Restor your case with Full Service Support from ROE Dental Laboratory

ROE Supports
All-On-4 techniques available from all implant companies

All-On-4
Revitalize
Diem II
Unit-for-Fixed
ProArch
Thommen

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The purpose of this document is to give an overview of the process involved in restoring an All-On-4 case with to the final prosthesis. This document assumes that you will be finalizing the case with a Fixed-Removable (Hybrid) prosthesis. If restoring with a Prettau (TLZ-IB) bridge, the steps are different.

Step 1: Evaluate the Current Situation

When evaluating an All-On-4 patient for the final prosthesis, the first step is to to evaluate the current esthetics and function with the provisional in place. This is the time to document any noticeable issues that may arise surgically or restoratively. Examples of issues that may need to be corrected before moving the final prosthesis are:

- An abutment position that causes a screw access hole to be too far palatal or facial
- Vertical space that is less than 12mm, as measured from crest of the gingiva to the occlusal plane of the opposing dentition, or on double arch restorations 24mm from maxillary implant interface to mandibular implant interface.

Advanced: Determine if this case is eligible for the single stage final process which reduces chairtime and length of restorative procedures. Call ROE for information on One-Stage Pick-Up Final Prosthesis.

The All-On-4 Protocol uses straight, 15°, 17° or 30° Angle Transmucosal Abutments (TMA’s) on each implant. More discussion on TMA’s is on the next page. These special abutments allow for correcting any implant angle for the prosthesis and simplifies the final impression and future maintenance.

All impressions should be made with OPEN TRAY impression copings.

After the impression copings are placed and firmly seated, you have the option to lute the transfers together using light cure material or pattern resin. It is suggested that you wrap dental floss around the transfers to create a matrix upon which the pattern resin can be applied. We highly recommend this technique, doing it at this phase avoids the need for a fit verification jig in (pictured to the right) subsequent appointments.

Once the impression copings are placed (and luted together if you so choose) you may use medium or heavy-body impression material around the copings. On the laboratory work authorization please indicate something like the following:

“fabricate implant-retained occlusal rim for bite registration for future hybrid denture and fit verification jig”

We will return a screw-retained bite rim which will provide a very stable platform from which to take your bite registration. In addition, if the impression transfers were not luted together with pattern resin intraorally, we will make a Fit Verification Jig (pictured to the right) to verify the accuracy of the implant model. Following are the instructions for trying in the jig:

Step 1 Remove healing collars
Step 2 Screw in the duralay jig on one end - hand-tighten.
Step 3 Verify the remaining posts are engaged and not encumbered by tissue, visually, & w/explorer.
Step 4 If there is a question about engagement, capture an x-ray.
Step 5 If a post(s) is not engaged, section the jig, engage and reduralay.
Step 6 If you sectioned, pick up the jig in a new impressions (no blockout under the bar) using long screws if possible.
Step 7 The new pick-up impression will be poured and used as the new, verified master cast.

You can now replace the provisional prosthesis, and, in most case, fill the screw access hole with light-body impression material for easier retrieval during this process.
Consider the Need for Multi-unit Abutments (TMA’s)

Multi-unit, or Transmucosal abutments (TMA’s), are permanent fixtures used for three primary reasons. First, they bring the restorative platform of an implant from the bone level to the tissue level which prevents 'sluffing' tissue around the implant during restorative and maintenance procedures. Second, they redirect the trajectory of the prosthetic screws to a more aesthetic or functional direction preventing access holes from emerging through undesired locations on teeth, especially the facials. Third, they can correct angles of divergently placed implants allowing a common path of insertion. In our experience, multi-unit abutments are used in 50% of edentulous, fixed cases and are utilized in two common scenarios.

Scenario 1 – The treatment plan calls for an immediate provisional appliance. The surgeon or restoring dentist places the implants, aligns the TMA’s to a common path-of-insertion and screwemergence position to accept the provisional appliance, and torques them in. The TMA’s are the final abutments and will be used for the provisional and final appliance. In other words, there is no need to buy additional abutments for the final restoration in this scenario. It would be prudent to discuss with the placing doctor who will bear the cost of the parts needed for the immediate provisional conversion. The only parts needed for the final definitive restoration of the case are abutment-level impression copings and analogs.

