

# *Clinic Guide*

## **TABLE OF CONTENTS:**

<b>Prosthodontics</b>	<b>2</b>
Soft reline:	3
Hard reline:	4
Rest Seat Preps:	4
Border Molding & Final Impression:	10
Crown Preps:	13
Crown 48hr FU:	16
Framework Try in:	17
Cast Partial+Transitional-Occlusal Rims & Records:	17
Implant-Rad Stent:	20
Transitional Partial-Ant tooth try in:	22
Transitional Partial+Cast Partial-Post tooth try in:	23
Transitional Partial+Cast Partial-Denture try in:	24
Sectioning a Bridge:	25
24hr denture check:	25
Zirconia Crown Cementation:	26
<b>Periodontics</b>	<b>28</b>
Procedure 1:	29
<b>Pediatrics</b>	<b>30</b>
Stainless Steel Crown:	31
Space Maintainers:	33
Autism:	34
<b>Oral Surgery</b>	<b>36</b>
Procedure 1:	37
<b>Operative</b>	<b>38</b>
Restoration:	39
<b>Endodontics</b>	<b>41</b>
General Tips:	42
RCT:	42
Post+Core & Final Impression	53

Sonita May 12 appt	62
<b>Materials</b>	<b>65</b>
Template	66
Permanent Cements used in clinic	67
Temp Cements used in clinic	67
Calcium Hydroxide:	67
Glass Ionomer (GI):	70
Endo-Temporary Restos:	72
Zinc Oxide Eugenol	74

DPR:

1. Med hx
2. Dent hx
3. Caries risk assessment
4. Periodontal chart \*RDH check
5. Charting
6. Rads (from other clinics??)

## Prosthodontics

## Soft reline:

***BUTLER: do soft reline then hard reline***

### Checklist:

- Operative Cassette
- Big purple bur block
- Handpieces
- Lynal separator
- Lynal
- Denture Brush + solution
- Biosurf
- 15 blade scalpel
- Instructions for pt at front of main clinic (in cupboard)

### Steps:

- 1) Check occlusion (high spots, overbite, functional movements)
- 2) Check flange length
- 3) Check if cheeks interact with edges to cause them to pop out
- 4) Clean denture with brush and solution
- 5) Drill about 1mm off the intaglio surface depending on the bone loss, roughen up polished/outer 1mm sides of flange as well
- 6) Apply lynal separator on the external denture base and tooth surfaces so lynal does not stick on there (oil that comes with the lynal)
- 7) Lynal comes as a powder and liquid → mix 10mL powder with 4mL liquid, stir for 30 seconds → spread it about 1mm thick on the intaglio surface of the denture and over the edges of the flanges (warning, sets quickly, insert it into mouth after 2-3 mins from start of mix)
- 8) Move their cheeks, purse lips (border molding movements)
- 9) Allow patient to talk while setting
- 10) After setting (7-8 mins), check occlusal contacts and remove excess lynal
- 11) Check for bubbles and remove excess from exterior of flanges. Hold the denture by the teeth and not the lynal
- 12) Send the patient home with it and tell them to wear it for the whole day → after a max of 48 hours: bring pt back!

### Return appt:

- 13) make sure Lynal isn't broken and patient says it feels ok, take the denture from the patient and tell them the turn around is about 2-3 days
- 14) Take impression and send to lab with cast

### Instructions to the patient:

- do not brush denture for first day
- no commercial cleaners/do not soak dentures

- no heavy pressure for 24hrs, soft diet
- if not wearing it at night: wrap in moist towel
- store on the teeth, not on the liner
- after 24hrs can clean carefully with a light brush

## Hard reline:

**BUTLER: do soft reline then hard reline**

### Checklist:

- Light body (signature for)
- Lab form (from heather or hiro?)

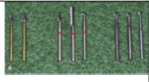



### Steps:

1. Light body into denture
2. Take impression
3. Send this impression to the lab
  - a. Should be back from lab in 1 week and then give back to pt

## Rest Seat Preps:

### Checklist:

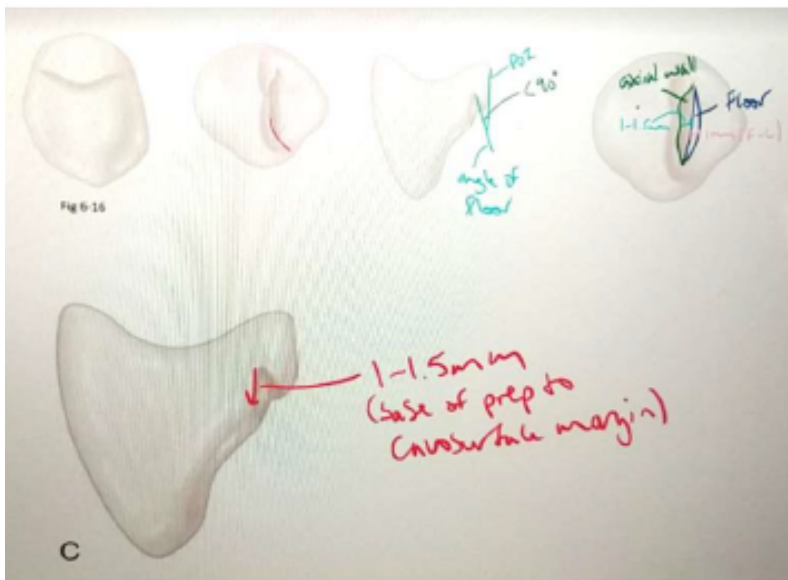
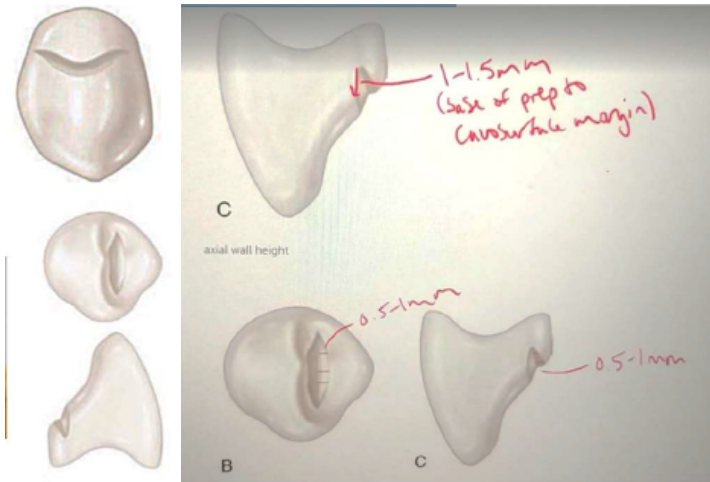
- Design sheets
- Casts
- Red bur block
- Op kit
- No LA
- Topical (in case needed)

		RPD Burs (red bur block?)					
							
