

Complete Cast Crown Preparation

Full Gold Crown



Dr Matsubara

Full Gold Crown



Full Gold Crown

Advantages

- ▶ Longevity
- ▶ Resistance
- ▶ Conservative
- ▶ Adjustability

Maxillary molar

Mandibular molar and premolar

Disadvantages

- ▶ Aesthetics

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Oral Health Centre
of Western Australia

Indication

- Short clinical crowns
- Maximum retention and resistance are needed
- High displacement forces



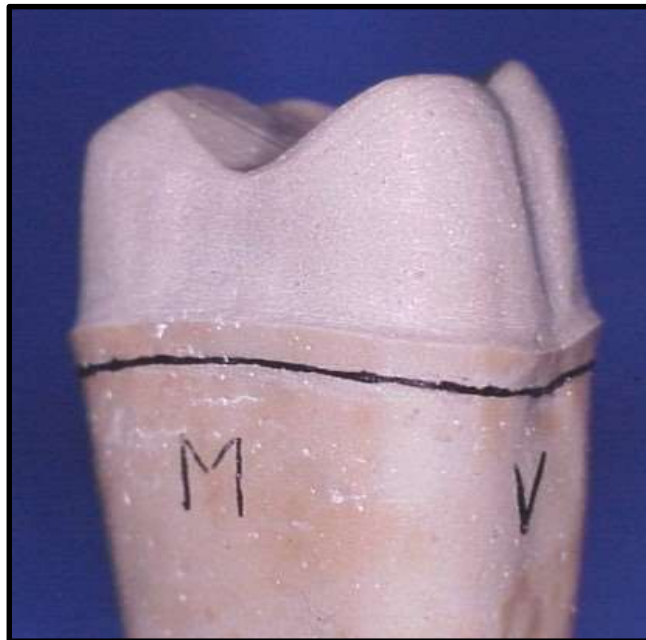
Contraindication

- High esthetic need



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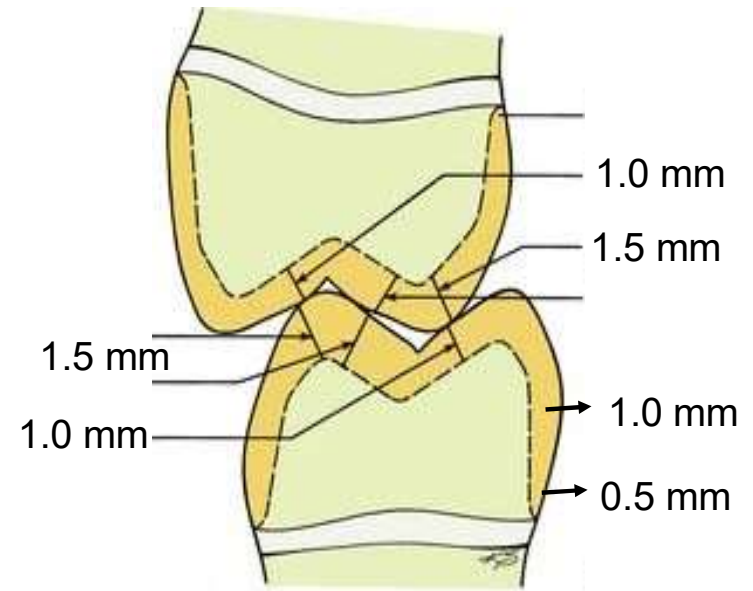
PREPARATION CRITERIA



Full Gold Crown

PREPARATION CRITERIA

- ▶ Occlusal
 - Non-functional cusp: 1.0 mm
 - Functional cusp: 1.5 mm
- ▶ Axial: 1.0 mm
- ▶ Margin: chamfer > 0.5 mm



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PREPARATION ARMAMENTARIUM

Diamond burs

- Major reduction
- Different grits

Diamond Grit Sizes

Code	Description	μ
SF	Super Fine	30
F	Fine	50
M	Medium	107-120
C	Coarse	150-180
SC	Super Coarse	180-250



Carbide burs

- Refinement
- Different roughness



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PREPARATION STEPS

- 1 - Silicone putty index
- 2 - Occlusal reduction
- 3 - Buccal & lingual axial reduction
- 4 - Interproximal reduction
- 5 - Finishing
- 6 - Auxiliary retentive features

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Silicone putty index

- ▶ Gives a useful guide to the original shape of the tooth once preparation has begun
- ▶ Not necessary with every case
- ▶ Mainly when major modifications are required
- ▶ In conjunction with wax-up

