

Dental Anatomy and Occlusion: Basic Anterior Tooth Preparation

Armamentarium

Diamond bur - #847
Football-shaped diamond bur - #379
High speed handpiece
Typodont
No. 2 pencil

Step 1: Reduce Incisal Edge

Reduce the incisal edge of the tooth approximately 2.0 mm following the shape of the tooth.

Step 2: Labial Surface

Starting on the mesio-labial surface and moving toward the distal, create a 1 mm shoulder all the way around the tooth, always keeping the tip of the bur diamond parallel to the surface that you are working on. Remember that this will be a supra-gingival prep, meaning that it ends above the gum in order to avoid damaging the gingiva. This preparation should end approximately 1.5 mm above the gum.

The convergence or taper of the tooth preparation from the gingival to the occlusal surface should be 3-5 degrees. Remember, it is important to maintain a 3-5 mm taper on the preparation so that the crown can be easily placed and removed.

Step 3: Mesial Surface

Approach the mesial contact, maintaining both the 1.5 mm shoulder and 3-5 mm taper while protecting the adjacent tooth.

Step 4: Lingual Surface – Shoulder

The lingual surface is prepared in two planes. First, the cingulum area is prepared with a shoulder; from the mesial contact, follow around to the lingual surface, outlining the 1.5 mm shoulder around the gingival edge. Cut through the cingulum, continuing to keep the bur parallel to the long axis of the tooth so that you do not over-taper the tooth.

Step 5: Distal Surface

Continue the shoulder preparation on to the distal surface, which should include about a 3-5 degree taper.

Step 6: Lingual Surface, cont'd

Using the football-shaped diamond, reduce the rest of the lingual surface by 2 mm to follow the contour of the tooth.

Step 7: Smooth & Sharpen

Using the diamond bur, smooth and sharpen the edges of the preparation. Clean up any discoloration or burn marks left by the fissure and football-shaped burs, but be careful not to "over-prepare" the tooth.

When looking down at the tooth you should be able to see the entire shoulder all the way around; if not the taper may not be sufficient and may need to be adjusted.

Step 8: Final Review

The completed preparation should be evenly tapered, with a clean, even taper and an incisal reduction of approximately 2 mm. The preparation should be smooth and should follow the anatomy of the tooth.