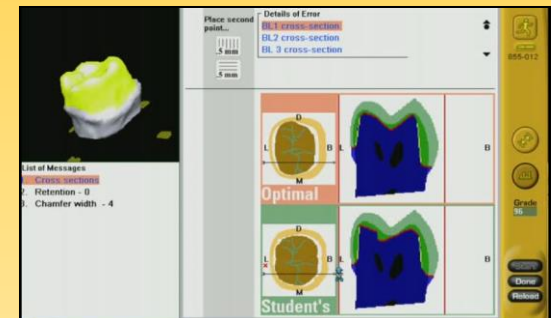
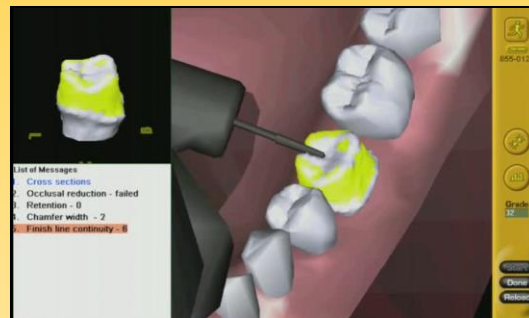


Advance Dental Simulation Module on Crown Preparation



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Introduction

Welcome! This module is developed to guide dental students in preparing Full Crown restoration using the Advance Dental Simulation Technology-DentSim®.

The first part of the module covers the Principles of Preparation for Gold Crown Restoration for Tooth #19 (36) as prescribed by DentSim ®.

The second part of the module covers the suggested step by step procedure in completing full crown preparation.

At the end of the module, students are required to complete the test to evaluate performance.



Objectives

Upon completion of this module, you will be able to:

- a. Understand the Principles of Preparation
- b. Identify the specific dimensions, forms and measurements of tooth reductions.
- c. Prepare accurately tooth #19 to receive Gold Crown restoration.



Part 1



Principles of Preparing
Tooth #19
for Gold Crown Restoration



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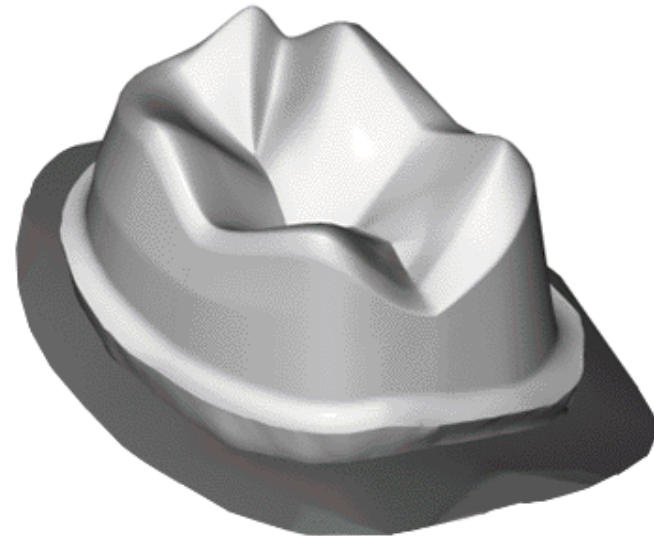
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Tips

- There are 16 Principles of Tooth Preparation for Gold Crown Restoration as prescribed by the DentSim®.
- Each of the principle will be listed in chronological order.
- More information will be provided by clicking the info button
- Use the forward arrow  to navigate through the course and backward arrow  if you need to review the previous slide.
- You may need to take down notes to remember all the dimensions and angulations for tooth reduction. Good luck!



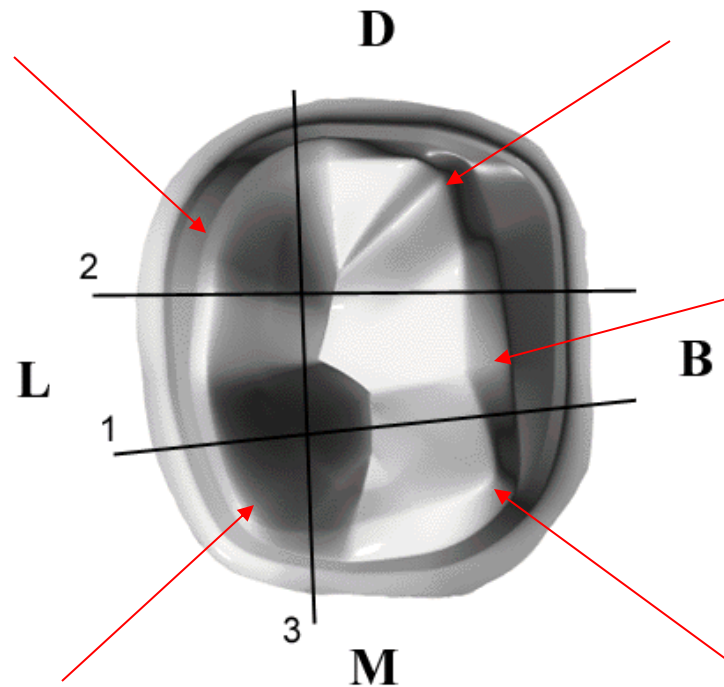
1. The minimum necessary tooth structure is removed.
2. No damage to adjacent teeth.
3. No undercut exists.