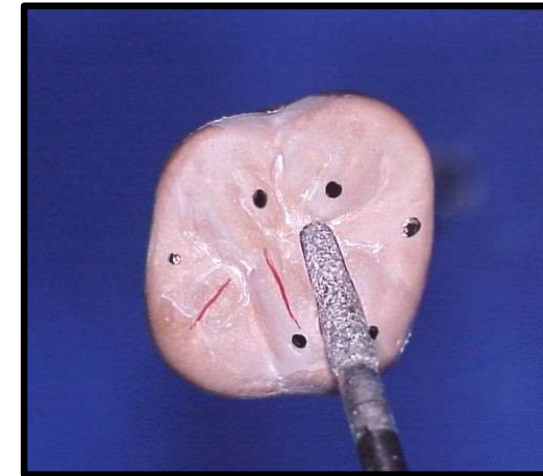
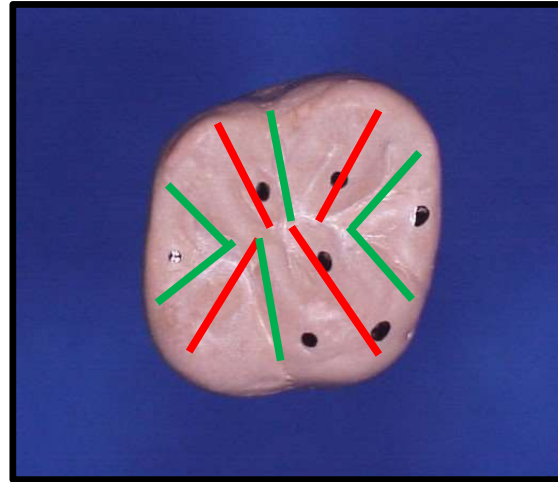


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Occlusal reduction

- ▶ Occlusal guiding grooves
- ▶ Bur: diamond (1mm diam)
- ▶ Follow anatomy

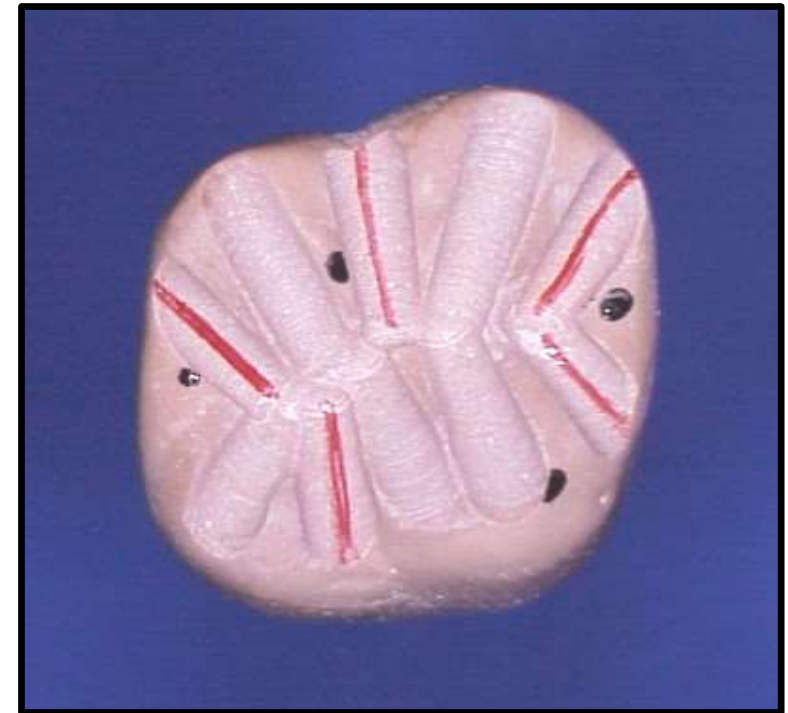
Ridges and grooves



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Occlusal reduction

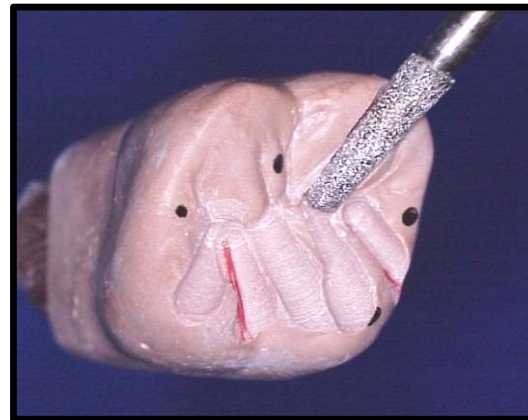
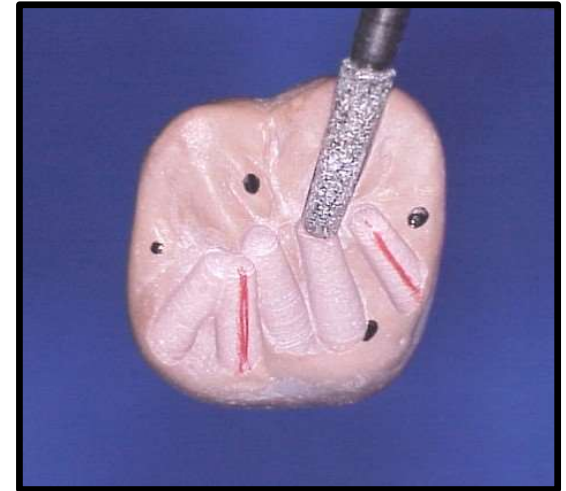
- ▶ Functional cusp
 - 1.5 mm
 - Buccal on mandibular posterior teeth
 - Lingual on maxillary posterior teeth
- ▶ Non-functional cusp
 - 1.0 mm
 - Lingual– mandibular posterior teeth
 - Buccal– maxillary posterior teeth



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Occlusal reduction

- ▶ Functional cusp
 - 1.5 mm
 - Buccal on mandibular posterior teeth
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 - 1.0 mm
 - Lingual– mandibular posterior teeth
 - Buccal– maxillary posterior teeth



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Occlusal reduction

- ▶ Even occlusal surface reduction
- ▶ Bur (1mm diameter)
- ▶ Reduce half the occlusal surface
- ▶ Use the other half as a guide
- ▶ Check the occlusal reduction
(Putty key and antagonist)