	Multi-fluted carbide burs (9)	Rubber polishing points	Lingual/cingulum rest	Guide plane	Finishing burs	Occlusal/round rest prep	
Bur	#1-9, left to right		-909/050 -805/018 -878/012	-837KR/014 -8837KR/014 -parallel sided burs	-7653 -7006 -H158/014 -7406MW	-#4 -801/016	
Fxn	-#6 and #8 for occlusal rest seat preparation -#4 (cylindrical bur) for guide plane preparation	Smooth, polish surface	-For maxillary canine prep, inverted cone bur (805 018) -To smooth axial wall, 909/050 (far left)	-Marginal ridge rest seat prep mand. canine, 8837KR/014 parallel sided flat bur -Always prep guide plane first!! Before rest	-7406MW to flare the rounded rest seat prep twds buccal and lingual, make it more triangular	-Start with larger round bur (far right) -After, use slightly smaller round bur for deepest area (2 <sup>nd</sup> to right-most)	-Round burs are for occlusal rest seat prep's -Burs in this^ kit should only be used after round burs, to smooth surfaces

### CINGULUM REST Steps:

1. Measure on rads approx depth of enamel

2. Check where occlusion is on tooth
  - a. Don't want rest seat on area of occlusion
3. Run bur (without pedal) on tooth to get a feel for angulation etc
4. Inverted cone bur and then disk shaped bur
  - a. Shape:
    - i. rounded V with apex directed incisally, widest at mid point
    - ii. slopes towards mesial and distal
  - b. Floor:
    - i. >1 mm above free gingival margin, w a M and D incline – amount dictated by the height of the clinical crown
  - c. Dimensions:
    - i. **1 mm wide** narrowing as you go M and D
    - ii. **1.5 mm of axial wall height** – only 0.5 mm of enamel removed
  - d. Don't undercut axial walls, make parallel to the incisal edge and not curved as you extend proximally
  - e. Floor of the prep to the path of insertion is angle < 90 ° → critical to direct forces down the long axis of the tooth



5. Check for positive seating

**Rest seats**

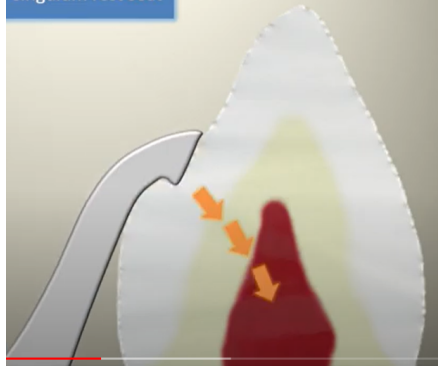
Cingulum rest seat

This creates a "POSITIVE SEAT" that directs the occlusal forces from the rest towards the long axis of the abutment tooth

In cross the inside of the rest should be more apical than the outside

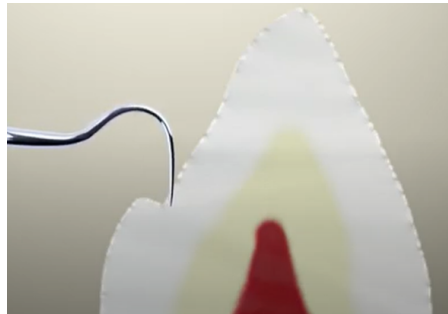
The diagram shows a cross-section of a tooth preparation with a cingulum rest seat. The rest is a red, pointed structure on the lingual side of the tooth. The surrounding preparation is yellow. The text explains that this creates a "POSITIVE SEAT" that directs occlusal forces towards the long axis of the abutment tooth and that the inside of the rest should be more apical than the outside.

a.



b.

- c. You have + seating if: place explorer on the outside and it slides towards inside of prep



i.

### **GUIDE PLANE Steps:**

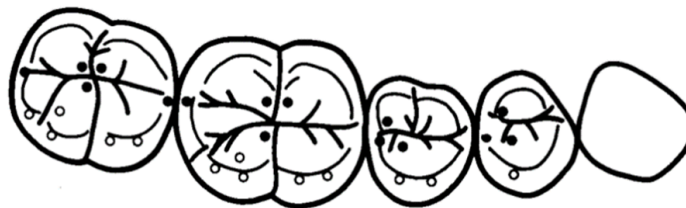
1. Measure on rads approx depth of enamel
2. Run bur (without pedal) on tooth to get a feel for angulation etc
3. **Cylindrical bur** (flat top) with **parallel walls** (no taper)
4. Location:
  - a. On proximal surface
  - b. Not visible from buccal
  - c. Curving toward the lingual ,,
  - d. 2-3mm above gingival margin
  - e. In enamel
  - f. Parallel to POI
5. Dimensions:
  - a. Cover  $\frac{1}{3}$ - $\frac{1}{2}$  height of proximal surface
  - b. Remove 0.5mm or less from surfaces
  - c. Follow curvature of proximal surface
6. Make sure its smooth
7. Unacceptable:
  - a. prep not following vestibular lingual contour of proximal surface of tooth
  - b. too close to gingival margin
  - c. ledge created in tooth
  - d. too much or too little guide plane prep

### **OCCLUSAL SEAT RESTS Steps:**

1. **ALWAYS AFTER GUIDE PLANE PREP!!!**
2. Measure on rads approx depth of enamel
3. Check where occlusion is (don't want this on pt's occlusion)
  - a. Don't remove centric occlusal contacts
    - i. Centric contacts: Max L + Mand F
    - ii. Solid= contacts associated with max L cusps
    - iii. Open hole= contacts associated with mand F cusps



iv. Left:



v. Right:

4. Run bur (without pedal) on tooth to get a feel for angulation etc
5. **Round burs #6 and #8** and deepest area: **smaller round bur**
6. Location:
  - a. Occlusal 3rd of tooth
  - b. BL:  $\frac{1}{2}$  BL width of occlusal table
  - c. MD:  $\frac{1}{3}$  -  $\frac{1}{2}$  MD width
7. Dimensions
  - a. 1mm at the margin
  - b. 1.5mm at the deepest part of the apex

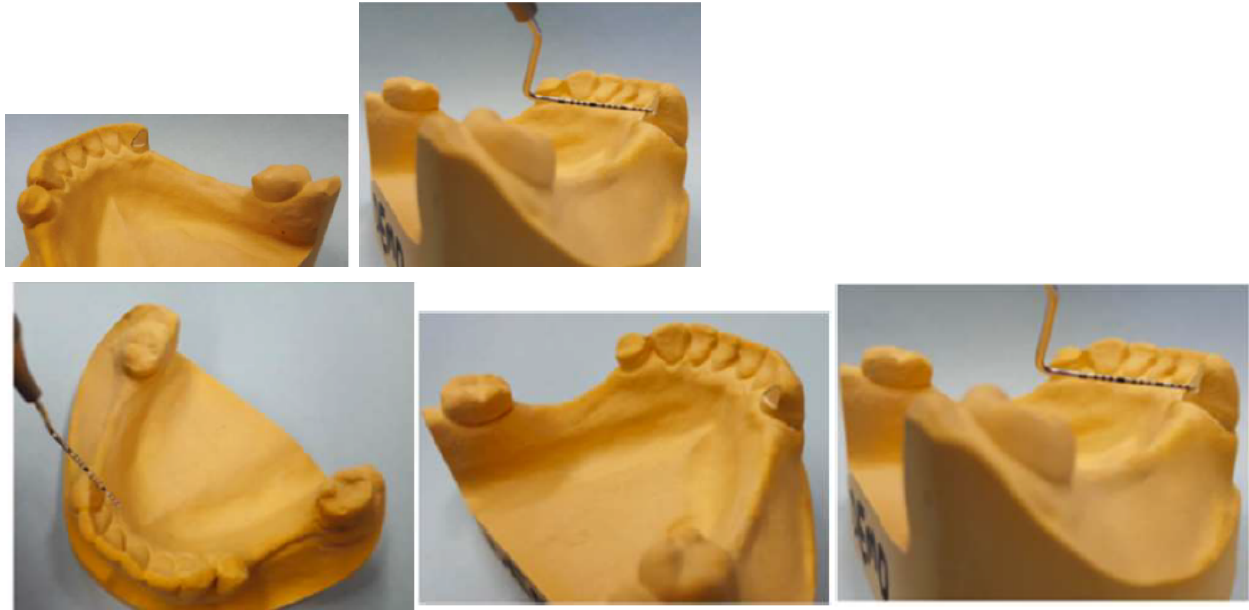


- c. M vs PM can be slight bigger to get more support
- 8. Floor:
  - a. Floor of prep to the POI is angle  $< 90^\circ$ 
    - i. critical to direct forces down the long axis of the tooth (if  $>90^\circ$  the cast RPD would slip away from the abt tooth and result in ortho like forces moving the tooth = harm)
- 9. Rounded marginal ridge
  - a. Don't want it sharp
  - b. Don't want bevel (bc taking away from height of marginal ridge being higher than floor of rest seat prep)
  - c. Marginal ridge should be higher than floor of prep
- 10. Flare out B and L for clasp arms to emerge (more lingual than buccal bc esthetics)
  - a. this is done to have bulk and prevent material fracture
- 11. General shape: rounded equilateral triangular form
  - a. U shaped, spoon shaped
    - i. AVOID: shovel (vertical walls)
      - 1. Bc direct forces down long axis (deepest part should never be cavosurface margin)