Scenario 2 – Implants have been placed as a Two-Stage surgery. The patient will present after successful osseointegration with healing abutments in place. It is important, at this time, that careful analysis is followed to determine the need for TMA’s and the correct angles and cuff heights.

The need for these components should be determined at the very beginning of the process before any final impressions or prosthetic work is done. We suggest the following procedure as the first step in the restoration process:

2. Take an accurate alginate impression of the arch making sure that the healing abutments are present and visible on the ridge showing the angles of the implants; or take a reline impression inside the duplicate denture capturing the position of the healing abutments.
3. Provide the deepest probing depth around each implant, or send an implant-level impression.
4. Send this information to the lab. We will determine the abutment angles needed from either one of these procedures by relating the implant position and angle to the position of the teeth on the duplicate denture.
5. The appropriate parts can then be ordered and the final restorative process can begin.

Consider the Cost of Multi-unit Abutments in your fee

The cost of TMA’s can be as much as $345 each, and together with multi-unit impression transfers and healing caps can be $510 per implant. Ordering parts directly or using aftermarket parts can reduce the total. The probability of this cost should be taken into consideration when quoting fees. It is also important to note that ROE does not include multi-unit abutments, impression transfers, cover caps and analogs in our All-in-One fees, since many cases do not require them and often they are provided to us by either the restoring or placing doctor.

TMA Selection & Confirmation Jig

During surgery (as described in Scenario 1 above), once the implants are placed, the doctor must decide which angle and cuff-height is appropriate for each TMA. The angle selected and how they are placed will ensure that the screw trajectory is aiming to the correct location on the prosthesis. One method is for ROE to create a clear duplicate of the immediate denture with troughs cut into areas where the screws should emerge. The abutments are tried-in with the seating handles attached, and maneuvered until the handles protrude passively through the troughs. This will ensure accurate selection and placement.
Step 3: Bite Registration & Model Verification

Within a few days, ROE will return an implant occlusal rim similar to the one to the right. There should be at least two copings embedded in the rim in order to stabilize and affix the rim in the correct position with screws. From this point forward, other than dealing with screwing and unscrewing the prosthesis, everything is essentially basic denture work. Midlines need to be marked, shades taken, and moulds requested. In most cases the palate of the occlusal rim will be removed (maxillary) so that this more closely resembles the final product. Once the occlusal rim is affixed you can take a bite registration using whatever bite material you prefer.

Step 3 cont’d: If everything fits accurately and the bite registration has been successful, you may reinsert the provisional and place light-body impression material in the screw access holes once again. If you have not already done so, now is the time to take the impression of the opposing arch. You may now return the model, occlusal rim, tooth shade, bite registration, fit verification jig and opposing model (or impression) to the lab. The prescription should read something like:

“Model verified and bite registration taken. Fabricate wax try-in for future hybrid restoration”.

Step 4 a: Conventional Framework & Tooth Try-In

ROE uses state of the art technology to design all of the iRIS CAD/ CAM titanium substructures for optimum performance and esthetics. We can design the substructure to your specifications, however we have several standard designs. The “full wrap” design is our default and most popular design due to its adaptability. We will mill the titanium substructure and return it to you with teeth set in wax for a final try-in.

Seat the try-in to ensure fit, we suggest taking an x-ray to confirm the bar is seated to each implant interface when screwed into place. Like a typical denture check phonetics, esthetics, and lip support. One noticeable difference here is that all of the lip support is provided by the teeth. There is minimal denture flange on these prosthesis. If more support is required than what is provided by the wax try-in, then the necks of the teeth can be moved labially, or the appliance can be changed to an overdenture with a flange.

Once the try-in is complete, return to case to the lab for the final stage. On the prescription you may indicate something like the following:

“Try-In Approved, finish final Hybrid Restoration for final insertion”

If you desire changes or additional try-ins, this is the time to notify the lab of what changes. The final appliance will take at least 8 working days to produce.
ROE also offers the Prettab Bridge (TLZ-IB) as a final restoration. This prosthetic requires discussion earlier in the process: set-ups, cantilever, costs, parts, opposing materials are different from conventional hybrids.