- Centric and excursive movements



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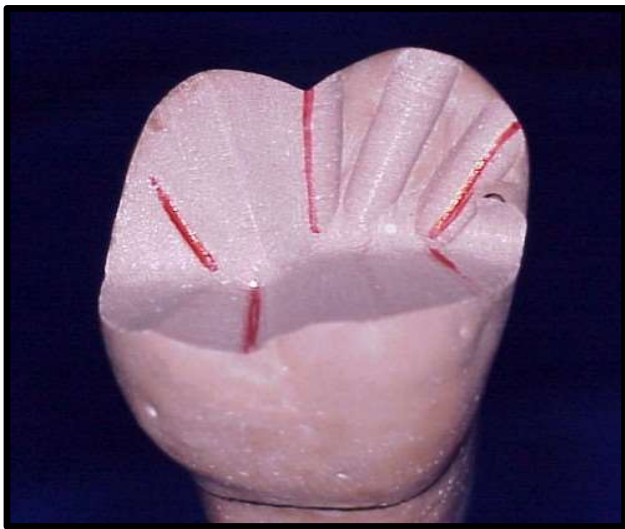
Occlusal reduction



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Occlusal reduction

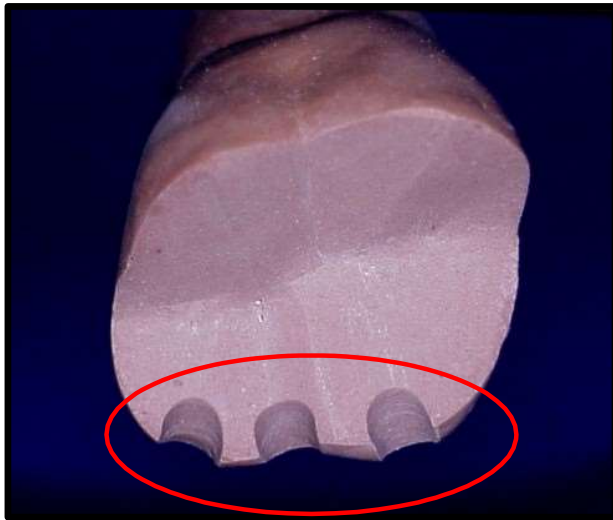
Following the occlusal anatomy



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Lingual reduction

2 planes of reduction



Occlusal third

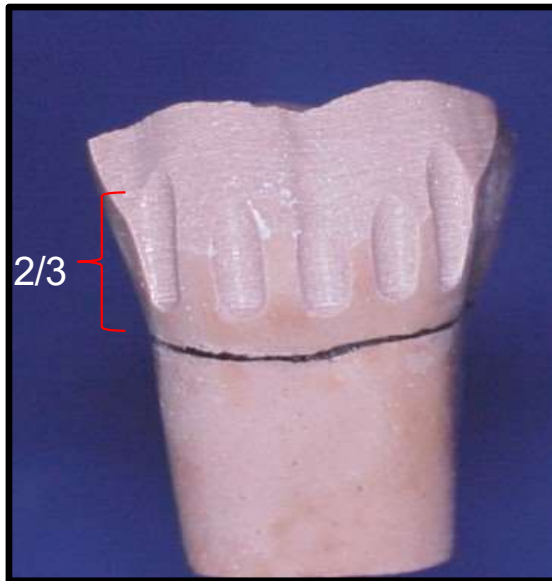
Supporting cusp
1.5 mm



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Lingual reduction