### **MARGINAL RIDGE REST Steps:**

1. Measure on rads approx depth of enamel
2. Check where occlusion is (don't want this on pt's occlusion)
3. Run bur (without pedal) on tooth to get a feel for angulation etc
4. Cylindrical bur (flat top) with parallel walls (no taper)
  - a. Middle 3rd of tooth
  - b. Floor: at the jx of the gingival and middle 3rd
  - c. Dimensions:
    - i. **1 mm wide**
    - ii.  **$45^\circ$  to the incisal edge**
      1. if you angle too much onto the lingual then you'll be in an area w less enamel AND you will see it on the labial surface
    - iii. **Do not extend buccal to the incisal edge, or mesial to mid-lingual surface**
  - d. Floor of the prep to the path of insertion is angle  **$90^\circ$**  (perpendicular) → critical to direct forces down the long axis of the tooth
    - i. If  $>90^\circ$  floor would slope away from tooth and RPD would pull away placing damaging forces on the teeth)
    - ii. Should not slope mesially or distally
    - iii. **USE GUIDE PLANE AS MY  $90^\circ$  degree REFERENCE POINT**
  - e. Don't undercut axial walls, + avoid making axial wall too divergent from POI
    - i. bc you will compromise the incisal edge and thin it or have metal showing through the enamel
  - f. Best when done on the marginal ridge adjacent to the edentulous area (so that the resulting seat is of sufficient size to supply adequate contact for support)

- g. All edges **rounded w/ no undercuts** to POI, should be **smooth**



## **Border Molding & Final Impression:**

### **Checklist:**

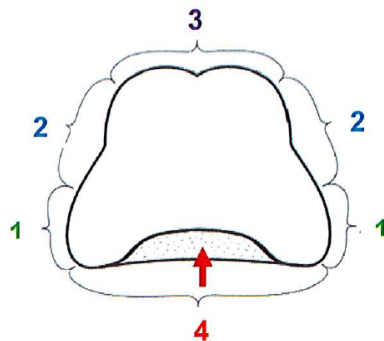
- Custom tray + cast
- Water bath
- Greenstick compound
- Custom Tray
- Torch
- Lighter
- Scalpel
- Hand pieces
- Purple bur block
- Exam kit (maybe?)
- Blue tray adhesive
- Spoon hand instrument for removing wax spacer
- Gauze for drying periphery of tray
- Wood stick/thompson stick
- Biosurf
- Mouth temp wax and little dish
- Microbrushes (use non fluffy end for mouth temp wax)
- Complete denture or partial denture book
- Monophase PVS (regular set) almost full cartridge (use a lot of it) AND gun \*need

signature for

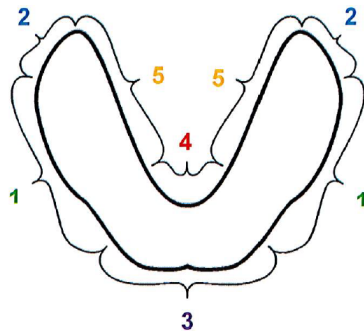
- Tray adhesive \*need signature for
- WHEN GOING TO TAKE FINAL IMPRESSION MAKE SURE TO HAVE THE BOOKLET FOR TEETH SELECTION (bc need to select teeth- shade and size)

**BORDER MOLDING Steps:**

1. Purpose of border molding:
  - a. Hermetic seal of denture base can only be accomplished with border molding process
  - b. Border of mobile and attached mucosa is recorded under slight pressure of border molding material which will provide hermetically sealed denture base to improve retention and stability
2. Try tray in pts mouth and check:
  - a. Labial flange
  - b. Buccal vestibule extension
  - c. Frenum clearance
  - d. If need to adjust then make adjustments
3. Do not remove wax spacer from trays
  - a. They are removed for final impression
4. Heat green stick compound with torch
5. tempered by placing tray in water bath
6. Wet finger with water and check compound safe to place in pt's mouth
7. Excess green compound removed with scalpel
8. Green stick compound in the following order:



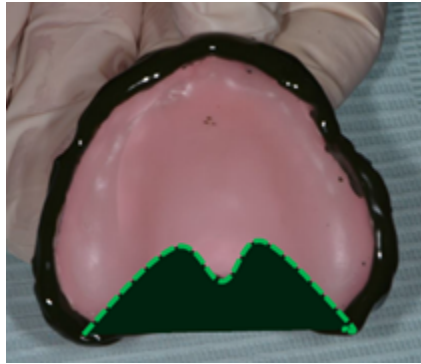
a. Max:

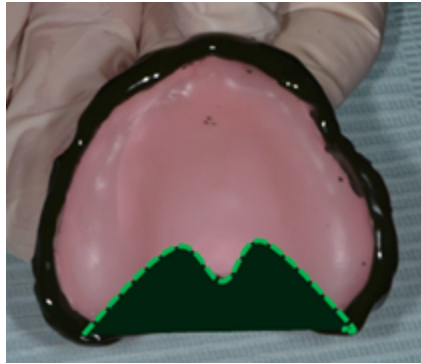


b. Mand:

9. Max post palatal seal:

- a. 2-3mm thick compound on top of tray (remove wax) in butterfly configuration to apply extra pressure in palatal seal area
- b. Developing posterior palatal seal area – area 4
  - i. Posterior palatal seal (PPS) area can be developed either during border molding procedure or after the final impression has been done (using mouth temperature wax in the patient mouth)
  - ii. **In this stage:** Add 2-3 mm thick compound on top of the tray at the posterior border of the tray in the butterfly configuration to apply extra pressure in the palatal seal area [to get hermetic sealing] – do not place compound on medial palatal suture [that is why we have the butterfly shape → to exclude the medial palatal suture]



- c.  [ ← complete border molding seal, post palatal seal left to be done]
  - d. Seat the tray firmly.
  - e. After the tray has been in position for **10 s ask the pt to swallow.**
  - f. Remove the tray and wash under running cold water
  - g. If the PPS area is planned to be developed after the final impression has been completed, border molding is accomplished in the same manner (area 1,2,3)
10. Movements for pt to do while border molding:
- a. You move their cheeks/labial mucosa
  - b. Ask them to say Ahh
  - c. Tongue in and out, side to side, up and down
  - d. Pucker lips and suck

### **FINAL IMPRESSION-PVS Steps:**

1. Remove wax spacer with sharp scalpel after borders have been molded and peripheral seal is accomplished
2. Drill relief holes
  - a. Prevent air bubble entrapment
  - b. Also retention of impression material to tray



c.

3. Apply thin layer of ray adhesive inside and 2-3mm onto the external surface of tray
  - a. Let dry for 3-5mins
  - b. Remove adhesive from holes



c.

