

Posterior approximal preparations and restorations

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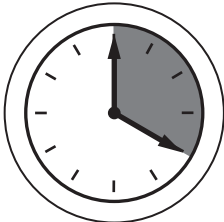


	Types of learning	Resources	UK General Dental Council learning outcome(s)*	Session learning outcome(s)
Session 1			1.14.1	Cut a suitable approximal preparation into a plastic and a natural tooth
	Didactic elements		1.1.3 1.1.5 1.1.2 1.1.4	Describe the typical location and pattern of approximal caries
	Learner-centred	Frasaco Jaw		
	Reflective	Chapters 10,22	1.1.1	Discuss the rationale for removal of approximal caries and the alternatives for management
	Critical appraisal	Handout		
	Peer review			Derive a planned approach to investigating and managing these lesions
			1.14.1	Remove simulated caries from plastic teeth
				Discuss criteria for successful critical appraisal and peer review of approximal preparations
Session 2			1.14.4 1.14.5 1.14.1	Apply a suitable matrix retainer and restore a posterior approximal cavity with amalgam
				Identify common faults with approximal preparations and derive suitable solutions
				Assemble and place a matrix band around an approximal preparations and assess its suitability
	Didactic elements			Restore a posterior approximal cavity with amalgam
	Learner-centred			Develop criteria for critically appraising posterior approximal restorations
	Reflective	Chapters 7,13		Identify common faults with approximal restorations and derive suitable solutions
	Critical appraisal		1.14.4 1.14.5 1.14.1	Restore a posterior approximal cavity with composite
	Peer review			Appreciate the range of matrix systems available and how the material properties affects clinical outcome
			1.1.10 1.1.9	Discuss how the preparation of an approximal cavity will necessarily change depending on the material being used
			1.1.10 1.1.9	Appreciate the limitations and problems of adhesive restorations

* - black (dentists), blue (therapists)

Teaching notes for Session 1

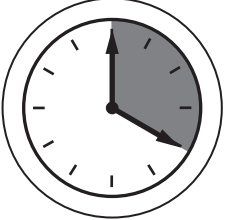


KEY POINTS:

- ✓ Confirm that students understand the rationale behind clearing the contact point, and how to ensure this is carried out in a minimal fashion
- ✓ Explain that in order for an amalgam restoration to function, the preparation must have adequate resistance and retention form
- ✓ Lipping at the base of the approximal box cannot be modified with hand instruments alone.

	<ul style="list-style-type: none"> • Where does approximal caries start? How to identify the contact point and how could we get to it? • Demonstrate preparation on 35mo Frasaco –enter adjacent to the margin ridge leaving a slither of protective enamel and deepen to about 2mm. • Identify perforation at the floor of the preparation • Use a hatchet chisel to break away the remaining ridge and remove unsupported enamel. • Pendulum with the pear-shaped bur to create undercut and demonstrate the use of the hatchet and gingival margin trimmers • Take tooth 34 out from the Frasaco jaw and look at the position and dimensions of the cavity preparation.
	<ul style="list-style-type: none"> • Students to prepare Frasaco 35mo with 34 missing • Stop to develop criteria to allow critical appraisal and peer review. • Talk about keys and demonstrate the pendulum effect on the distal of an extracted molar so that they can see. Only a subtle movement, and angulation of the bur in all planes is critical • Frasaco 25mo with 24 missing
	<ul style="list-style-type: none"> • 25mo, 15mo with adjacent teeth present • Natural 35mo

Teaching notes for Session 2

- ✓ Introduce and demonstrate the use of a well-fitting matrix system
- ✓ Explain the need for sufficient occlusal contouring, using the natural cusp slopes as a guide.
- ✓ Discuss the conceptual differences in preparation requirements for both amalgam and composite