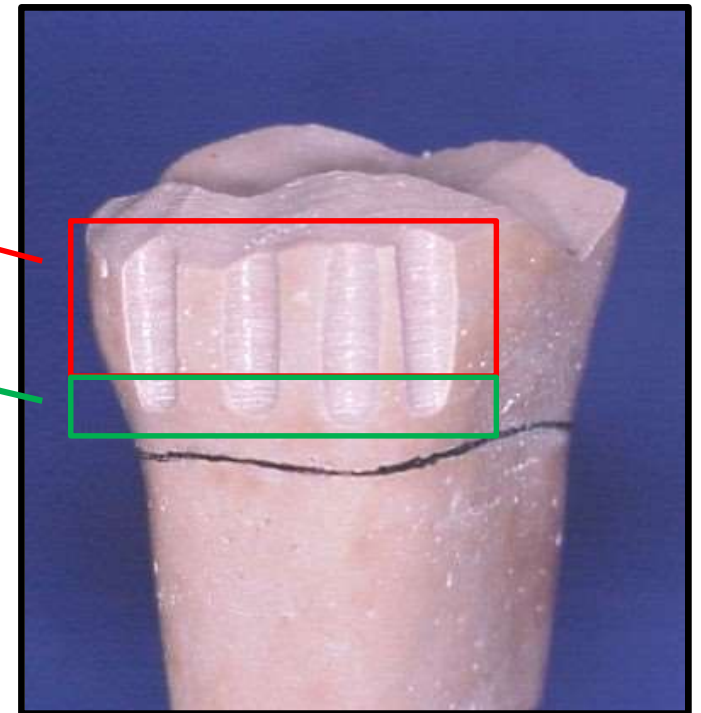
2 planes of reduction



Gingival 2/3

Axial reduction 1.0 mm

Margin 0.5 mm



Parallel to long axis

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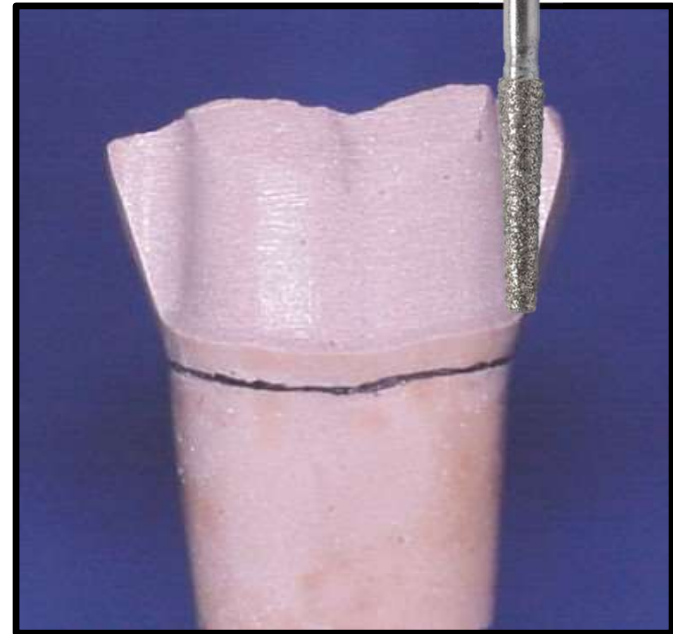
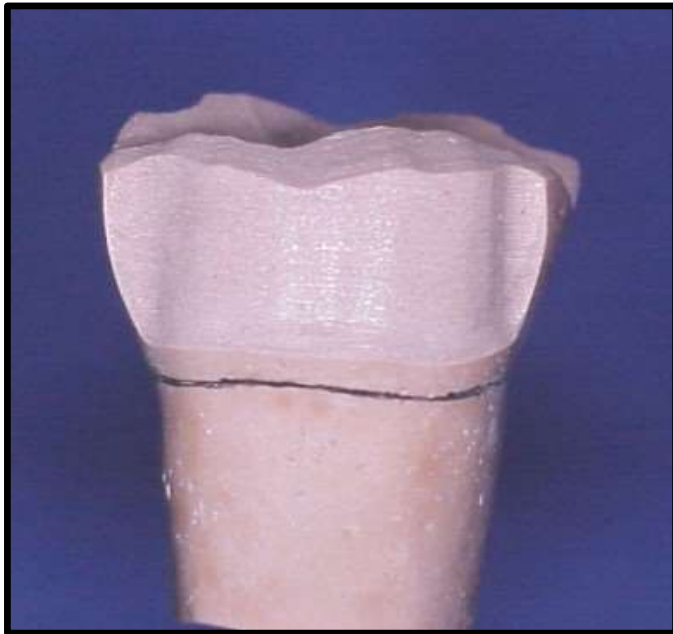


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Lingual reduction

2 planes of reduction

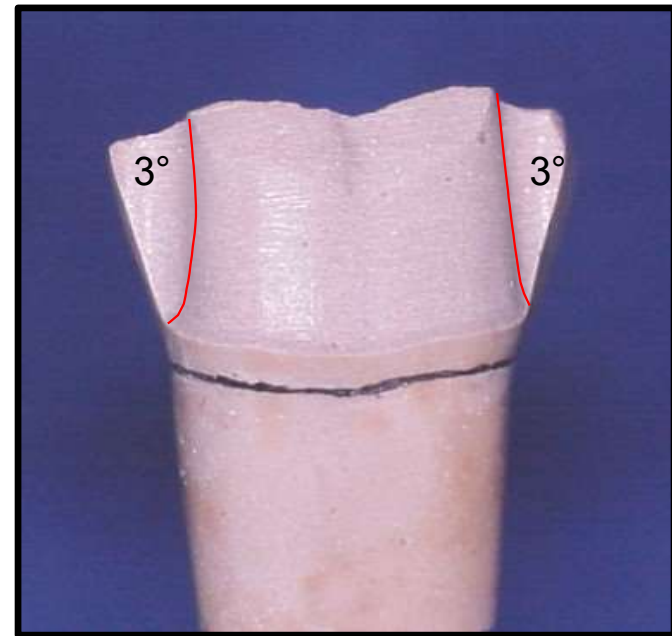
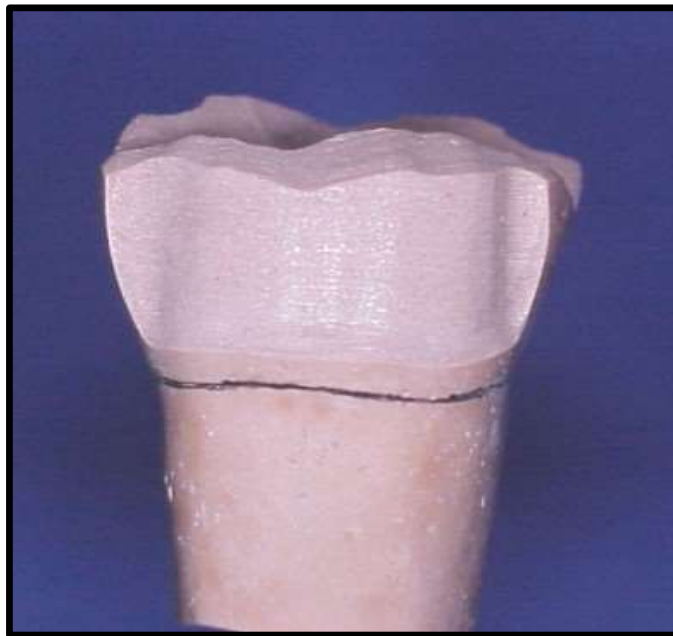
- Even axial surface reductions
- Margin placement in the same procedure