4. Load tray with polyether impression material (DO NOT OVERLOAD)
5. Load in pts mouth and firmly seat and allow impression material to come out of relief holes
6. Same soft tissue manipulation as with border molding
7. 6 mins for material to set
8. Break seal: slight rotation fo tray and gently remove it

#### **FINAL IMPRESSION-2 step alginate (for RPD) Steps:**

1. Light body (orange) → IO
2. Heavy body (blue) → tray

## **Crown Preps:**

### **Checklist:**

- Design sheets
- Casts
- Check if have bite reg and facebow record
- From main dispensary:

- a. Operative cassette
- b. Regular high and slow speed handpieces
- c. Operative and fixed burs
- d. Clamps
- e. Rubber dam kit
- f. Syringe
- g. Scalpel
- h. **Walkie talkie**
- i. Hemodent
- j. Biosurf
- k. Vita shade guide (sign out)
- l. Lido
- m. Bite block (small and medium)
- n. Etch + Bond
- o. IntegritY
- p. Composite
- From my mobile:
  - a. Curing light
  - b. Composite gun
  - c. Tofflemire and matrix band
- Disposable:
  - a. Rubber dam
  - b. Hydrogen peroxide rinse
  - c. Short gauge needle tip (27-for infiltration and 30-for intrapulpal)
  - d. Topical
  - e. Microbrushes
  - f. Metal finishing strips
- To get signature for:
  - a. Light and heavy body pvs
  - b. Temp bond

**Steps:**

1. Check have shade for crown if not bring hiro in
2. Putty of tooth if needed for provisional
3. Remove prev restorations/cut to tooth Specs below
4. Build up Core (composite I think)
  - a. Increments of about 3-4mm and LC
  - b. Build up to approximately where I want the final prepped tooth to be
  - c. Refine dimensions with burs
  - d. **Assess amount of remaining tooth structure:**
    - i.  $\geq 3$  remaining walls with adequate O-G height ( $\geq 3\text{mm}$ ) and good thickness ( $\geq 1\text{mm}$ ) OR only 1 axial wall missing → *AMALGAM/COMPOSITE CORE BUILD-UP*
    - ii.  $\geq 2$  remaining walls with good O-G height ( $\geq 2\text{mm}$ ) and good thickness ( $\geq 1\text{mm}$ ) → *PREFABRICATED POST & CORE BUILD-UP*

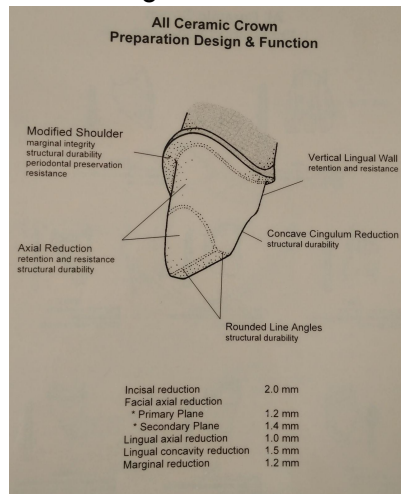
- iii. 1 remaining wall OR very poor condition but critical tooth (compromised situation) → *CAST POST & CORE*

5. Final Impression

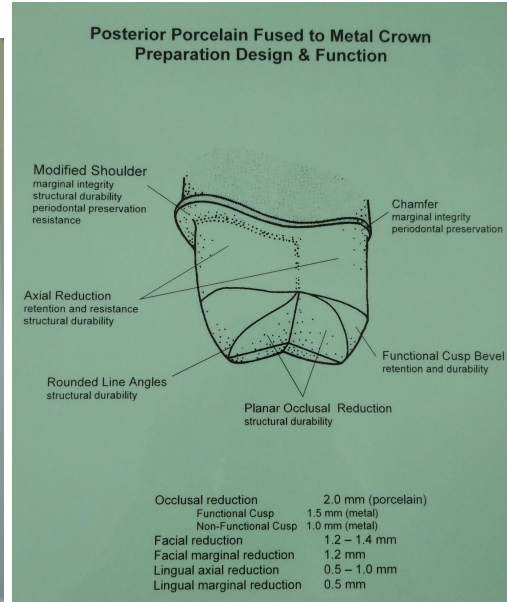
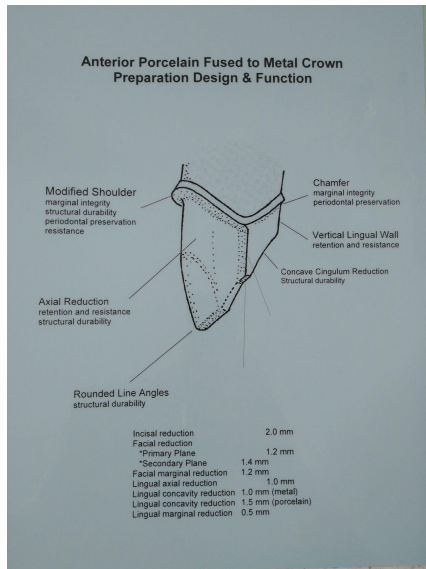
- a. Retraction cord for 5-7mins (max 10mins) + hemodent if tissues are bleeding
  - b. Remove cord
    - i. If using 2 cord technique: larger one on top & bottom cord stays while taking impression
  - c. Sulcus open for 10mins
  - d. Light body (orange) pvs → IO
    - i. Make sure dry (or get bubbles)
  - e. Heavy body (blue) pvs → Tray
6. Check contacts when MI with other teeth (where does he contact)
7. What kind of guidance? Canine? Group function? Anterior?
8. Place Provisional restoration with temp bond

**Crown Specs:**

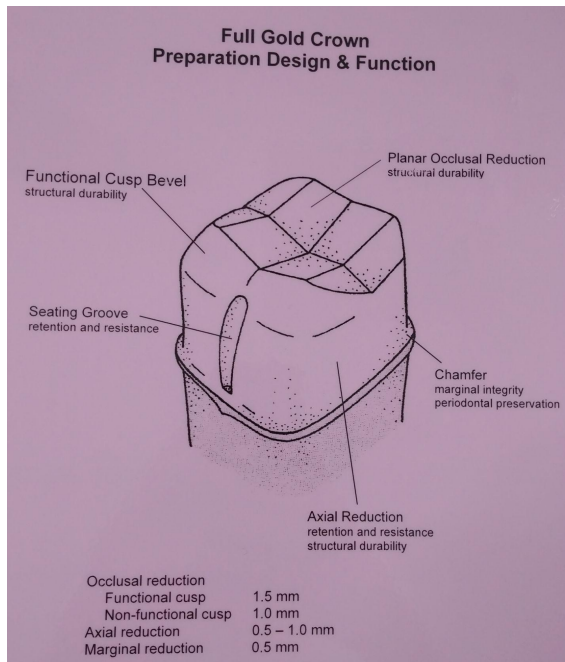
- Zirconia
  - 0.8mm chamfer margin
  - 1mm reduction for non-f(x)al cusp
  - 1.5mm reduction for f(x)al cusps
- Ceramic
  - Occlusal reduction: 2.0mm (f(x)al and non-f(x)al cusps)
  - Facial reduction 1.2mm- 1.4mm (from gingiva to incisal tip aka primary to 2ndary plane)
  - Facial marginal reduction: 1.2mm



- 
- 
- PFM
  - TBD



- 
- Full Gold



## Crown 48hr FU:

### Checklist:

- \_\_\_\_\_

### Notes:

- if cant get pt in (ex they are from far away then doesn't make sense to bring them in for 3 seconds when everything is good) then get email saying that it is all good. If things are



not good then need to see pt

**Steps:**

- Main issues after crown cementation (starting with most common)
  - a. Sensitivity- due to high so make sure occlusion good
  - b. Can floss- tx: wait and let things settle. Pt may need to floss down with floss threader but cant go up thats okay
  - c. Biting cheek- get used to it or make adjustment so that we have buccal cusp more buccal than lingual cusp (this is a curtain so cheek doesn't get caught in it).  
Cheek biting from not having the curtain so biting end to end.