The prototype is a scanned/designed/milled reproduction of the screw-down set-up. Patients will wear the prototype for a few weeks to a few months, until the patient and dentist are 100% satisfied. The prototype is milled from polymethylmethacrylate and modifications can be made during this time period. The appliance is then returned to the laboratory for scanning. This process can take just one day in the lab and can be returned for the patient to wear, while the final zirconia prosthesis is fabricated. The final prosthesis will mimic the prototype.

**Step 5: Final Seating**

**Conventional Hybrid**

When the appliance is placed, it should seat firmly against the soft tissue. The design of the tissue interface of the hybrid should be such that it causes the tissue to roll over the prosthesis on the buccal and lingual aspects (figure 3). If the ridge shape will not allow this, we will keep the footprint of the appliance on the tissue as small as practicable.

**Prettau Bridge (TLZ-IB)**

Prettau is a full contour zirconia restoration, labially veneered and durable. This appliance must follow a prototype, screw-down appliance. Prettau is screwed in and the doctor must decide between impression material or composite to fill the screw access holes. Impression material is idea if the appliance is to be removed regularly for hygiene. Some appliance are rarely removed and composite is utilized. It is important to refine all aspects of the final prosthesis in the set-up and prototype phases, to minimize adjustments to zirconia.

**Summary**

ROE's final hybrid is culmination of years of experience with fixed implant supported restorations. We use nano hybrid teeth from Heraeus Kulzer, CAD/CAM titanium bars designed with special individual tooth posts for maximum retention (figure 4), pressure injected acrylic with Ivocap, and a separate analog model for processing. The final bar is designed virtually inside the approved denture set-up ensuring ideal design for acrylic and tooth life.

Our comprehensive service includes the provisional denture, the definitive hybrid prosthesis, custom trays, models, special soft-tissue model, articulation, standard and processed bite rim, fit verification jig, set-ups, resets, acrylic finish, one full set of premium teeth, one set of economy teeth, protective night guard, iRis titanium CAD/CAM components, final screws for the bar, analogs. Price excludes in-office technician labor, impression transfers, abutments, shipping and tax. These fees represent maximum costs for the specified design. Actual fees may be less depending upon processes which may not be required or might be performed clinically. Individual fees will be itemized and billed at the time service is rendered. Prices are subject to change without notice.

Ask about our chairside denture conversion $600 (Ohio). Our experienced technicians arrive at your office with all the materials and tools necessary to convert the provisional prosthesis. We also provide a fully guided CT-based implant placement service.
### FINAL HYBRID RESTORATION STEPS

**APPOINTMENT 1**

Using a custom, open tray capture impression and send to the laboratory.

![Impression Image]

**APPOINTMENT 2**

Receive 'fit verification jig' from laboratory and screw-down bite rim. Capture bite registration. Try in the jig. If jig does not fit passively, section and reconnect with pattern resin. Then pick-up the jig in an open tray impression. This will form the new master cast.

![Jig Image]

**APPOINTMENT 3**

Screw in the set-up and verify all aspects. Make adjustments as needed. Capture bite if necessary for another try-in. (if TLZ-IB restoration, skip to bottom section)

![Set-up Image]

**APPOINTMENT 4**

Try-in hybrid (teeth set in wax). Return all observations to ROE for any adjustments.

![Try-in Hybrid Image]

**APPOINTMENT 5 (based on appt 4)**

Confirm hybrid

![Confirmed Hybrid Image]

**APPOINTMENT 6**

Final Seating

![Final Seating Image]

### FINAL TLZ-IB ZIRCONIA BRIDGE STEPS

**APPOINTMENT 4**

Seat Prototype PMMA, remains in mouth for 2-4 weeks. Make adjustments as needed. Return modified prototype for final.

![Prototype PMMA Image]

**APPOINTMENT 5**

Seat final TLZ-IB

![Final TLZ-IB Image]
Quick Steps - Hybrid Denture & TLZ-1B Prettau Bridge

1. Impression
2. Try-in
3. Contour set-up
4. New impression
5. Skip to step 5
6. Set-up
7. TLZ-IB Prettau Bridge
8. CAD/CAM
9. Final Prettau Bridge

Office Steps

Laboratory Steps