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Lingual reduction

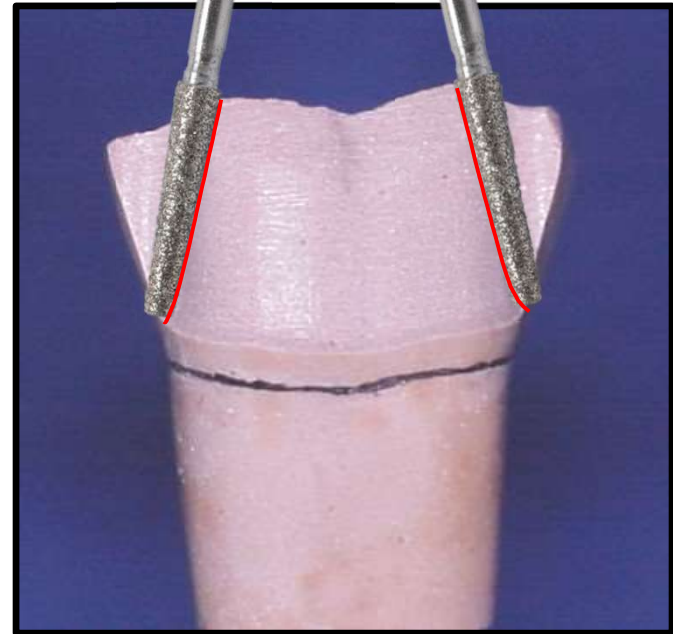
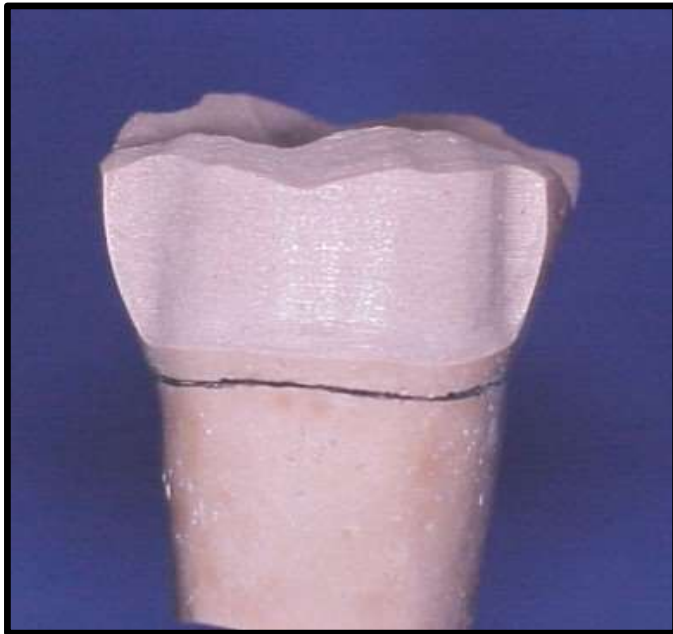
2 planes of reduction



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Lingual reduction

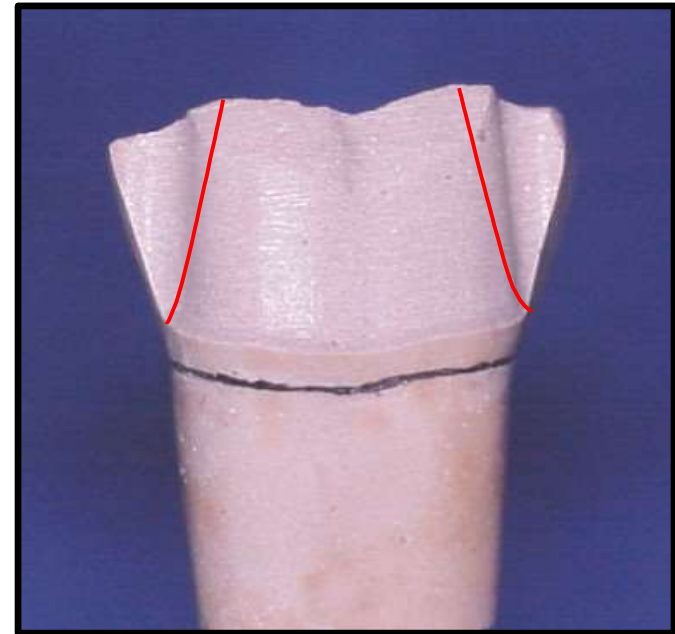
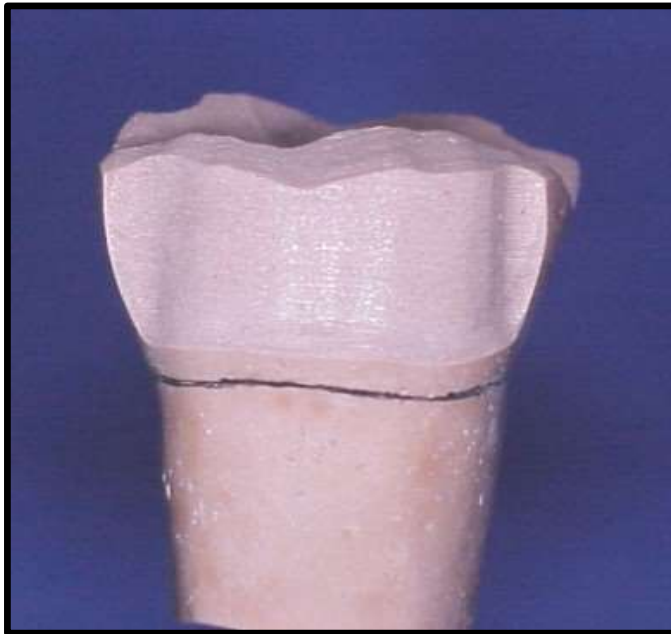
2 planes of reduction