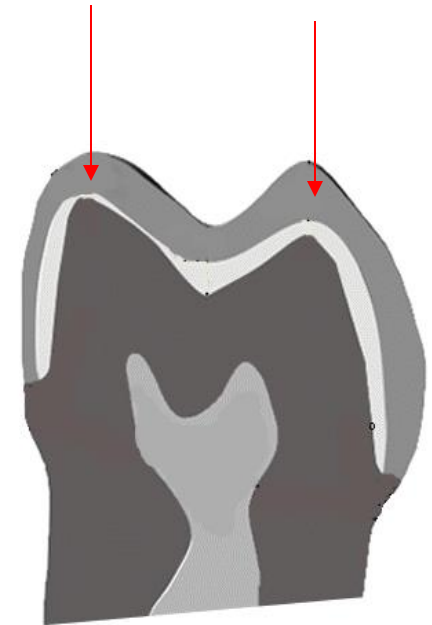
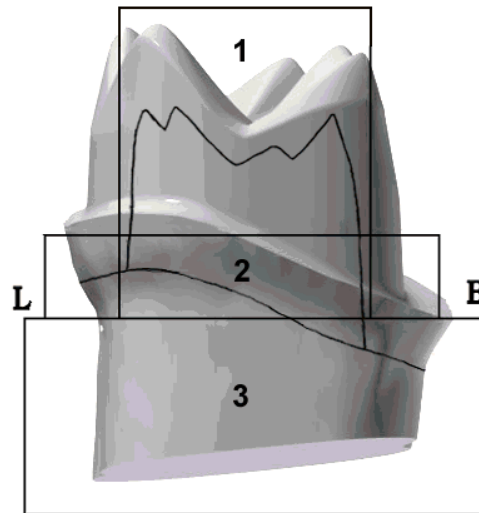
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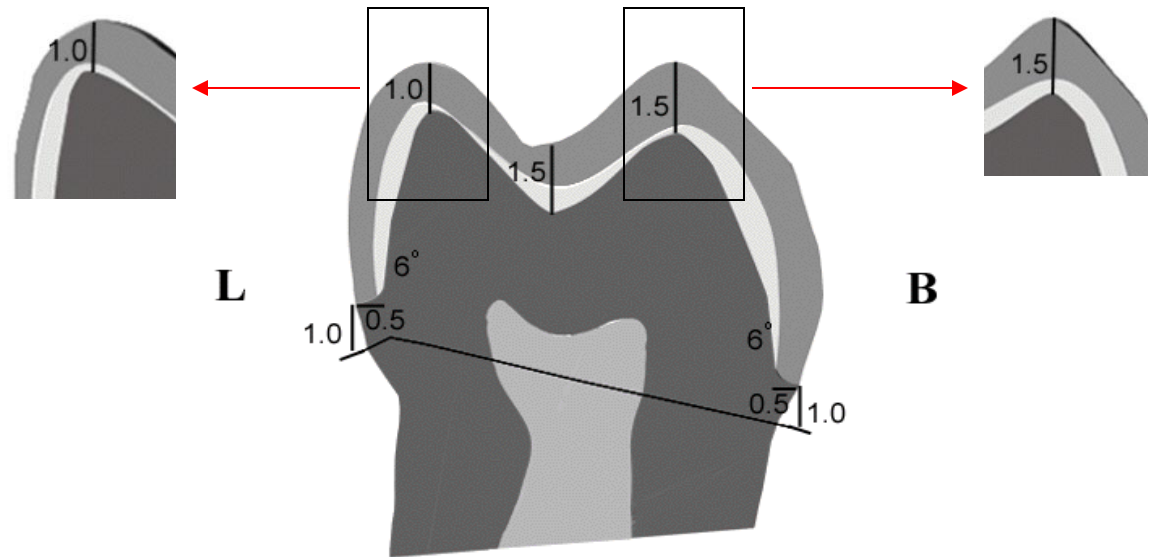
4. In the occlusal surface appear 5 cusps:
ML, DL, MB, B, and DB.
These cusps follow the original contour of the
tooth cusps and preserve the occlusal anatomy.