## **Framework Try in:**

**Checklist:**

- Casts and metal framework and RPD design
- Bird beak pliers
- Exam kit
- Purple bur block
- Fixed bur block
- Quick check green denture spray
- Articulating paper (if there are opposing teeth)

**Steps:**

1. Try framework in pts mouth
2. Make sure seated all the way by:
  - a. Trying to place probe and shepherd's hook under metal (lingual plating and rest seats)
3. Ask pt any pain or sharpness or pinching areas
4. Hold rest seats and then see if the metal framework moves up and down or side to side
5. Check:
  - a. Retention
  - b. Lateral movements
  - c. High spots
  - d. Occlusion (if has opposing teeth)
  - e. Esthetics
6. If it wiggles anterior to posterior

**How to use quick check:**

1. Spray on intaglio and see where it rubs off (these are high areas)

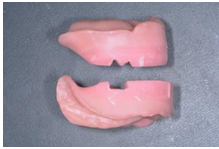
## **Cast Partial+Transitional-Occlusal Rims & Records:**

**Checklist:**

- Dispensary:
  - Flexible ruler (clear long one)
  - Purple bite registration material (quick bite) or aluwax+torch or hot water bath
  - Fox occlusal plane indicator
  - Tongue blade (tongue depressor?)
  - Torch
  - Exam kit
  - Handpieces
  - Occlusal rim material
  - Tooth shade guide (ivoclar shade guide)
  - Mold guides with accompanying charts (Ivoclar blueline)- maybe I have?
  - Denture adhesive
  - Denture brush
  - Boley gauge
  - Baseplate wax
  - Steri tape
- Side drawers
  - Pink wax
  - Q tips
  - Thompson stick
  - Vaseline
- Cabinets with paperwork
  - Tooth charge slip
- My lab stuff
  - Occlusal rims + casts
  - Wax adder instruments
  - Bite fork + facebow + transfer jig
  - Lighter
  - Hot plate (with wooden handle)
- Mobile
  - Hand held mirror

**Steps:**

1. **Before appt look at the teeth pamphlet and ask pt to bring pic of what he/she looked like with teeth**
2. **It's like complete denture case!!!!**
3. Place occlusal rims in pts mouth, check:
  - a. Make the occlusal rims match their lip line and contour of their lip
  - b. Check there are no painful or areas that are pinching
  - c. Exaggerated border molding movements
    - i. Esp make sure relief on lingual and labial frenum (tend to be overextended)
  - d. Ask to lift tongue EXAGGARATED (up, down, sides of mouth)
  - e. Buccal frenum

- i. Thompson stick on ant and post of buccal frenum so that it marks exactly where you need to adjust on the denture
    - f. All above are making sure that the denture doesn't lift out
    - g. \*key is custom tray not being overextended (if it is then you make cast then that cast will be used to make the final denture)
    - h. Check there is adequate lip support
    - i. Mark occlusal rims:
      - i. At rest we want about 1-2mm of max centrals showing + take pic
      - ii. Have pt smile then mark the high smile line on rim + take pic
  - 4. Fox occlusal plane indicator
    - a. Hold against max rim or teeth and make sure parallel with **ala-tragus and interpupillary lines**
      - i. Ala-tragus: ala of nose to the upper border of tragus to upper border of tragus of ear
    - b. Horseshoe shaped part on the rim
    - c. Widest part sticks out and represents occlusal plane line
    - d. Estimate how parallel they are to the other 2 imaginary lines
  - 5. Bite registration with occlusal rims
    - a. Extraorally cut out:
      - i. Max: large V
      - ii. Mand: box
    - 
    - iii. Only on pts right
    - iv. Only on pts right
  - b. Soften wax and ask pt to bite down so this will give marks where there are teeth and the V+box will give us bite reg in that area
  - c. Place occlusal rims in pt's mouth
  - d. Place bite reg material in these areas
  - e. Have pt bite down into MI
6. Facebow with bite fork
  - a. Place Max occlusal rim in pt's mouth
  - b. Place purple bite registration material on bite fork
  - c. Have pt bite down in MI
  - d. Take bite fork out of pt's mouth
  - e. Place facebow and bite fork
7. SELECT TEETH SHAPE, SHADE, AND SIZE
8. **ASK WHAT TEETH I PLACE FIRST!!**

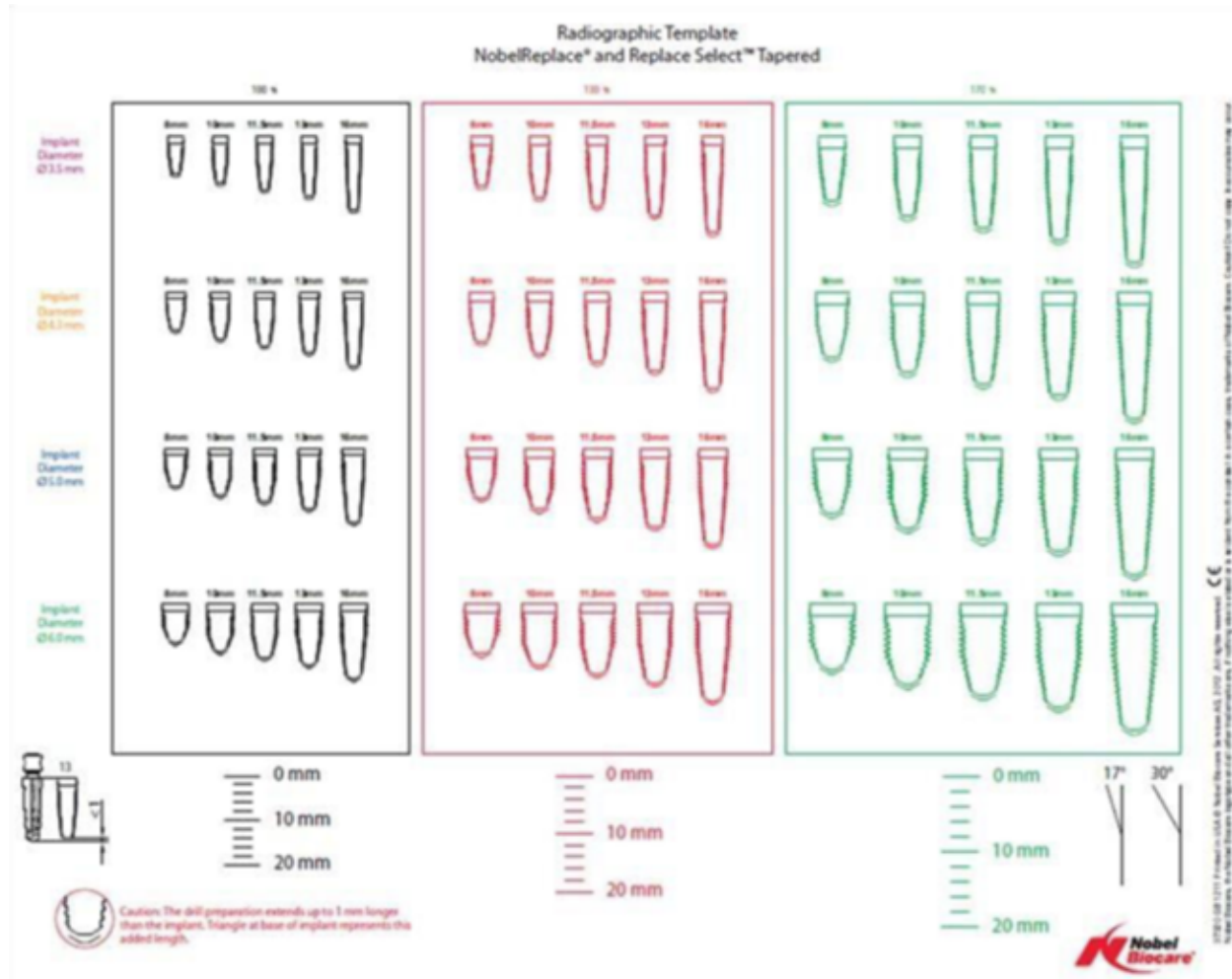
# Implant-Rad Stent:

