The Great White Ultra bur kits organize a variety of shapes and sizes that are typically used in routine crown preparation. The bonus is that once the correct bur is selected, the entire preparation can often be completed without changing to another instrument. Bulk reduction AND a smooth margin are created with the same reduction instrument.

Clinical case No. 1
The preparation of the bicuspid crown is very rapid and straightforward. A single pass of the Great White Ultra bur reduces the bulk of the tooth at the height of curvature and finishes the chamfer margin simultaneously (Fig. 19). The inter-proximal preparation must be accomplished without mar ring the surface of the adjacent tooth. One of the thinner GWU burs may be used (Fig. 20).

The buccal surface is not smoothed out with a disc or diamond; the striations created by the bur increase the surface area available for adhe sion (Fig. 21). The occlusal reduction is completed to provide 1.5–2.0 mm clearance for the crown (Fig. 22).

The completed preparation, ready for impressions, is viewed from the occlusal (Fig. 23). The entire circumferential preparation was completed with a single Great White Ultra bur in a single pass.

Clinical case No. 2
The molar crown preparation is begun on the buccal surface (Fig. 24) and continued circumferentially as in the case above. The bulk and marginal preparations are completed at the same time. The completed preparation, ready for impressions, is viewed from the occlusal (Fig. 25).

The stone model is verified against the intra-oral preparation, and the crown is tried on extra-orally (Fig. 26). If the fit on the model is correct, then the crown is tried intra-orally and cemented on to the prepared abutment (Fig. 27). A circumferential preparation that has even depth throughout and adequate space for the restoration, as well as a well-defined margin (whether chamfer or shoulder), results in a well-fitting and long-lasting crown.

Clinical case No. 5
Some practitioners prefer to use depth grooves to guide crown preparation. The Great White Ultra bur is well suited to this task. The depth grooves are placed quickly and evenly to the desired preparation depth (Figs. 28a–d) at the same time that the location of the margin is determined.

The depth grooves are joined, maintaining the selected depth of the preparation and the location of the restorative margin (Fig. 29a, b). The occlusal surface is reduced to an ideal depth and shape (Figs. 29a–c) and the preparation, completed within a matter of minutes, is viewed from the occlusal (Fig. 29d).

It is reasonable to expect that Great White Ultra burs can be used for multiple tooth preparations, and that they can be cleansed effectively between patients. There are two important steps to follow for the proper sterilization of multiple-use tungsten carbide burs.

Step 1: Burs should be cycled through an automated washer such as the Hydrim (SciCan, Toronto, Canada), that provides rapid and effective washing, rinsing and drying with a single push of a button. The instruments may be cleaned manually, but they should be pre-soaked to loosen debris and handled with extreme care to avoid skin punctures. Avoid cold sterilizing solutions that contain oxidizing agents that can weaken carbide burs. Ultrasonic systems can be used as well. The re-use of solutions in these systems is less than ideal, however. Separate the burs from each other in a bur block during ultrasonic immersion to prevent damage to the cutting surfaces. Brush any remaining debris away with a stainless steel wire brush. Rinse and dry the burs.)

Step 2: It is only at this point that sterilization can be initiated. The importance of this step cannot be overstated. Only the effective sterilization of burs eliminates the threat of cross contamination to patients and staff. Steam autoclaves will effectively sterilize carbide burs, but some units may allow surface corrosion to develop. Metal bur blocks may promote galvanic corrosion and should be avoided. Both dry-heat sterilizers
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and chemi-claves can be used without corroding or dulling carbide burs.

Conclusion
Great White Ultra burs are an innovative solution for the crown and bridge tooth preparation process. The differential reduction provided by the varied cross cutting of the bur’s active surface allows intrasusal multitasking.

Great White Ultras simplify the clinical procedure by reducing the circumferential bulk of the tooth and preparing the final margin at the same time.

Rapid cutting, less structural stress and a more adhesive surface are additional advantages.

References

About the author

Dr. George Freedman is a founder and past president of the American Academy of Cosmetic Dentistry, a co-founder of the Canadian Academy for Esthetic Dentistry and a Diplomate of the American Board of Aesthetic Dentistry. He is the author or co-author of 11 textbooks, more than 600 dental articles, and numerous Webinars and CDs, and is a team member of REALITY. He lectures internationally on dental esthetics, adhesion, desensitization, composites, impression materials and porcelain veneers. A graduate of McGill University in Montreal, Freedman maintains a private practice limited to esthetic dentistry in Toronto, Canada.