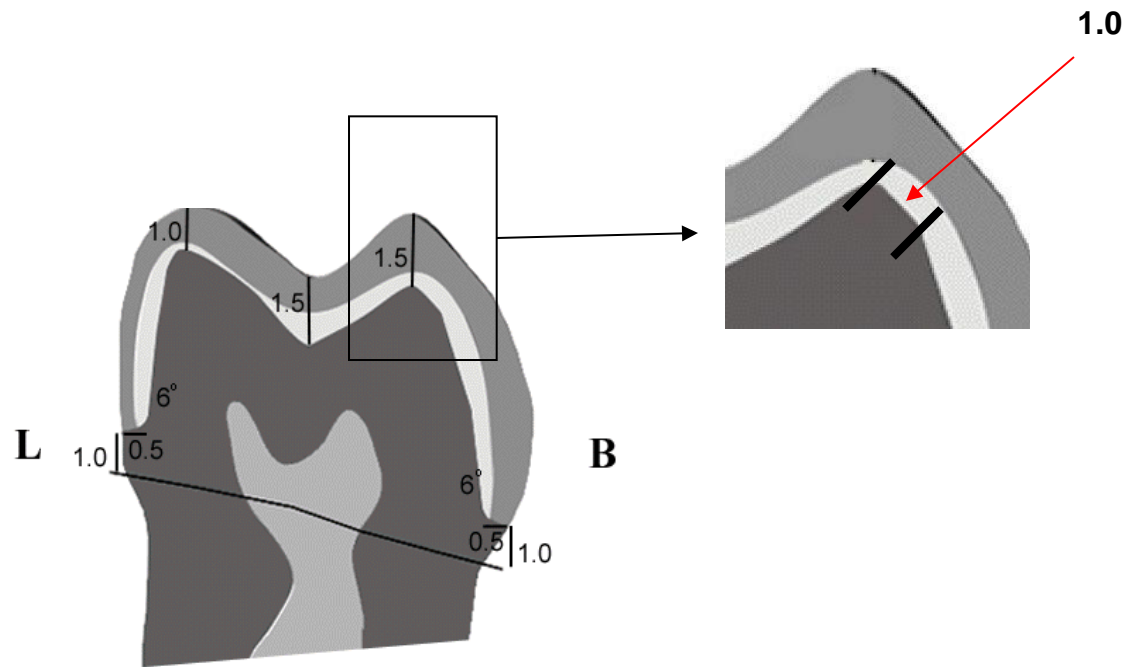
5. The tips of the cusps are located under the tips of the original cusps of the tooth.



6. Occlusal reduction:
B cusps - 1.5 mm
L cusps - 1.0 mm



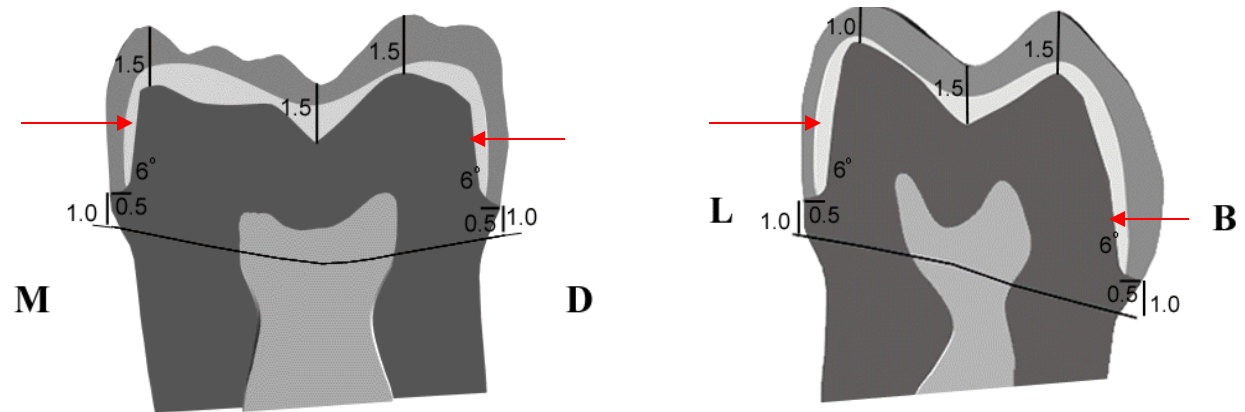
7. Functional cusps beveling is located on the buccal cusps, its width 1.0mm.



