial impression is critical to ensure precise orientation and position of the implant in the mouth. There are numerous implant impression techniques for making implant impressions and whether you use an open or closed tray technique for making implants or abutment-level impressions, a detailed impression reduces the chance of costly retakes.

Technique One: Open tray (pick-up) technique.

Initial situation

Single implant in region 15 to replace missing tooth. Patient arrived for impression taking appointment with trans-gingival healing cap. Surrounding soft tissue shows excellent healthy conditions (Fig. 1).

Treatment

After removal of the healing cap, the impression post (Straumann® implant system) for the open tray (pick-up) technique was positioned (Fig. 2).

For impression taking, Impregum™ Penta™ Polyether Impression Material (3M Oral Care) was selected. For the monophase technique, the same material is used for

tray loading and syringing the impression post. While the assistant was filling the tray, the dentist syringed the material thoroughly with the elastomer syringe (Fig. 3). The impression was taken using a 3M™ Impression Tray. The perforation was made according to the individual situation (Fig. 4).

The accurate impression with the fixed impression post (Fig. 5) was then sent to the dental lab. Prior to pouring the model, the laboratory implant analog was exactly mounted (Fig. 6).

For highest aesthetics, a custom-made zirconia abutment (Lava™ Plus, 3M Oral Care) (Fig. 7) was delivered by the lab. On top, an individualised monolithic Lava Plus Zirconia crown (3M Oral Care) was placed (Fig. 8).



Fig. 1: Initial situation with healing cap.



Fig. 2: Open tray impression post mounted.



Fig. 3: Impregum™ Penta™ Polyether Material syringed around impression post (Straumann®) using elastomer syringe (step 1 in monophasic technique).



Fig. 4: Impression taking using Impregum™ Penta™ Polyether Material and an individualised, perforated 3M™ Impression Tray (step 2 in monophasic technique).



Fig. 5: Impression with fixed impression post to be sent to dental lab.



Fig. 6: Impression with mounted laboratory implant analog.



Fig. 7: Custom-made Lava™ Zirconia abutment (3M Oral Care).



Fig. 8: Final placement of Lava™ Plus Zirconia crown (3M Oral Care).

Tips for making great implant impressions.

- Support tray until impression material is sufficiently set. Stabilise the tray after seating, avoid any movements.
- Use enough material and keep the tip permanently immersed in the material during syringing to avoid air entrapment and voids.
- Pick-up technique: Widen implant windows in the tray to avoid tray-abutment contact.

Open tray (pick-up) technique.

In this technique, the direct transfer coping gets “picked up” and remains in the set impression upon removal from the mouth. Once the impression has set, the screw holding the coping on the implant is accessed through the hole above/below the implant in the open tray and unscrewed to allow removal of the impression from the mouth. Once outside of the mouth, the implant analogue is connected to the transfer coping prior to pouring the stone model.

Technique Two: Closed tray (snap-on) technique.

Initial situation

Single implant in region 15 to replace missing tooth. Patient arrived for impression taking appointment with trans-gingival healing cap. Surrounding soft tissue shows excellent healthy conditions (Fig. 1).

Treatment

After removal of the healing cap, the corresponding impression post and the impression cap (CAMLOG® implant system) for the closed tray (snap-on) technique were mounted. For impression taking, Impregum™ Penta™ Polyether Impression Material (3M Oral Care)

was chosen since it offers dimensional accuracy and a secure impression cap fixation. The impression was taken using a regular stock tray. For the monophasic technique, the same material is used for tray loading and syringing the impression post. While the assistant was filling the tray, the dentist syringed the material thoroughly with the elastomer syringe (Figs. 2 and 3).

The accurate impression with the fixed impression cap (Fig. 4) was then sent to the dental lab. For highest aesthetics, a veneered Lava™ Plus all-ceramic crown was placed on an individualised Lava Plus Zirconia abutment (both 3M Oral Care) (Fig. 5).



Fig. 1: Initial situation with healing cap (CAMLOG®).



Fig. 2: Impregum™ Penta™ Polyether Material syringed around impression post using elastomer syringe (step 1 in monophasic technique).



Fig. 3: Impregum™ Penta™ Polyether Material syringed around impression post.

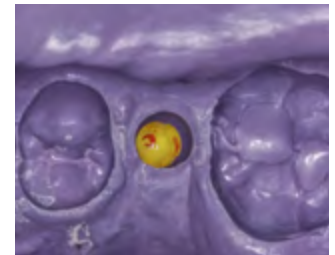


Fig. 4: Impression with fixed impression cap to be sent to dental lab.



Fig. 5: Veneered Lava™ Plus all-ceramic crown (3M Oral Care) placed on an individualised Lava™ Plus Zirconia abutment (3M Oral Care).

Tips for making great implant impressions.

- Support tray until impression material is sufficiently set. Stabilise the tray after seating, avoid any movements.
- Use enough material and keep the tip permanently immersed in the material during syringing to avoid air entrapment and voids.
- Snap-on technique: Try-in the tray prior to making impressions and ensure proper size to avoid coping-tray contact.

Closed tray (snap-on) technique.

In this technique, the direct transfer coping “snaps-on” to the top of the implant abutment in the mouth. Once the impression has set, the coping becomes embedded in the impression and is pulled off of the implant abutment when the set impression is removed from the mouth. Once outside of the mouth, the implant analogue is connected to the transfer coping prior to pouring the stone model.

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