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| **Name:** |
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| 5B-4 |
| **Basic Science Question:** |
| What is a custom abutment |
| **Report:** |
| Dental implants provide a very successful method of replacing missing teeth and restoring function and esthetics in certain cases. In order for one to understand the characteristics and clinical benefits of a custom abutment as part of a dental implant procedure, it is important to be informed on the basic components of an implant. When discussing a single tooth implant, there are three major parts: the implant itself, the abutment, and the visible crown. The prosthesis is osseointegrated to the surrounding bone through the threaded implant itself. The abutment is essentially a connection point between the aforementioned implant and the prosthetic crown.  Abutments can either be classified as stock or custom. The process involving custom abutment creation makes the product slightly more expensive than a prefabricated stock abutment; however, it affords the ability to provide a coronal emergence profile fit to the individual patient. In contrast, the natural gingival contouring is unable to be matched by stock abutments. The matching contour of custom abutments allows for the seating of an esthetic crown and serves a functional process as well, as there is a greater level of soft tissue stability through the utilization of custom abutments when compared to stock abutments. Furthermore, it eases cement clean up during the procedure, which can mitigate the chance of implant failure. For these reasons, custom abutments are the gold standard for single tooth implants, especially in anterior teeth.  The ability to develop a custom abutment is reliant on the provider to take a fixed level impression or intraoral scan before sending the case to their lab of choice where CAD/CAM imaging is used to design and develop the abutment. Prior to sending the case to the lab, the provider must decide what material to have the abutment made out of. The two major options are titanium and zirconia abutments. Zirconia holds an esthetic advantage, as it blends with natural tooth coloration. However, studies show that it may not be as strong as titanium. Upon return of the case contents, the provider can screw in the abutment, tighten it with a torque wrench, and cement the crown.  It is clear that implants provide a very esthetic and functional restoration. There are a number of factors that contribute to the overall effectiveness and durability of an implant prosthesis, such as the correct placement of the implant, a proper abutment, and a well designed and placed crown. Without all of these functional components, the implant is subject to fracture or failure. This highlights the importance of a custom abutment to fit the patient’s gingival contour. |
| **References:** |
| Bishara, M., DDS, Kurtzman, G., DDS, & Krause, E., DDS. (2020). Implant Restorations: Establishing a Proper Emergence Profile. *Compendium of Continuing Education in Dentistry,* *41*(8)  Lops D, Bressan E, Parpaiola A, Sbricoli L, Cecchinato D, Romeo E. Soft tissues stability of cad-cam and stock abutments in anterior regions: 2-year prospective multicentric cohort study. Clin Oral Implants Res. 2015.Dec; 26(12):1436-42.  Parpaiola, A., Sbricoli, L., Guazzo, R., Bressan, E. and Lops, D. (2013), Managing the Peri‐implant Mucosa. J Esthet Restor Dent, 25: 317-323. doi:[10.1111/jerd.12046](https://0-doi-org.libus.csd.mu.edu/10.1111/jerd.12046)  Steigmann, M., DDS, Monje, A., DDS, Chan, H., DDS, MS, & Wang, H., DDS, MS, PhD. (2014). Emergence Profile Design Based on Implant Position in the Esthetic Zone. *The International Journal of Periodontics & Restorative Dentistry,* *34*. |