8. Taper of opposing walls:

The M and D walls have taper of $4-6^\circ$.

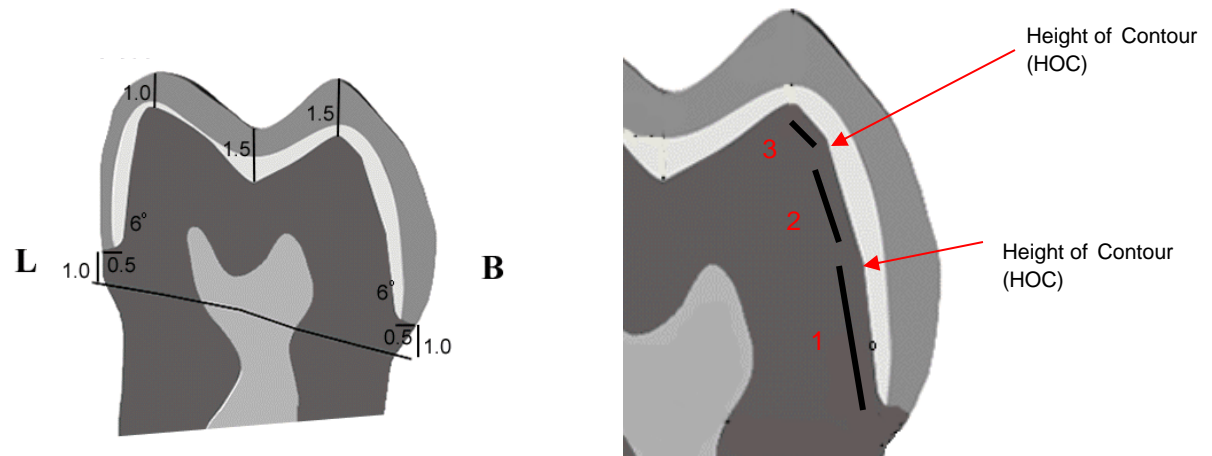
The B and L walls have taper of $4-6^\circ$.



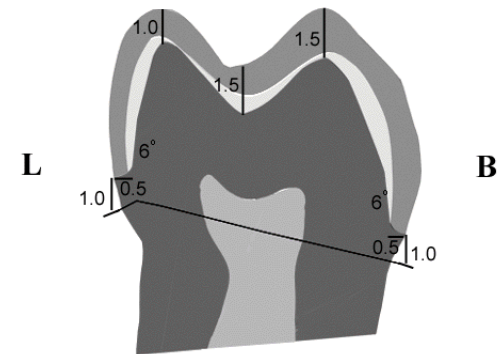
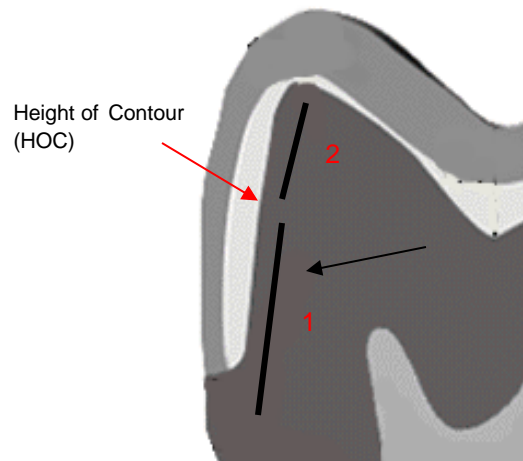
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9. Height of contour of the preparation walls is located parallel to the original height of contour of the enamel surface.
10. The buccal walls have 3 surfaces: from the margin to the HOC, from the HOC to the Functional Bevel, and the Functional Bevel.



11. The lingual cusps have 2 surfaces:
from the margin to the HOC,
and from the HOC to the tip of the cusp.
12. The gradual change in the surfaces begins
between the transitional line angles.
13. All the line angles of the walls and the cusps
are rounded. All walls are smooth.