	<ul style="list-style-type: none"> • Review criteria for approximal cavities • Prepare natural tooth 16do. • Identify the materials necessary for restoration with amalgam including assembly and deconstruction of the matrix system. • Cut a key and demonstrate a restoration with amalgam, highlighting the importance of a systematic approach to carving and the importance of wedges. • Reinforce the importance of restoring original anatomy including a marginal ridge that is at the correct height, often the same height as the adjacent tooth. Show how to develop a marginal ridge, which should in theory hold a drop of water in the mesial or distal pit of the restoration. Suggest that students don't attempt to 'carve' a marginal ridge, but instead cuspal contouring followed by excavation of a pit will develop a marginal ridge. • Restore Frasaco 35mo, 25mo, 15mo and natural 35mo, 16do.
	<ul style="list-style-type: none"> • Prepare and restore natural teeth 24mod and 37mo. • Prepare natural tooth 14m <i>box only</i> • Demonstrate the materials and instruments necessary for placement of a composite restoration and then demonstrate restoration of 14m in composite. Use a metal matrix with wedges as for an amalgam. Incrementally pack from the base. If required, finish with composite finishing burs and interproximal strips, and then polish with Soflex. • Discuss problems commonly encountered with matrices (adaptation at the base of the box), condensation and finishing. • Restore natural tooth 14m
	<ul style="list-style-type: none"> • Cut and restore natural teeth 44m/44d, 34m in composite.

Posterior approximal cavity assessment criteria

- Smooth outline form, neat finish and rounded internal angles
- Retentive vertically
- Pulp not compromised
- Retentive horizontally
- Contact point cleared
- Key/box appropriate depth if required
- Cavo-surface angles 90 degrees
- No damage to the adjacent tooth
- No unsupported enamel

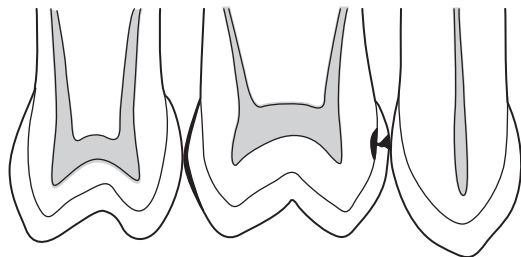
Posterior approximal restoration assessment criteria

- No ledges
- Well condensed
- Marginal ridge
- Contact point restored
- No excess amalgam
- Not over carved/under filled

Handout for Posterior approximal preparations

Caries removal & cavity design

This upper first molar has a carious lesion in the (mesial) approximal surface. The radiograph shows that the caries has reached the ADJ and has progressed into the dentine.

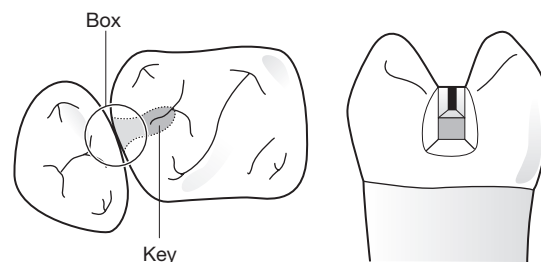


How might this lesion be visualized clinically?

Describe where this lesion has originated within the interproximal space. Why has it started here? Discuss with the other people on your bench how you are going to deal with this lesion. Specifically, assuming you see the need to open this up and remove the caries:

- What bur will you use on what handpiece first?
- Where will you initially cut into the tooth?
- How deep will you cut and why?
- How will you know when you are at the right depth?
- Where will you finish the margins of the cavity?

- If there is caries will you leave any, what will you remove?
- What will the walls of the cavity be like (vertical, tapered, slightly undercut?). Why?
- What will the floor be like (flat, scooped out?)
- Where are you getting retention from the cavity?
- What planes will you need to provide retention?



Now that you have discussed this, prepare some cavities in the plastic teeth, taking care to prepare to an appropriate depth and to establish tidy walls and a smooth outline form. Again, the outlines are very artificial, because ultimately it will be caries which determines outline.

Remember this is another exercise in handpiece control.
You must not injure the adjacent tooth