Full Gold Crown

Lingual reduction

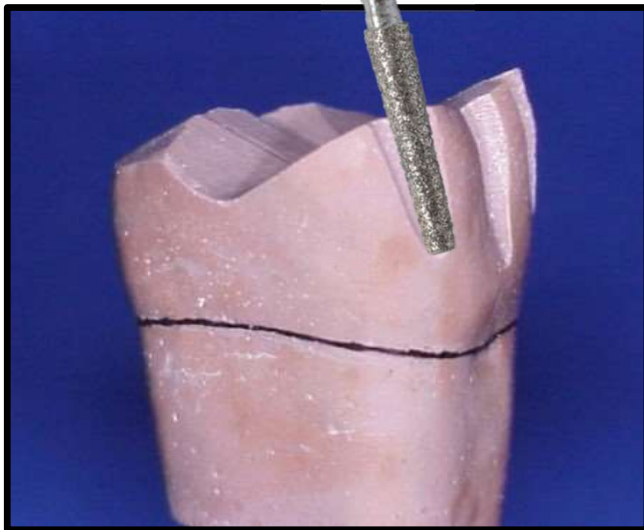
2 planes of reduction



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Buccal reduction

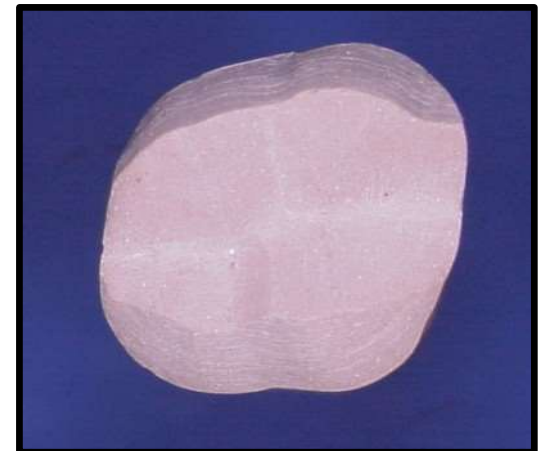
2 planes of reduction



Occlusal 2/3



Non supporting cusp
Reduction 1.0 mm

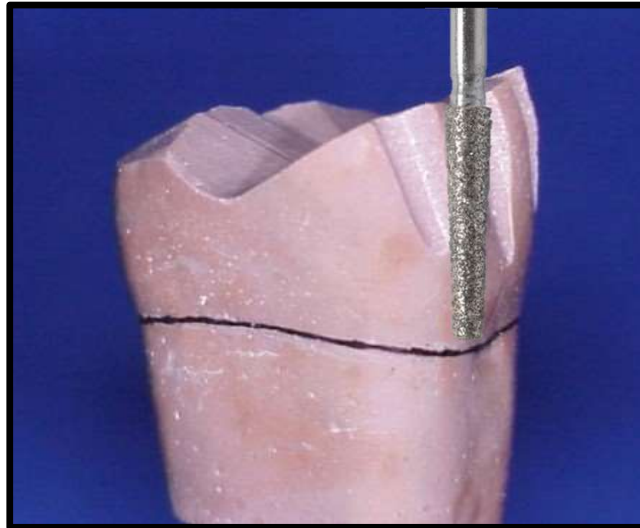