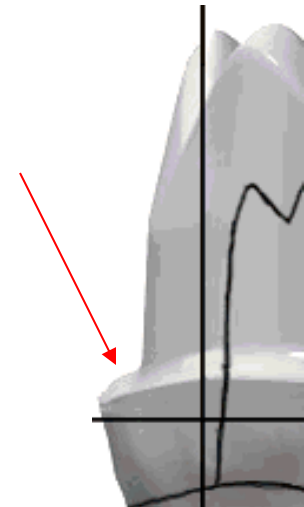
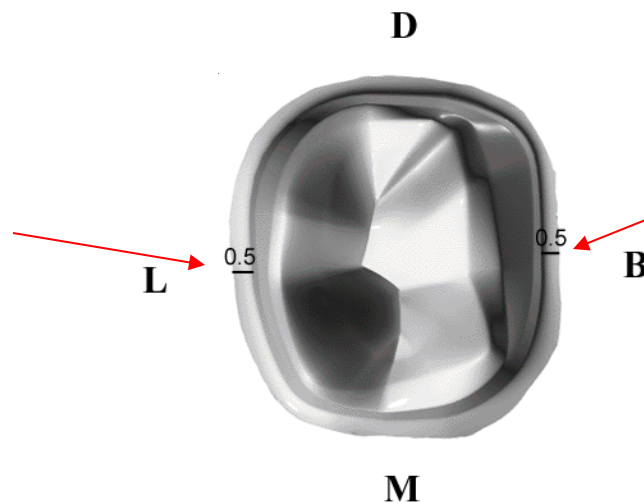
14. Marginal geometry: chamfer configuration.

The anatomy of the chamfer was created according to the shape of a round-end taper diamond bur, 0.8mm at its tip.

15. Axial reduction / chamfer width:

Buccal chamfer width – 0.5 mm

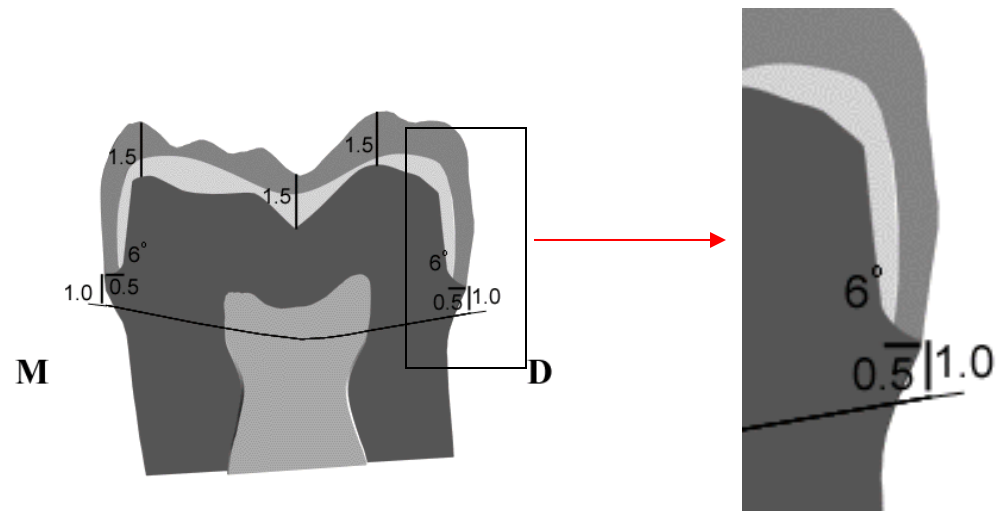
Lingual chamfer width - 0.5 mm.



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16. Margins are located 1.0mm occlusal to the free gingival line.
As a result of the margin location, clearance is left from the adjacent teeth.



Procedure Evaluation

Passing grade

60



Test	Grade
Damage to adjacent tooth	Point reduced only in run-time
Pulp exposure	Point reduced only in run-time
Undercut	10
Occlusal reduction	12
Wall incline	16
Retention	10
Resistance (hinge movement)	10
Wall smoothness	10
Margin location	6
Margin width	10
Finish line continuity	10
Interproximal clearance	6



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Part 2

Step by Step Procedure



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Tips

- There are 9 suggested step by step procedures.
- For beginners, it is best to follow the recommended sequence. Otherwise, you may proceed in the order that you are most comfortable with.