## Checklist:

- Rad stent
- Mounted casts
- Unmounted cast (upper and lower)
- “Removable lab rx” paper
- Office verification slip (OVS)
- Tell DA we are doing PAN
- Handpieces
- Purple bur block
- Glue for surgical stent from case room

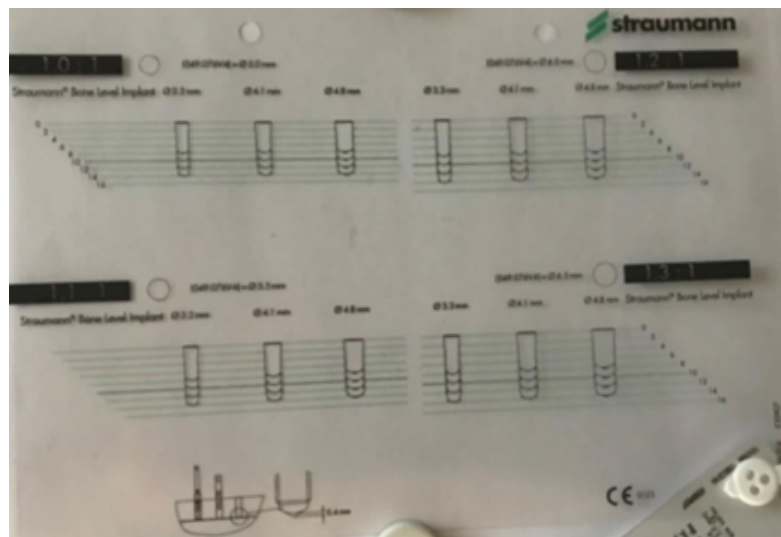
## Steps:

1. Try rad stent in pt's mouth
2. Take PAN
3. If covering prosth instructor satisfied w position of radiographic marker (i.e., cylinder) on pan, pt dismissed.
4. If covering instructor not satisfied, during appt need to relocate the cylinder and take a new rad (either another pan or PA if instructor is okay with that).
5. Removable lab rx paper:
  - a. “Fabricate surgical stent for tooth \_\_\_ implant placement” ← I think
6. Calculate radiographic distortion
  - a. Tube = 10 mm
  - b. Tube on xray = 13 mm
  - c. Distortion =  $13/10 = 130\% = 30\%$
  - d. Varies throughout image and based on the pts position (even if using the same machine always calculate it)
7. Nobel



- a.
  - i. Green=30% distortion
  - ii. Measured from tissue level

8. Straumann



- a.
- b. 8 differ distortions (4 per page)

- c. Each diameter has different lengths
  - d. Tissue + bone level
9. Note steps:
- a. Submit for surgical stent fabrication
  - b. get surgical stent back
  - c. Submit whole case for consultation (OMFS letter, surgical stent, etc)
10. Note on implant placement:
- a. 1.5mm from adjacent teeth (so 3mm)
- 11. Ask Ibarra:**
- a. Need mounted upper cast sent to lab too?
  - b. "Trace all teeth and anatomic landmarks"- lower (IAN, lower border), dont do upper
  - c. Send: trace, lab rx form, office verification, mounted (upper and lower)

## Transitional Partial-Ant tooth try in:

### Checklist:

- Occlusal rim
- Additional wax rim
- Wax adder instruments
- Torch
- Lighter
- Complete and partial denture manual
- Handpieces
- Purple bur block
- Bio surf

### Steps:

1. Try occlusal rim in pt's mouth
2. Look at
  - a. Esthetics (when pt smile big and at rest)
  - b. Overlap
  - c. Overjet
3. Make sure no reverse smile
4. Want teeth to be on top of the ridge so look at where arch is placed
5. Check VDR again (if had issues getting it the first time)
  - a. If VDR is hard to get then can use other things to check the VDR: speech, can pt close without lip strain, lip competence.
  - b. If pts VDR was increased then when relaxed then ant teeth would still be in contact (like they were in MI)

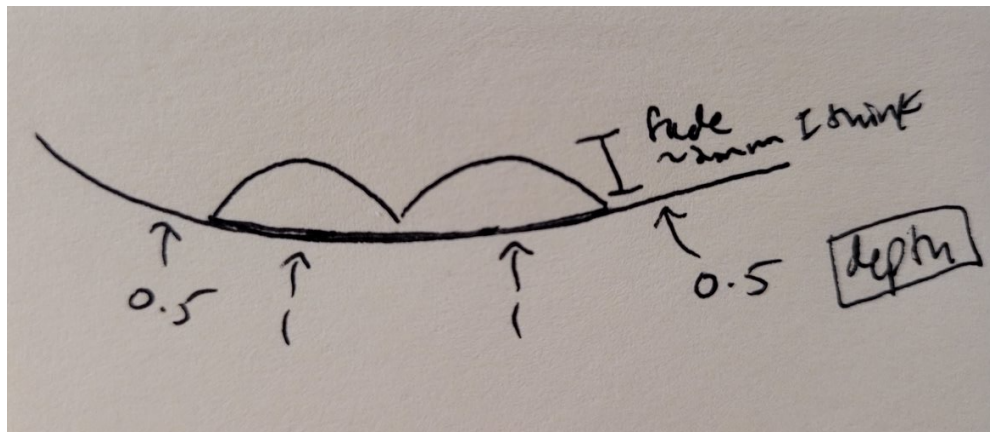
## Transitional Partial+Cast Partial-Post tooth try in:

### Checklist:

- Occlusal rim
- Additional wax rim
- Wax adder instruments
- Torch
- Lighter
- Complete and partial denture manual
- Handpieces
- Purple bur block
- Bio surf
- Scalpel
- Shimstock
- Articulating paper
- Denture adhesive

### Steps:

1. Try occlusal rim in pt's mouth
2. Look at
  - a. Esthetics (when pt smile big and at rest)
  - b. Overlap
  - c. Overjet
3. Want teeth to be on top of the ridge so look at where arch is placed
4. Check with shimstock on post teeth
5. **TAKE PICTURESSSSSS**
6. On the cast (Dr. Saldadlin likes it when you do following bc you get good suction and good posterior palatal seal:



## **Transitional Partial+Cast Partial-Denture try in:**

### **Checklist:**

- Occlusal rim
- Additional wax rim
- Wax adder instruments
- Torch
- Lighter
- Complete and partial denture manual
- Handpieces
- Purple bur block
- Bio surf
- Scalpel
- Shimstock
- Articulating paper
- Denture adhesive

### **Steps:**

- Check book but for Ron we want to:
  - Get maximum # of contacts AND try to get bilateral balanced occlusion



## Sectioning a Bridge:

### Checklist:

- Gold bur block (skinny disc)
- Thin long shank
  - Carbide- for metal
  - Diamond- for porcelain
- Cement:
  - Short term: temp bond
  - Long term: Fuji temp (use with UC pt on may 25)

### Steps:

1. Pt has bridge in hand
2. Section it
3. Place in pt's mouth
4. Cement into place

## 24hr denture check:

### Checklist:

- Purple bur block
- Handpieces
- Exam kit
- Lots cotton rolls and gauze
- PIP
- Horseshoe articulating paper
- Complete denture and partial denture book

### Steps:

1. See where pt having pain or issues
2. PIP onto intaglio of denture and adjust any areas as needed
  - Border movements
  - Bite down
3. PIP 3-4mm on the flanges of 1 side and place into pts mouth
4. Do step 3 for other side of denture
5. Then do step 2-4 for other denture too. Do for all dentures you delivered even if the pt does not have any pain.
6. Check occlusion with articulating paper
  - a. Want upper contacts on L
  - b. Want lower contacts on B
  - c. Adjust away any that do not fit ^
7. Dismiss pt

