

***Sterilization of Used and Contaminated Implant Healing Abutments and  
Impression Copings: A Cost Benefit Analysis***  
**Vanessa N. Browne**

**Abstract:** Implant manufacturers recommend the use of new implant healing abutments and impression copings for each patient. Significant savings could be realized with the reuse of implant components. The aim of this study was to examine the response of these components to standard steam and chemiclave sterilization protocols. Components from four test groups (20 new and 20 used healing abutments, 20 new and 20 used impression copings) were placed in 2 ml nutrient broth and incubated at 37° C overnight. Broth was examined for turbidity. 100 µl of broth from each tube was spread on nutrient agar plates and incubated as above. Plates were evaluated for growth. Half of the components in each group were processed with steam sterilization and the other half processed with chemiclave sterilization. After sterilization, components were incubated in 2 ml of broth pre-inoculated with *Enterococcus faecalis* for 24 hours at 37° C. Components were reprocessed with steam and chemiclave protocols, incubated and plated as previously described. Chemiclave and steam sterilization eliminated bacteria and sterilized components. Baseline data indicated that new materials arrive sterile, while used components had multiple bacterial strains evident. After sterilization and re-inoculation of *E. faecalis*, similar sterilization results were observed. This information suggests that implant components may be reused following sterilization. Further research is ongoing to evaluate the physical tolerance of implant components after multiple rounds of sterilization and bacterial growth on the surface of used and new components. However, from a strict microbial standpoint, sterilization can be achieved for used implant components.