Preparation Steps

1. Occlusal Depth Guides
2. Occlusal Reduction
3. Mesial Reduction
4. Distal Reduction
5. Buccal Reduction
6. Lingual Reduction
7. Functional Cusp Bevel
8. Finishing the Preparation
9. Evaluating the Preparation



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Step 1

Occlusal Depth Guides



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Step 2

Occlusal Reduction





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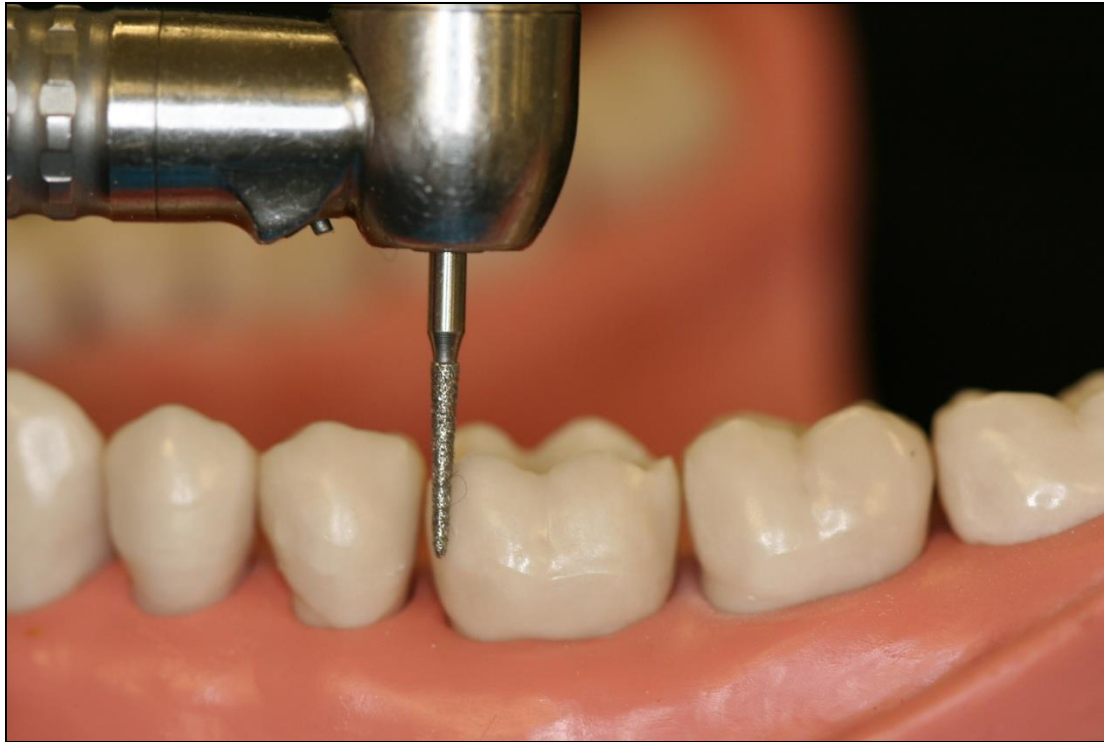


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Step 3

Mesial Reduction





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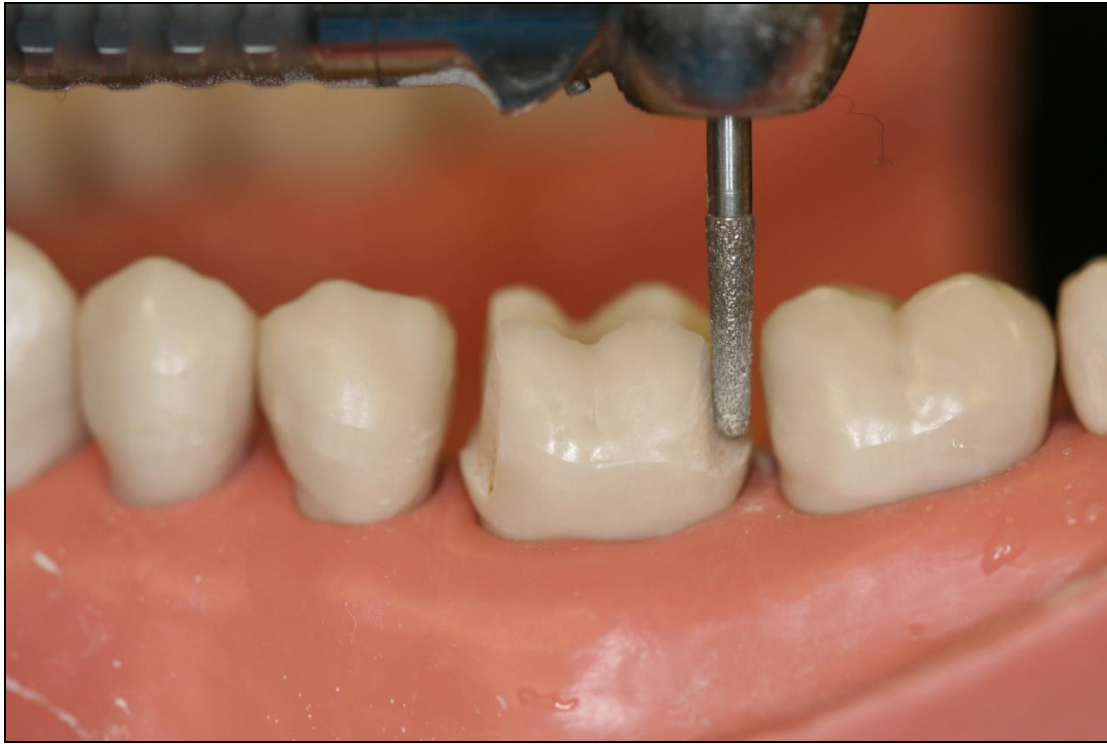
Step 4