# Zirconia Crown Cementation:

## Checklist:

- Dispensary:
  - Purple bur block
  - Handpieces
  - Op kit
  - Perio kit (maybe want scaler)
  - Relyx unicem (self-adhesive) \*what shade? (Signature)
  - Biosurf
  - Burs for zirconia:



- \*Blue bur kits above are EO and IO use
  - Dispensary zirconia polishing EO burs (signature)
  - Walkie
  - Ivoclar (signature)
- Locker:
  - Mounted and unmounted cast
- Mobile:
  - Shimstock
  - Articulating paper
  - Floss
  - Light cure
- Carts:
  - Pumice + prophy cup
  - Lots of microbrushes

## Steps:

1. Disinfect crown using **biosurf** (lots)
2. Let it sit for **5mins**
3. **Water** spray
4. **Dry** crown
5. Check adaption of restoration **IO**
  - a. Pay attention to path of insertion

6. **Adjust** with low speed burs in following **order**:
  - a. Interproximal
  - b. Internal surface
  - c. NOT occlusal \*this is done after cementation (don't want to start cracks)
7. **Polish** external surfaces with specialty ceramic rubber points if adjusted with burs
8. **Internal surface pre-tx**:
  - a. Clean internal surface with **Ivoclean**
    - i. Eliminates phospholipids from saliva
  - b. Rinse
  - c. Dry crown
  - d. Take crown to lab and sandblast intaglio with:
    - i. aluminum oxide particle size 40 micrometers
    - ii. for 10-15secs with pressure of 1 bar (14.5 psi) and nozzle to surface distance of 10mm
9. **Tooth tx**:
  - a. Clean tooth with **pumice + prophy cup**
  - b. Isolation** top notch
  - c. Fill crown with **Relyx Unicem 2 cement**
    - i. 0.5-1mm of cement in the crown
  - d. Set tooth onto prep + apply **finger pressure**
  - e. **Remove excess** cement
    - i. microbrushes
  - f. Use dental **floss** to complete cement removal (try tying not technique)
  - g. ONCE clean then light cure:
    - i. all margins **20sec** each surface
  - h. Check + adjust **occlusion** PRN
  - i. Light cure: 2min working time from start of mixing**
  - j. Self-cure: 5min working time from start of mixing**
10. If instructor wants me to take a BW to see if the crown is seated, put the tube at 0 degrees (not +10 degrees)

**Tips from Dr. Militec when did 35 zirconia crown:**

- You only want centric occlusion (MI) contacts
- NO lateral excursive, protrusive, retrusive contacts
  - Lateral is esp bad because
    - you can cause sensitivity (then you are not sure if the sensitivity is pulpal related or due to occlusion)
    - You could fracture off the tooth+crown
- Order of movements:
  - MI
  - Left and right excursive
  - Protrusive
  - Retrusive
- Why those movements and order:

- MI
  - Want to see how the teeth contact
  - Want not too heavy and not too light contact
  - Remember where this MI contact
- Left and right exclusive
  - Don't want any additional contacts other than MI, if so then remove the sliding contacts
- Protrusive
  - Ask pt to move jaw forward then once they go end to end, ask them to bring the jaw back (retrusive)
  - Don't want any additional contacts other than MI, if so then remove the sliding contacts
- Retrusive
  - From protrusive ask them to go as far back as they can go with their bottom jaw
  - Don't want any additional contacts other than MI, if so then remove the sliding contacts
- Ivoclar on intaglio of crown
- Yellow cover over headlight
- Put cement in the crown and wet all surfaces and leave some near the cusp tip areas of the intaglio
  - Use instrument to make sure its all wet (ex gold ended instrument in op kit)
- Place on tooth with lots of pressure
- Remove the excess with microbrushes and floss tied with a knot
  - Finger is still on the crown so places you cant see then go with feel with the microbrush
- Light cure all sides (B,L,M,D,O)

#### Info about Relyx:

- **Resin cement**
- **Light cure: 2min working time from start of mixing**
- **Self-cure: 5min working time from start of mixing**
- Self-adhesive (don't need any other bond with it)
- Do not need conditioning of the tooth
- Dual cure (but our notes say this is self-cure but curing helps but not really dual cure- lol sooo light cure period)
- Mechanical properties better than zinc phosphate and glass ionomer-based cements
- Little risk of marginal gap formation
- Moisture intolerance
- Little risk of postoperative sensitivity
- Min swelling or expansion due to water absorption
- Releases fluoride

# Periodontics

## **Procedure 1:**

**Checklist:**

**Steps:**

Pediatrics

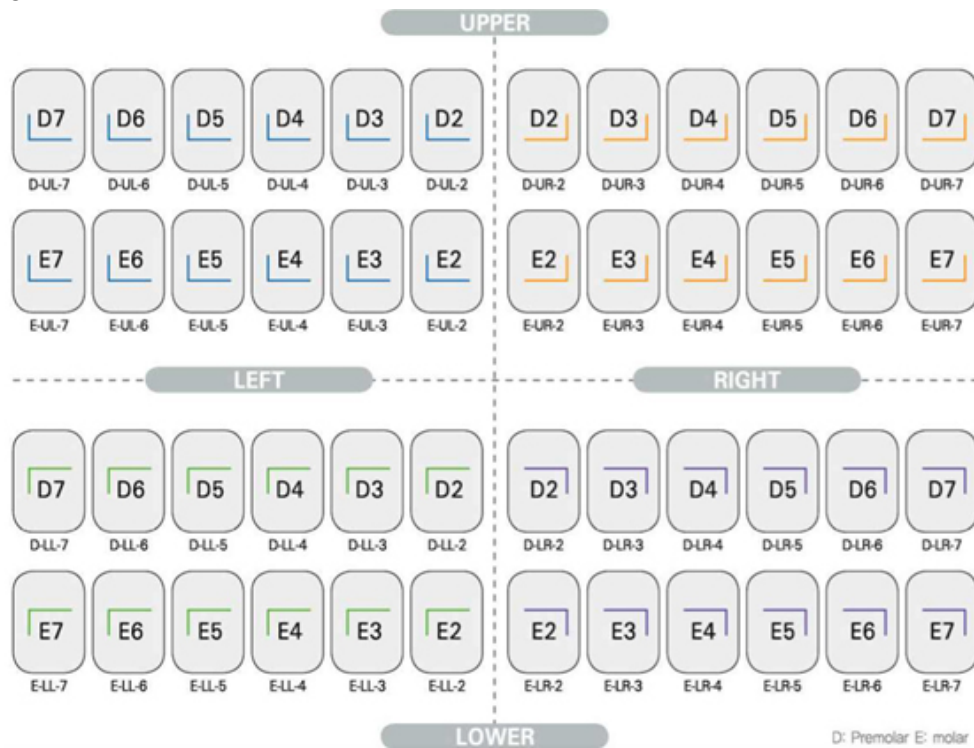
# Stainless Steel Crown:

## Checklist:

- Topical and local anesthesia
- Rubber dam kit
- Boley gauge
- Spoon excavators
- Stainless steel crown
- Crimping forceps
- Ball and socket forcep
- Floss (check contacts)
- Cement (GI)

## Steps:

- Procedure steps for prepping tooth: <https://iits.dentistry.utoronto.ca/stainless-steel-crown>
- Selecting correct stainless steel crown:



