



Luke S. Kahng, CDT

Custom shade matching with an anterior implant case

Ensuring proper esthetics in an obvious spot.

by Luke S. Kahng, CDT

Our patient case study is a female, late 20's, with an anterior implant on tooth #10, who wanted her case taken care of as soon as possible due to her upcoming wedding. She was very concerned about the color and shape of her new crown when she presented for her custom shading appointment.

Many times, lithium disilicate is the material choice a technician will use for a case such as this one. But the author has noticed that the hole in the implant can create a gray tinge in the crown after placement, which means it will not match with the adjacent teeth. If the hole is filled with composite before the try-in stage,

it can help with that tinge somewhat. But the best way to be sure that will be covered is to use zirconium as the material choice.

A hint regarding this situation is that if the abutment is not thick facially, the hole will be more difficult to disguise because the coping will be too thin. When the adjacent teeth are high

FINDING THE RIGHT ANTERIOR SHADE



Fig. 1 Zirconia abutment #10



Fig. 2 B1 color base



Fig. 3 Amann Girschbach copings



Fig. 4 Pre-shaded copings



Fig. 5 GC Initial ZR Body colors A and B



Fig. 6 Body and Bleaching colors are a 50/50 mixture



Fig. 7 GC Initial Lustre Paste colors



Fig. 8 Mirrored image



Fig. 9 Try-in



Fig. 10 Side view with hydration



Fig. 11 Side view without hydration



Fig. 12 Side view after polish



Fig. 13 Side view



Fig. 14 Partial view, final

opacity white, this will be a problem with color matching. Our case study patient fit into this category which meant that zirconia had to be her material choice.

However, if the adjacent teeth have a gray tint then this is not really a problem. It really is a case-by-case basis based on the patient, the thickness of the coping's facial area and how the abutment is placed. It also depends on the adjacent teeth, as discussed, because, as an example, an elderly patient will not have as much enamel as a young patient, which means their natural teeth will also have a gray tinge to them. The young patient, however, will not have that situation in her natural dentition.

CASE STUDY

01 A zirconia implant had been placed on tooth #10 (Fig. 1) when the patient presented for a custom shade appointment. Her base color was B1 with high opacity (Fig. 2) and the author immediately check her mandibular color in order to ensure total harmony with the maxillary crown. She had bleached her teeth and it was determined in the final diagnosis that her white enamel color had a very subtle gray tone.

02 After milling, zirconia copings from Amann Girrbach (Fig. 3) are one color and pre-shaded copings with

out color have this appearance (Fig. 4).

03 The next step in the process is to apply porcelain to the coping, pictured here—GC Initial ZR Body A and B colors (Fig. 5) and some of the other available colors in (Fig. 6). Body and bleaching colors are mixed in a 50/50 ratio for the technician's convenience.

04 Next, we have a finished crown image (Fig. 7) with available colors from GC Initial Lustre Paste choices. In order to achieve certain color tones, it is possible to mix together the Lustre Paste colors and get exactly what we want. The author mixed white, gray and blue to get his correct color for this case. The mirrored image of the coping shows a high opacity finish with subtle translucency (Fig. 8) in order to match the patient's dentition.

05 The author tried the crown in partially for a fit and color check (Fig. 9) and then completely with a side view hydrated shot (Fig. 10). Again, the patient was photographed with a side view, this time dehydrated (Fig. 11).

06 After polishing, the crown has this side view appearance (Fig. 12) and a slightly different side view angle (Fig. 13) here. A partial side view with the restoration in place (Fig. 14) is an immediate after insertion view, with

the patient giving a smile to the camera.

CONCLUSION

In order to match adjacent teeth we must evaluate them for not only color but opacity and translucency as well. We must also check the after prep color—and the implant zirconia abutment placement as well if one is involved—especially the thickness of the facial area. This relates to the coping thickness which will help create high value and opacity. Enamel modification can be applied according to the facial thickness, as we have discussed, but we must also take into consideration tooth morphology for harmonious blending of color. If the angulation is decreased, convexity must be increased. All of the information we gather during the custom shading appointment leads to the final shade match—always trying to mimic nature and get the results she created. [lab](#)

ABOUT THE AUTHOR

Luke S. Kahng is an accomplished lab technician specializing in high-end ceramic restorations. Frustrations with the shade matching systems available to him inspired his creation of the Chairside Shade Guide. Originally comprised of Volumes 1 and 2, it was later expanded into a unique ceramic shade guide system, the Seasons of Life Selection. As an active contributor to the dental community, he has also held positions on several major dental journal boards, and is frequently a keynote speaker at numerous conventions, labs or his own lab-hosted seminars. Luke is also the owner and president of LSK121 Oral Prosthetics, high-profile entity. Located in Naperville, Ill., LSK121 provides oral restorative services and assistance transnationally.