Distal Reduction





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Step 5

Buccal Reduction





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Step 6

Lingual Reduction





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Step 7

Functional Cusp Bevel



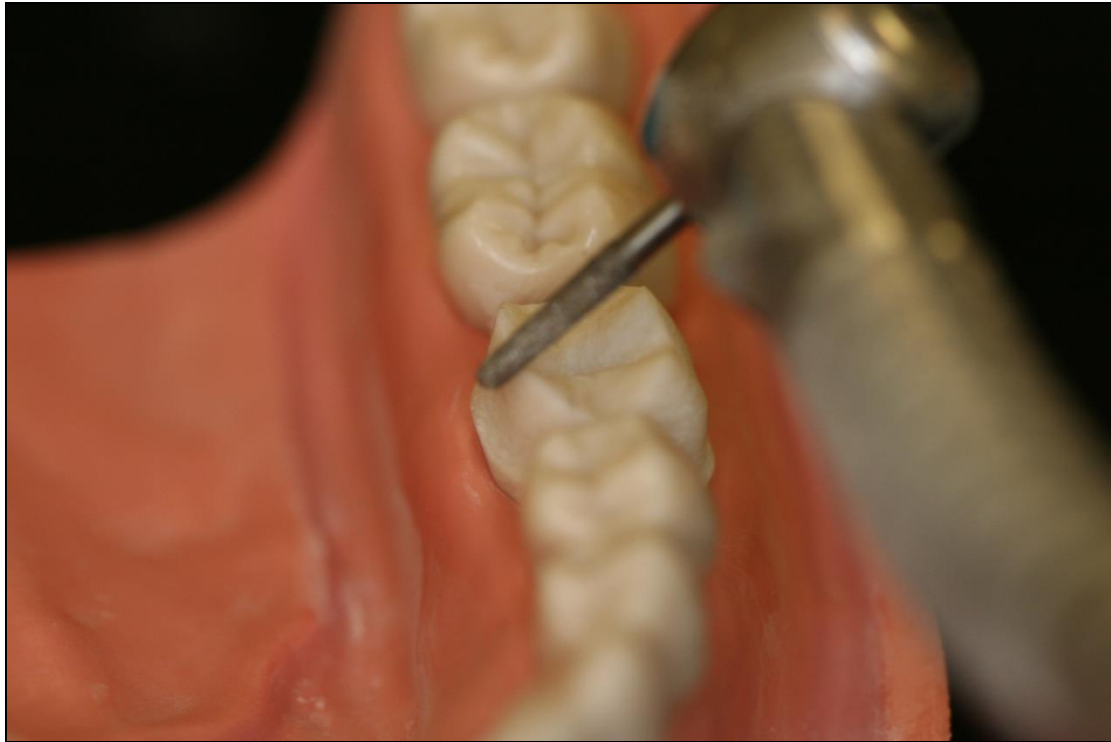