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Buccal reduction

2 planes of reduction

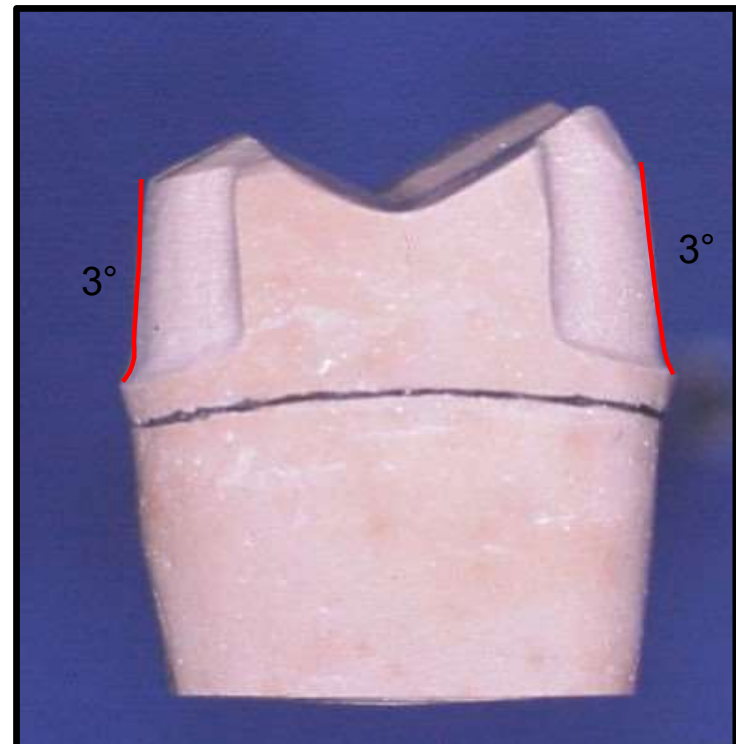
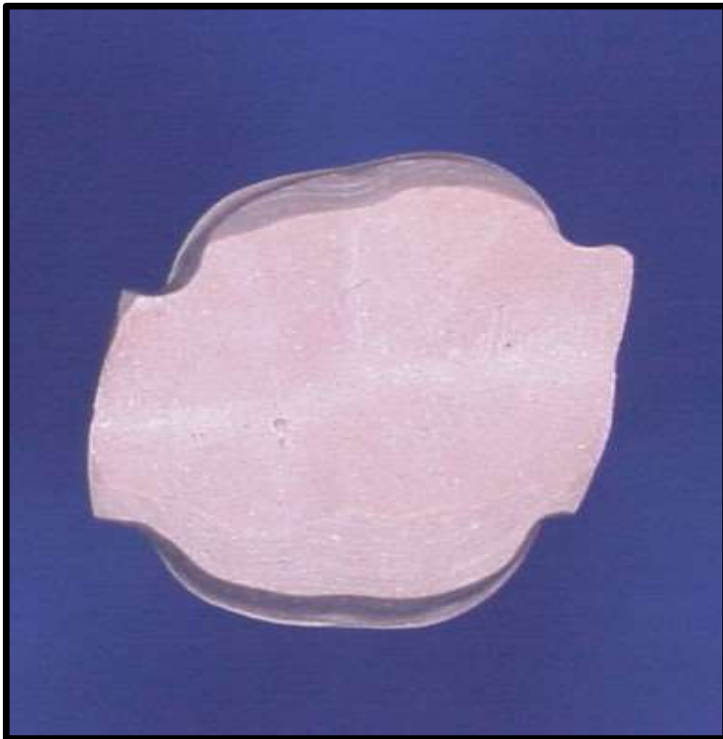
Reduction 1.0 mm



Parallel to the long axis

Gingival 1/3

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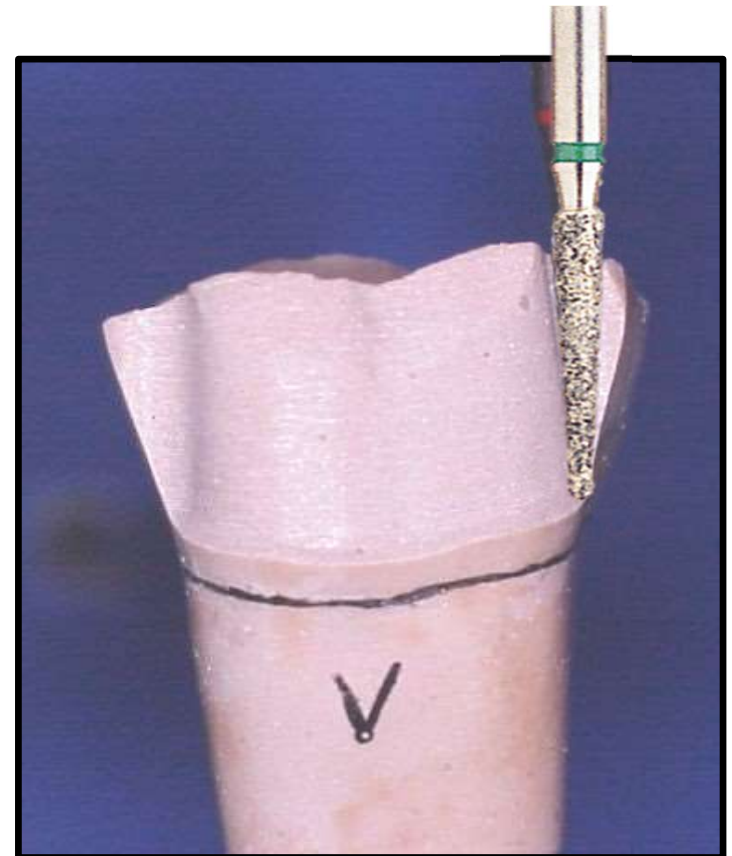


