When trying to reach the highest esthetic results in our crown and bridge work, consideration for stump color is very important with regard to material choice. If there is no communication about color tone, we can’t create the best translucency effect, especially when there is a porcelain jacket or pressed material involved. If we fabricate a zirconia crown, even if we make a porcelain butt margin, the finest esthetics for the gum line will elude us without covering the stump color effectively.

Unfortunately, the stump shade tool most clinicians use is monochromatic in color and doesn’t allow for tone variations. If the doctor sends a picture while holding the monochromatic shade tab up to the patient’s prepped tooth, the results will be a little better. But many clinicians send their cases without a picture, so we have limitations when trying to create the best color match for our restorations.

I’d like to demonstrate the importance of patient tooth color, especially stump shades that include post/core and color variation in the margin area.

CASE STUDIES
In the case of this first patient, stump shades are checked using traditional stump shade tabs (Fig. A). Although the match is acceptable, it does not show the true variable colors of the patient’s teeth due to its flat and unnatural tone. Using the LSK Simple Enamel and Prep Color Guide (Fig. B) provides a code and photograph for the patient’s stump shade. The Illustrated Simple Enamel and Prep Color Guide indexes the content of the guide (Fig. C).

Fig. A: Traditional stump shade tabs aren’t a good match for the multiple colors in this patient’s stump shade.

Fig. B: The LSK Simple Enamel and PrepColor Guide provide a code and photograph for the patient’s stump shade.

Fig. C: Illustrated Simple Enamel and Prep Color Guide indexes the content of the guide.

Fig. D: Two traditional stump shade tabs don’t quite capture the multiple colors in this patient’s stump shade.

Fig. E: The Simple Enamel and Prep Color Guide has the capacity to cover the patient’s multiple stump colors...

Fig. F: ...light to dark—all in one tool.

Fig. G: The stump color for our next patient does not match up well with a traditional shade tab...

Fig. H: ...but is best described using two different stump colors for two different teeth.

Fig. I: Again, we have a very dark stump color, best described as an APC 8.
Guide, post, core and variable stump colors are closely matched (Fig. B) which leads to a more complementary tone when the restoration is complete.

The Simple Enamel and Prep Color Guide communication tool (Fig. C) displays 16 after prep colors ranging from intraorally light to multiple colors to post core and very dark. In our second case demonstration, teeth Nos. 7 and 10 will be given new veneers (Fig. D) and the stumps are lighter in color than teeth Nos. 8 and 9. In fact, there is a dramatic difference in the stump shades between these four teeth and the porcelain work will have to reflect this accordingly in order for all of the work to match. The full effect of the light to dark colors in the patient’s stump shades (Figs. E and F) are compared to the Simple Enamel and Prep Color Guide, which ranges from APC (After Prep Color) 6 to APC 13.

In this example, a traditional shade tab is compared to the stump of our third patient’s tooth No. 7 (Fig. G) and then to the Simple Enamel and Prep Color Guide (Fig. H), to give you an idea of the very dark color we will try to mask. It registers as an APC 13. The next patient’s tooth No.12 is compared to the Simple Enamel and Prep Color Guide with a dark APC 8 shade (Fig. I).

The last patient case demonstration is a very difficult stump color to blend (Fig. J) because the color is dark in the body area but lighter at the incisal and gingival. A traditional stump shade tab does not fully take into account the variation of colors the final restoration will be covering. The Simple Enamel and Prep Color Guide, with its multiple possibilities, has available two different colors that match closely enough to help the technician properly mask the colors (Fig. K), with APC 13 being one. To cover the areas effectively, the technician will need to use several porcelain colors. The crown, upon completion, is placed on the cast model for fit and contour check. It is then displayed on a mirrored surface (Fig. L), and again as it is tried in the mouth (Fig. M). Finally, after cementation, a retracted view (Fig. N) expresses the harmony and blending of the color.

CONCLUSION

Technicians need a specific guide as their communication tool with a prescribing clinician if they are going to get the best case results for their patients. Especially for anterior restorations, we cannot mask stump color properly if we don’t know what we’re masking and where. If dark prep color been a problem for you as you work on your ceramic crowns, think about how you can help yourself solve this issue. The more details you have, the better off the patient, the clinician and you will all be as you work to produce the best esthetic results.

ABOUT THE AUTHOR

Luke Kahng, CDT, owner of LSK121 Oral Prosthetics (www.lsk121resources.com), has published more than 40 articles in major dental publications. He is the author of the recently published Anatomy from Nature, with 50 illustrated pages and the Esthetic Guide Book featuring 31 patient cases from a single anterior tooth to a full mouth reconstruction. His latest book, Smile Selection + CS³ Clinical Cases, will be published in 2010. He also is the inventor of the patent-pending Chair Side Shade Selection Guide and the Simple Enamel and Prep Color Guide, showing more than 150 zirconia fabricated restorations based on patient enamel and translucency research.