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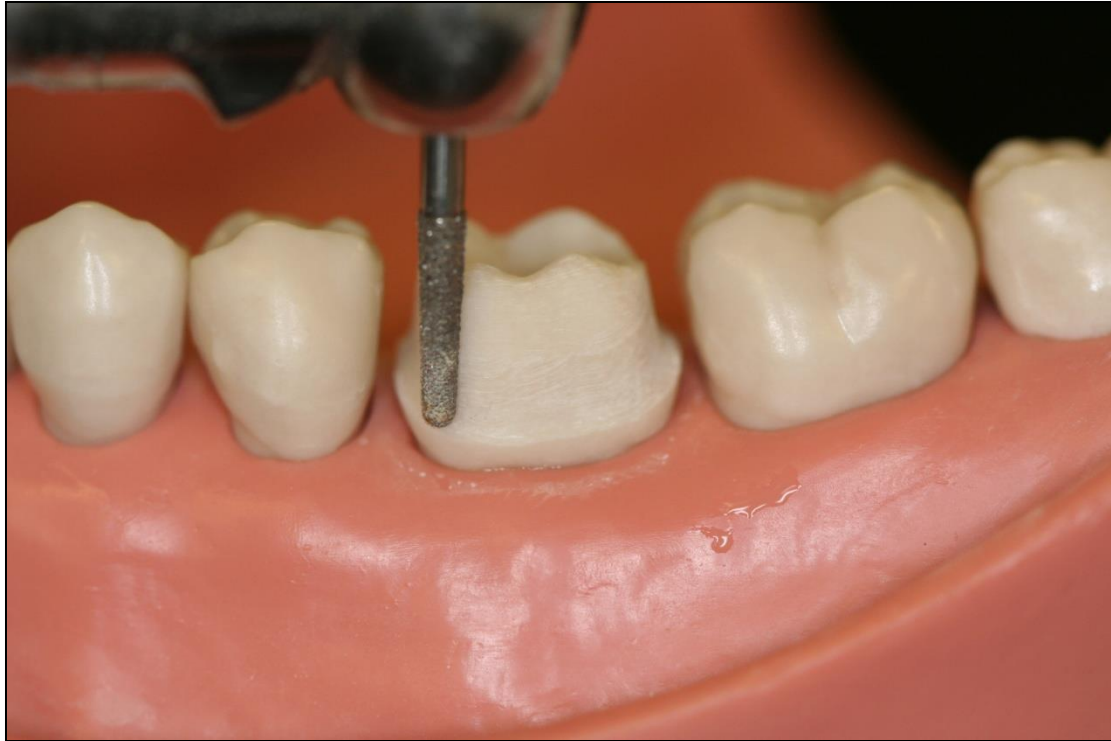
Step 8

Finishing the Preparation





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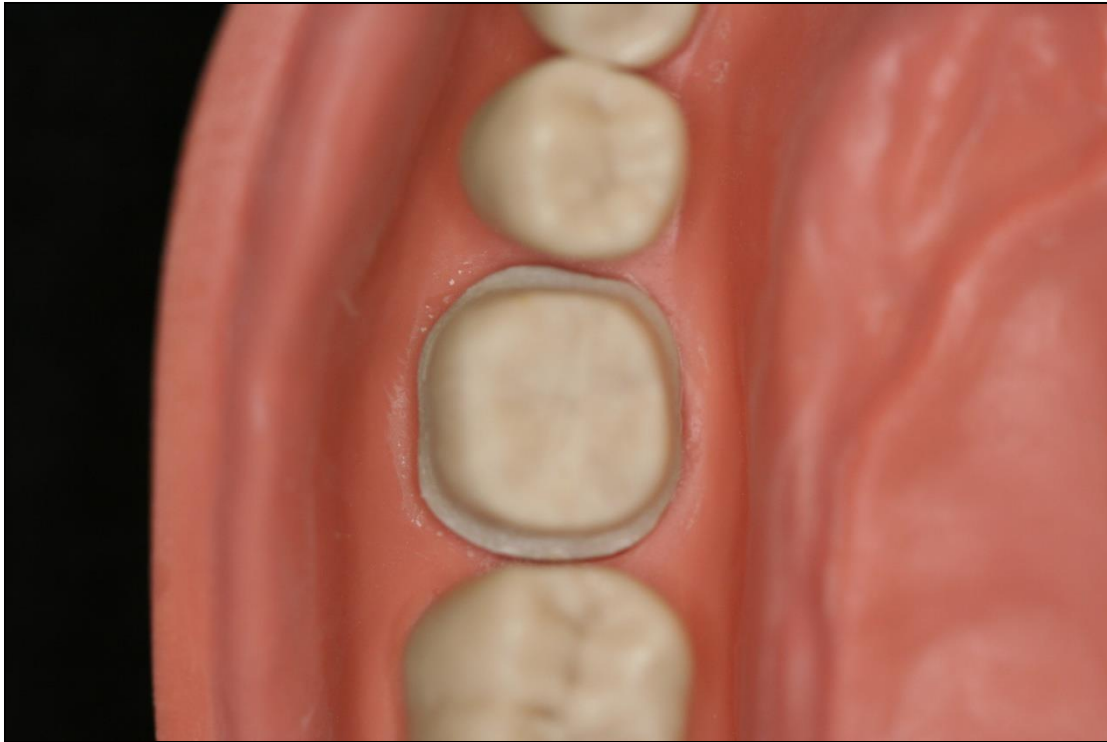


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Step 9

Evaluating the Preparation





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