



FALL 2021 NEWSLETTER

Restorative Movement of Mal-aligned Teeth: A Collaborative Approach

By Josh Rogoff on June 18, 2021

One of the most challenging situations for a restorative dentist is the restorative movement of teeth. Having a vision of the outcome before a bur touches a tooth is imperative.

The most challenging aspect is how to prepare teeth most effectively to achieve the desired outcome as determined by both dentist and patient. This article will outline a step-by-step approach taken by both the dentist and ceramist to make these tough clinical situations more predictable.

Planning the Restoration –The Dentist

After collecting comprehensive diagnostic information – including a medical and dental history, photos, radiographic images, appropriately mounted diagnostic models, and a comprehensive exam of all oral structures including muscles and joints – a thorough interview of the patient's esthetic expectations is vital. Once the data is collected and analyzed, the patient is presented a review of findings via Keynote. This provides the patient an additional opportunity to review esthetic expectations. The patient pictured in Figure 1 was previously treated with ceramic veneers on teeth #7, #9 and #10, and a full coverage crown on tooth #8. The existing restorations had several cracks, and the patient wasn't pleased with the lingual position of #7 and #10. The agreed upon goal is to normalize the arch form. The challenge



Figure 1: Pre-op diagnostic images.

is how to bring #7 and #10 out facially without making them appear too narrow. Rather than putting this in the hands of the ceramist to figure out, a rough wax-up (Figure 2) is created. If the arch form was fully normalized, the lateral incisors did appear too narrow. Figure 2 is the agreed upon compromise as determined by the patient and dentist. The lateral incisors will remain slightly lingual to the centrals, which allows us to maintain acceptable length-to-width ratios of all incisors. Working within the confines of the canines not included in the restoration is normally a challenge.



Figure 2: Only #7 was waxed to move the tooth facially. #10 is unwaxed to demonstrate to patient the compromise of length to width ratio.

This "rough wax-up" is included in the diagnostic package that is then sent to the ceramist, Michael Roberts of CMR Dental Lab. Other items in the diagnostic package included unaltered mounted models, radiographs and photographs. This is presented to the ceramist in a presentation (Keynote) format. The presentation includes annotations to help guide the ceramist.

Planning the Restoration –The Ceramist

The ceramist analyzes the diagnostic data to ensure accuracy. This includes an analysis of the stone models (or scans) to ensure CEJs, papillae and the palate are all represented accurately as well as the bite registration to ensure models articulate properly. Photos are analyzed – most importantly the full-face smiling photo, paying careful attention to having the face level with the horizon. Expectations of the case are then reviewed. If any goals of the case aren't clear, the dentist and ceramist must communicate before they proceed. Once approved, the analog models are converted into a digital format.

Using 3Shape, the 3-D model is virtually prepared with the dentist's guidance and overlaid and aligned with the pre-op model using the provided photographs. We now have a virtual representation of the analog diagnostic information. This provides the basis for the creation of a diagnostic wax-up based on facially generated esthetics. The model can then be analyzed to show how much

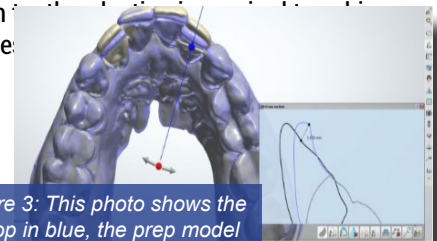


Figure 3: This photo shows the pre-op in blue, the prep model in gray and the design in ivory. The design is represented as a black line in the 2-D cross-section. They then would create a combined output model and Completed virtual wax up rendering.

As seen in the cross section of the wax-up (Figure 3), the design is additive and reductive. If the dentist were to press a mockup based on the final design, it would not fit the patient's current dentition. To ensure predictability, we need a way to know where to reduce before the pre-prep mockup is pressed. 3Shape has the ability to create a combined output model. This model includes only the additive portions of the design overlaid on the patient's current dentition. A copyplast matrix will then be produced based off the combined output model to show the dentist where to reduce. A copyplast based on the final design is also produced.

Preparation Day

On preparation day, the first step is to use the combined output (additive only) copyplast to create a pre-prep mockup.

