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Get in the Esthetic Zone: Implant Abutments

By Greggory Kinzer (/spear-review/author/greggory-kinzer/) on June 18, 2015 | (/bookmarks/bookmark/38

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Today we have more options than ever before when deciding on an implant (https://www.speareducation.com/spear-review/category/implants) abutment in the esthetic (/spear-review/2013/08/evaluating-facial-esthetics-facial-profile) zone. Should it be a custom abutment or a stock abutment? Should the abutment material be titanium, gold, zirconia (https://online.speareducation.com/course/adjusting-and-polishing-zirconia-restorations) or ceramo-metal? Although the decision is often left up the technician, I believe that it should be a joint discussion between both the dentist AND the dental technician.

In the esthetic zone, when deciding on a *custom* versus a *stock* abutment, it is important to remember the goals of the implant abutment. It is with the following two goals in mind that I find nearly all of my implant restorations in the esthetic zone are restored with custom abutments – or screw-retained restorations:

1. The abutment should support the peri-implant soft tissue, thereby creating an emergence profile that allows the implant restoration to mimic the soft profile tissue of the contra-lateral tooth.

2. Place the abutment crown interface in a location that will allow easy access ar
cementation process.

Figure 1: Custom zirconia abutment

Given the differences in implant position (depth, angulation, mesial-distal) and the different shapes and sizes of teeth, a custom abutment is still the best way to ideally support the soft tissue that was created in the provisional phase and place the cement margin in an easily accessible location. (Figure 1)

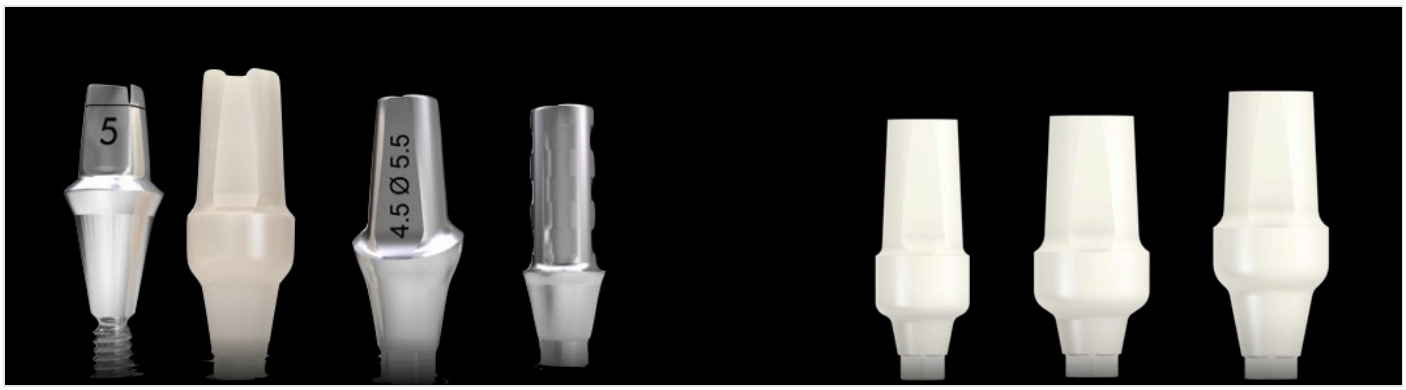

Figure 2: An assortment of stock abutments

It is well-documented in the literature that failure to remove residual cement can have disastrous long-term implications for the implant.[1] Although the contours and options for stock abutments have greatly increased, I recommend they be used more in the posterior where the bone/soft tissue contours are flatter, and ideal support of the soft tissue is not critical esthetically. (Figure 2)

(Click this link for articles on dental esthetics (https://www.speareducation.com/spear-review/?category=esthetics).)

The choice of abutment material can also have a significant impact on the final esthetic outcome. A 2012 paper by Jung[2] used a spectrophotometer to evaluate the color changes of the soft tissue by different restorative materials including titanium, titanium veneered with feldspathic ceramic, zirconia and zirconia veneered with feldspathic ceramic.

What I found was:

- *All* specimens induced overall color change of the tissue, which diminished with an increase in soft tissue thickness.

- Titanium induced the most prominent color change while zirconia induced the least.
- With a mucosal thickness of 3mm, no change in color could be distinguished by the human eye on any specimen, regardless of the material.

Figure 3: The use of a custom zirconia abutment enables ideal soft tissue support and raises the cavosurface margin to an easily accessible area to ensure cement removal

So, what this means to us clinically is that unless we have significant facial tissue thickness – either because the implant is placed palatally or because a subepithelial connective tissue was placed[3] – using a custom zirconia abutment will significantly improve the soft tissue esthetics. (Figure 3)

Figure 4: The use of a custom metal-ceramic abutment with a small diameter implant (3.0mm) that has thin facial tissue. This abutment design allows for strength and esthetics.

Unfortunately there are still some implants, specifically the narrow diameter implants, that do not have zirconia abutment options available. In these situations, it is often necessary to use a custom metal-ceramic abutment. (Figure 4)

With all of the material and technique options for implants that are available to us today, we should approach each patient individually and remember the treatment objectives when determining the correct implant hardware to choose.

(Click this link for more articles by Dr. Gregg Kinzer (https://www.speareducation.com/spear-review/author/greggory-kinzer/).)

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