About the author

Luke S. Kahng, CDT, is the owner of LSK121 Oral Prosthetics, a dental laboratory. He has published over 35 articles in major dental publications. He is the author of the recently published Anatomy from Nature, with 50 illustrated pages of full contour wax-ups, stone models and porcelain teeth, all re-created using natural teeth as a guide.

His new Esthetic Guide Book features 31 patient cases from a single anterior tooth to a full mouth reconstruction. He invented the Chair Side Shade Selection Guide featuring over 150 zirconia fabricated restorations based on patient enamel and translucency research, with patent pending.

Luke S. Kahng will be a guest speaker at the upcoming Spectrum dialogue Techno-Clinical day in Chicago 2010.

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Introduction to GC One Body Concept

What is One Body Concept? It is feldspathic based, blended porcelain which gives the option of A, B, C and D shade possibilities. The product was invented with the goal of saving your laboratory time but still delivering high accuracy and fewer remakes through repetition in shading. How is it different? One Body offers a one-color porcelain build-up powder so does not require an enamel translucency build-up. Instead, those characteristics will be yielded with GC Initial IQ Lustre Paste, a porcelain particle with stain, since One Body is not meant to be applied on the incisal area. One Body Concept works with conventional porcelain alloys, but by using only one porcelain powder.

As we have all noticed, the field of dentistry has been exploding with new computer technology. The latest inventions are CAD/CAM and digital impressions, all revolutionary and intended to improve the working lives of clinicians everywhere. But what about dental technicians? Has all this technology changed the way they create their restorations? For the most part, no, it hasn’t affected the way they are layering porcelain at all.

Technicians are using a tried and true system and since it works, there has been no reason to change. And frankly, in my opinion, layering porcelain is still the best way to create life-like restorations about 70% of the time. But what about the other 30%? Has anyone invented another way to get the same results? That is what we will discuss in the following case studies, along with how to communicate better information regarding patient shading.
Laboratory Procedures

In the first case we will talk about, teeth numbers 7 and 8 were covered by crowns made with very nice enamel overlay to the dentin, which created a natural and life-like appearance, but they were not a match with the adjacent teeth (fig. 1).

This is because teeth numbers 9 and 10 were restored using PFM crowns which had grown old over time and were opaque in color. The prescribing clinician had chosen shade A-2, which all alone will create that opacious look. We were being asked to match those ten year old crowns and the question was: how? We could have used opacious dentin and less translucency but the new GC One Body Concept was also a possibility. So why not try it and see if we could save our time and effort?

If the results are the same, what difference could it make? A prep view of tooth #9 compares with the LSK shade guide A-2 dentin color (fig. 2).

The incisal tip is clear and after checking it with the same shade guide, it reminded us to mimic that appearance (fig. 3). A-2 Opaque color was applied to #8 (fig. 4) followed by the build-up of “A” shade to the body of the crown (fig. 5). Again, a GC One Body build-up is
applied in shade “A” but this time to tooth #7 (fig. 6). After firing at 900º C, the crowns’ appearance is very bumpy – almost like the concrete surface of a sidewalk (fig. 7). Contouring and surface texture are created and put into the bisque bake stage before glazing (fig. 8).

GC Initial IQ “A” Lustre Paste is next applied to create the A-2 color (fig. 9). Subsequently, the clear incisal edge is created with a light grey color paste (fig. 10). The final restorations are displayed on the cast model (fig. 11). Next the final view (fig. 12) in the mouth is photographed.

In the next case, we were presented with an old crown on tooth #10. The first custom shade check was to determine the patient’s surface texture with the LSK shade
Fig. 13: A surface texture check is performed on tooth #10, an old crown, with the LSK shade guide.

Fig. 14: Preparation view for tooth #10.

Fig. 15: The A-1 base is opaque.

Fig. 16: The One Body Concept build-up is applied.

Fig. 17: Lustre Paste in a B shade is next applied to create incisal translucency.

Fig. 18: Vibration with a dental instrument helps spread the paste evenly, before firing at 780º C.

Fig. 19: The lustre paste was applied in a thin layer because if it had been thicker, it would not have matched the patient's texture.

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Case 2

guide (fig. 13 and 14) displays the clinician’s prep design.

The base shade for the restoration is A-1 opaque (fig. 15) with the One Body build-up applied next (fig. 16). The Lustre Paste application in a “B” color will create incisal translucency (fig. 17).

With a dental instrument in hand, vigorous vibration helped spread the paste evenly on the restoration (fig. 18) after which it was fired at 780º C.

The patient has surface texture which had to be a consideration in the final preparation, so the Lustre Paste was not applied too heavily. If it had been, the texture would not have matched with the patient’s adjacent teeth.
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Fig. 20: GC Gradia polish applied next to produce proper texture.

Fig. 21: With the help of a Robinson brush, the crown is polished and ready for seating.

Fig. 22: A try-in is completed on the cast model.

Fig. 23: The restoration is seated and photographed in the patient’s mouth.
Case 3

Fig. 24: Before preparation, tooth #5 will be a Maryland Bridge.

Fig. 25: Prepped occlusion view.

Fig. 26: Final inlay/onlay GC Milling Center bridge.

Fig. 27: Final restoration in the mouth.

(fig. 19). In the final step, the surface was polished using GC Gradia (fig. 20) and a Robinson brush (fig. 21).

The final restoration is displayed on the cast model (fig. 22) and in the patient’s mouth (fig. 23).

Our last case presentation involves a Maryland bridge for tooth #5, with before prep view (fig. 24). Next is an occlusal view of the prep (fig. 25).

The GC Milling Center in Costa Mesa, CA, fabricated the final inlay/onlay Maryland Bridge (fig. 26). The final is shown in the mouth (fig. 27).

Conclusion

As you can see from the case photographs, GC’s One Body Concept will give us esthetic results when the circumstances are right—about 30% of the time, especially for the molars. Porcelain layering still works best under most conditions, but why waste time and product unwisely if you don’t need to?

How do you know when that is? Look especially for the cases when you are asked to match a fake crown or a surface texture. Building up your porcelain is not required with those types of restorations and the One Body Concept, along with the porcelain particle staining, will work very well.

It is not limited to either posterior or anterior teeth; you can use it with both. The product recommends itself – give it a try.  

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