To continue this article, please visit: <https://www.speareducation.com/spear-review/2021/06/restorative-movement-of-mal-aligned-teeth-a-collaborative-approach>

Shade Selection for Posterior Teeth ~ Lab Communication Essentials

By Robert Winter on August 13, 2021

Shade selection and lab communication can be challenging in some cases. Fortunately, in most clinical settings a seamless blending of the esthetic outcome is less critical in the posterior region of the mouth.

Vita Classical Shade Selection

Evaluate the shade of teeth in the gingival third to select the hue and chroma. The occlusal third has less chroma because the enamel is approximately 1.5mm thick. Typically, the occlusal third is higher in value (brighter) than the gingival third.

If the expectation of shade match is beyond matching the shade tab, photographs will be required to give a "mapping" of the esthetic appearance and characteristics of the teeth. It is not necessary to take a shade on the lingual – if the patient is concerned with the esthetic appearance on the lingual, do not start treatment!

When taking a posterior tooth shade, the operatory light may be needed to get more light on the teeth and shade tab. Use the Vita Classical shade guide to select the "best" match to the teeth.

Recommended Photographs

Remember, virtually all ceramic materials manufactured are only made in the Vita Classical shades. If a better shade match is achieved using the Vita3D Master shade

guide, communicate that along with the closest Vita Classical shade to the technician. If you want an esthetic match beyond matching the shade tab, there are several photographs that are extremely useful to achieve a good esthetic match. More time is invested in the restoration fabrication and a higher level of skill is needed by the technician, so there may be higher fees for the service. Do not rely on the shade suggested by your intraoral scanner. The following are the photos I recommend sending with the case.

Shade Tab Next to Teeth



It can be challenging to get the proper angle and having enough light on the teeth and tabs. The check retractor can impede proper access. Take the photograph directly without a mirror. Hold the tabs

vertically or horizontally in the same place as the buccal surface.

Occlusal Photograph of the Adjacent or Contralateral Tooth -

If you believe the 3D Master tab is the best match, try to get both the classical and master tabs in the same photograph. If this is not possible, take two photographs, one with each tab. If you need to take two photos, there may be slightly different exposures and light reflection which makes comparison of the two photographs more challenging and inaccurate.

If you or the patient want a natural appearance to the occlusal surface, the occlusal photograph is essential. In my experience, approximately 98 percent of posterior restorations are fabricated without occlusal staining

based on patient desires. Another one percent have slight staining added, and the remaining one percent are looking for a "natural" looking outcome. Be sure to note what you are looking for in this area.



Figure 1: Select shade match or desired shade using both Vita Classical and 3D Master guides if necessary.



Figure 3: Photograph preparation.



Figure 4: No occlusal characterization.



Figure 5: Completed case, before (left) and after (right).

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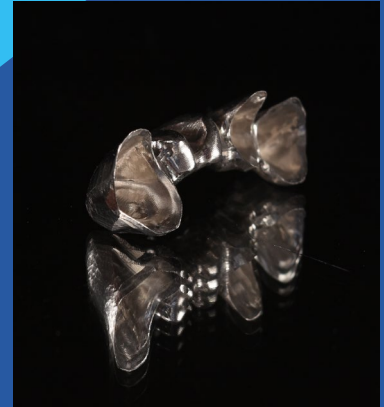
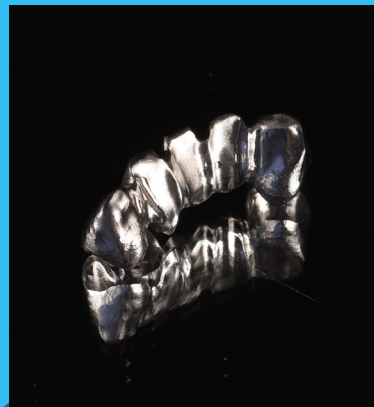
Occlusal View of the Preparation -

This photograph (Figure 3) is helpful to the technician when determining if masking is required due to discoloration of the tooth on the pulpal floor. The thinner the ceramic in the central groove, the more critical this becomes. The discoloration can shift the value of the occlusal surface and the restoration can appear more "gray".

Final Recommendations

If you follow these recommendations, you will provide the technician with more information so they can fabricate a posterior restoration with more predictable esthetic outcomes. Consider providing the technician with photographs of the complete case, as it provides an unbelievably valuable learning experience.

To find out more regarding Selecting Shades for Posterior Teeth and Lab Essentials, Please Visit: <https://www.speareducation.com/spear-review/2021/08/posterior-tooth-shade-selection-lab-essentials>.



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