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Interproximal reduction

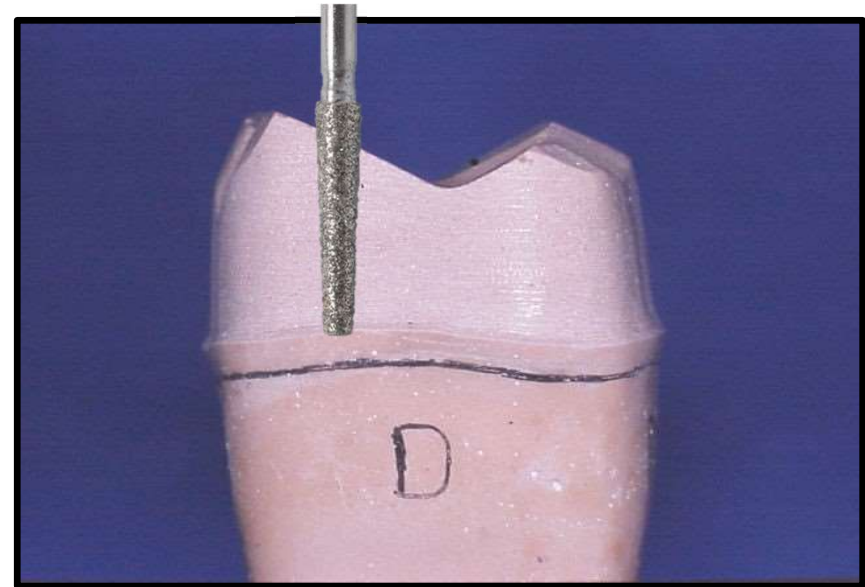
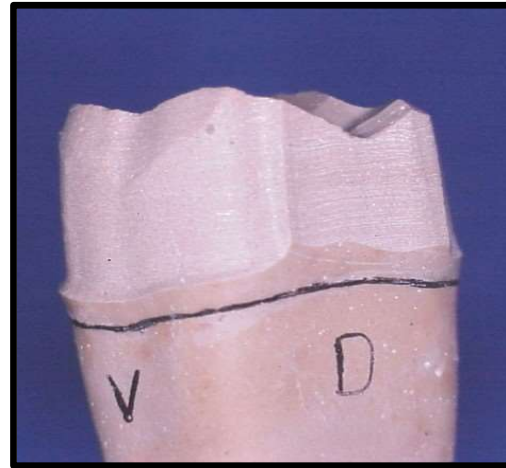
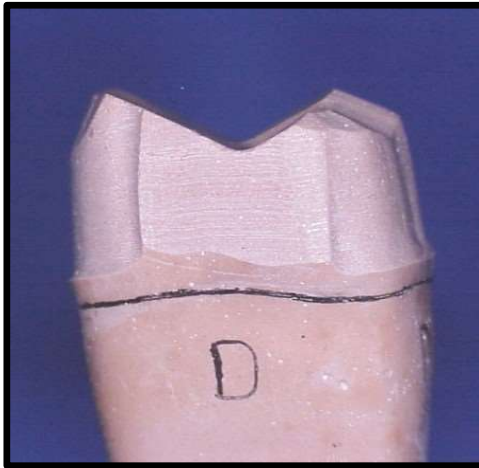
Extra care for the interproximal areas / adjacent tooth

- Use narrow tapered bur
- Use needle bur
- Matrix band protection if needed
- Acquired skill

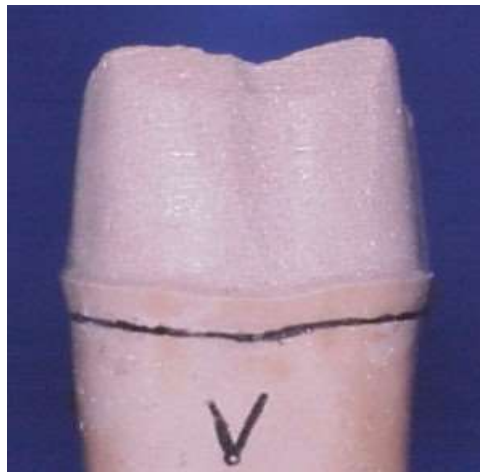
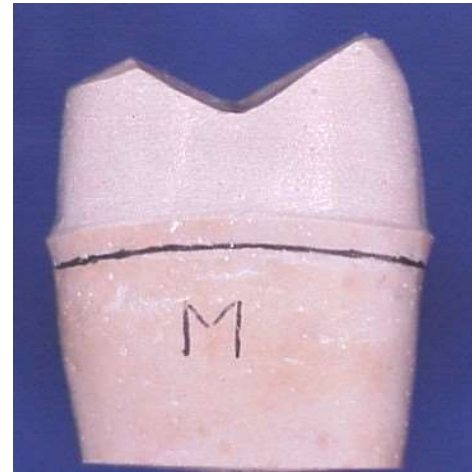


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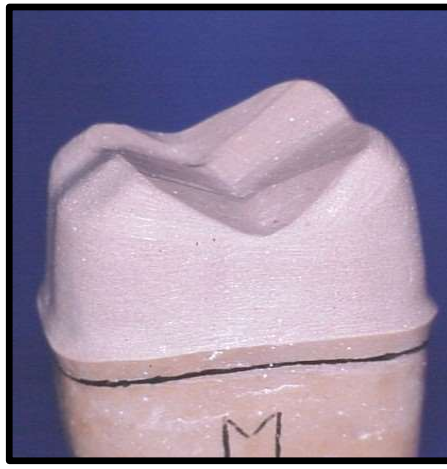
Interproximal reduction



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Finishing

- Smooth preparation
- Smooth transition between surfaces
- No sharp angles
- Fine-grit diamond or carbide bur
- Consider low speed hand piece
- Assessing criteria with dental explorer or periodontal probe

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Auxiliary Retentive Features

- Vertical grooves or boxes
- 1 mm deep
- 1 mm above the margin
- In the middle of the buccal surface
- Restricting the path of withdrawal
- As parallel to the long axis of the tooth as possible

