

Which Material to use?

As we continue to shift in the direction of metal free restorations it is imperative for both the dental clinician and technician to understand differences in materials as each one has the ability to achieve different things. If we consider ourselves a team working towards the same goal, we should be on the same page at all stages of the treatment plan. When the doctor provides the necessary information as well as the objectives of the patient, it makes it easier for the technician to choose a material that will deliver the best outcome.

Trying to associate each material with its unique brand name can be confusing, especially now when there are so many. We receive a lot of training and education on products at the lab but at times it can be overwhelming for our doctors. Although we generally do make suggestions based on the circumstances of the case, it is beneficial for doctors to be familiar with the different options. The easiest way to differentiate products is to understand the technique or technology that each employs. We can break this up in to roughly four different categories and then look at some general guidelines.

- 1.) **Feldspathic** (Veneers on refractory die): Oldest system in metal free technology. Used when there is a conservative prep design in order to preserve the natural tooth structure. Indicated primarily in the anterior region for teeth with good underlying dentition.
- 2.) **Pressable Ceramics** (i.e.; Empress, Authentic): After waxed, sprued, and pressed to ingot, cut-back and layering technique is used to achieve desired aesthetics. Doesn't have the masking ability that zirconia would if the tooth is darker.
- 3.) **Zirconia** (i.e.; Lava, Procera, InVizion): Copings are designed and fabricated by CAD/CAM milling machines. The coping is designed with the required thickness needed for unsupported porcelain to maximize the longevity of the restoration. This is the strongest of the layered all-ceramics. Can be used for crowns, bridges, and implant abutments.
- 4.) **Lithium Disilicate** (e.Max): This universal material is either pressed or milled from a variety of translucent blocks/ingots. Applications include full crowns, veneers, implant abutments, and three unit anterior bridges. Can be pressed as thin as .3 mm but must consider the stump shade of the prepared tooth. Incisal cut back is done on anterior restorations for added porcelain effects. A Shoulder/chamfer margin is needed for full contour crowns and sharp angles should always be eliminated. The full contour structures are stained and glazed which eliminates the possibilities for porcelain chipping and therefore increases the strength and durability of the restoration.

When selecting the best material choice, you should consider the following factors; stump shade, occlusion, single unit/bridge, and also cementation preferences. You should also consider the possibility of any future needs of the patient so that similar materials can be used for optimal esthetic matching. It is always good to keep accurate records of the specific type of crown or bridge, product, and the shade of the patient. This way if something needs adjusting or future work is needed, a more predictable result can be expected. To ensure the success of the material chosen, check all requirements of the product at hand. Proper prep design is a must when it comes to all ceramics as sharp angles and feather edged margins can lead to early failures. Also, the required thickness of each product can vary and so the specific guidelines should always be followed. If you have any questions regarding materials or a particular case we encourage you to give us a call so we can discuss the best treatment plan for your patient!