- 
- D- primary 1st molars
- E- primary 2nd molars
- Numbering: increasing size



Primary Molar Crown Conversion Chart

MEDIAL DISTAL WIDTH IN MM	3M® Stainless Steel		3M® Unitek®		Rocky Mountain®	
	LEFT	RIGHT	LEFT	RIGHT	STANDARD/ LEFT	FESTOONED/ RIGHT
<b>UPPER FIRST PRIMARY MOLARS</b>						
6.6			UL1	UR1		
6.8					C18/C155	C17/C150
7.0			UL2	UR2		
7.2	D-UL-2	D-UR-2			C5/C156	C1/C151
7.4			UL3	UR3		
7.6	D-UL-3	D-UR-3			C6/C157	C2/C152
7.8			UL4	UR4		
8.0	D-UL-4	D-UR-4			C7/C158	C3/C153
8.2			UL5	UR5		
8.4	D-UL-5	D-UR-5			C8/C159	C4/C154
8.6			UL6	UR6		
8.8	D-UL-6	D-UR-6				
9.0			UL7	UR7		
9.2	D-UL-7	D-UR-7				
<b>UPPER SECOND PRIMARY MOLARS</b>						
8.5			UL1	UR1	C25/C179	C21/C175
9.0			UL2	UR2	C26/C180	C22/C176
9.2	E-UL-2	E-UR-2				
9.4			UL3	UR3		
9.5					C27/C181	C23/C177
9.6	E-UL-3	E-UR-3				
9.8			UL4	UR4		
10.0	E-UL-4	E-UR-4			C28/C182	C24/C178
10.2			UL5	UR5		
10.4	E-UL-5	E-UR-5				
10.6			UL6	UR6		
10.8	E-UL-6	E-UR-6				
11.0			UL7	UR7		
11.2	E-UL-7	E-UR-7				
<b>LOWER FIRST PRIMARY MOLARS</b>						
6.9			LL1	LR1		
7.3	D-LL-2	D-LR-2	LL2	LR2		
7.4					C20/C165	C19/C160
7.7	D-LL-3	D-LR-3	LL3	LR3		
7.8					C13/C166	C9/C161
8.1	D-LL-4	D-LR-4	LL4	LR4		
8.2					C14/C167	C10/C162
8.5	D-LL-5	D-LR-5	LL5	LR5		
8.6					C15/C168	C11/C163
8.9	D-LL-6	D-LR-6	LL6	LR6		
9.0					C16/C169	C12/C164
9.3	D-LL-7	D-LR-7	LL7	LR7		
<b>LOWER SECOND PRIMARY MOLARS</b>						
8.5			LL1	LR1		
9.0			LL2	LR2	C29/C183	C33/C187
9.4	E-LL-2	E-LR-2				
9.5			LL3	LR3	C30/C184	C35/C188
9.8	E-LL-3	E-LR-3				
10.0			LL4	LR4	C31/C185	C35/C189
10.2	E-LL-4	E-LR-4				
10.5			LL5	LR5	C32/C186	C36/C190
10.6	E-LL-5	E-LR-5				
11.0	E-LL-6	E-LR-6	LL6	LR6		
11.4	E-LL-7	E-LR-7				
11.5			LL7	LR7		

- Hall technique:
  - managing carious primary molars by cementing pre- formed metal crowns, also known as stainless steel crowns, over them without local anaesthesia, caries removal or tooth preparation of any kind

# Space Maintainers:

## Checklist:

- Cement (GI)
- 'Pusher'
- Crimper
- Cotton rolls

## Notes:

\*If the permanent successor is to erupt within 6 months, a space maintainer is not necessary

Space Maintainer Options:

- a) Distal Shoe → missing one primary posterior tooth (esp when primary second molar lost)



- b) Band and Loop → missing one primary posterior tooth



- c) Lingual Arch → missing multiple primary posterior teeth (mandibular)



- d) Nance Appliance → missing multiple primary posterior teeth (maxillary)



- e) Trans Palatal Arch → missing multiple primary posterior teeth (maxillary, unilateral)



Space maintainers likely vary for placement depending on which type you use, but here is a good video for the general process:

<https://www.youtube.com/watch?v=uP9WIOYZ44s>

# Autism:

## Checklist:

- Dfdf

## Steps:

- Before pt arrives
  - Did they get a tour of schulich dent?
  - Allow pt to bring fav item (blanket, toy etc) to hold for the visit
- Communicate with the pt
  - Be **repetitive; speak slowly and in simple terms.**
  - Make sure explanations are understood by asking the patient if there are any questions
  - **Alternative communication system** such as a picture board or electronic device – if the patient uses this **make sure it is available**
  - Give only **one** instruction at a time
  - **Reward** the patient with compliments after the **successful** completion of each procedure.
  - **Actively** listen to the patient
  - They may have **difficulty in communication**, look out for **hand signs or signals**
  - Invite the parent into the operatory for assistance and to aid in communication with the patient
  - Keep appointments **short.**
  - Gradually progress to more **difficult procedures**
  - Schedule the patient's visit **early in the day**, when the dentist, the staff, and the patient will be less fatigued.
- Levels of autism
  - Level 1: require support but its more of a behavioural disorder
    - DDS implication: the kid may be a lil difficult when you try to communicate, hard to initiate social interactions, but nothing to worry ab
    - Tx them in your clinic
  - Level 2: require substantial support, show repetative behaviours typical of autism (same place, person, etc)
    - DDS implication: you can Tx them
  - Level 3: require substantial support, deficits in verbal and non-verbal skills, severely intellectually disabled
    - DDS implication: Dental home/preventative services = your practice, but OP Tx is under GA
- Medical
  - Problems associated with autism esp level 3
    - Poor muscle tone

- Poor coordination
  - Drooling
  - Hyperactive knee jerk, and strabismus (cross eyes)
  - 30% eventually develop epilepsy
    - These disorders are associated specifically with level 3 autism
      - Their consequences for you?
      - How do you develop a dental home?
- Medical Conditions
  - Children with down syndrome are prone to
    - Cardiac defects
    - Leukemia
    - Upper respiratory infections
  - Very Important to take a medical History
- Level 3 - Behavioural problems and their consequences
  - Repetitive Actions
  - Strict routines
  - Prefer soft foods and sweetened foods
  - Tend to pouch food instead of swallowing
  - Results in: HIGH CARIES
- Dental management
  - Adhere to routines
  - May have many appts to acclimate to dental enviro
  - Skeletal (facial abnormalities)
    - Underdeveloped midface
    - Creating a prognathic occlusal relationship.
    - Mouth breathing,
    - Open bite
  - Oral findings
    - Macroglossia - large tongue makes isolation tough
    - Fissured lips and tongue
    - Angular cheilitis
    - Delayed eruption times
    - Missing and malformed teeth
    - Oligodontia
    - Small roots
    - Microdontia
    - Crowding
    - Low level of dental caries
  - Periodontal disease
    - High Level of Periodontal disease bc of:
      - Local Factors
        - 1. tooth morphology
        - 2. bruxism
        - 3. Malocclusion
        - 4. poor oral hygiene
      - Systemic factors

- 1. poor circulation
  - 2. decreased humoral response, general
  - 3. physical deterioration at an early age
  - 4. and genetic influences
- 
- Cause of autism
  - Trisomy 21
  - Genetic mosaicism (person has two or more genetically different sets of cells in his or her body)
  - Translocation of chromosome 21

## Oral Surgery

## **Procedure 1:**

**Checklist:**

**Steps:**

Operative

## **Restoration:**

### **Checklist:**

#### **Dispensary:**

- Operative cassette (blue) + Garrison ring
- Operative bur blocks
- Handpieces
- syringe + retractor
- Clamps
- Etch + bond
- Permaseal
- vita shade guide
  - if you're using composite
  - Give a tag
- Get needle and local anesthesia (usually lidocaine) from dispensary if you'll be giving LA. Also get topical anesthesia and Q-tip if you're giving LA
- Miracle mix:
  - Dycal
  - Miracle mix
  - Amalgamator
  - Amalgam gun
- IO camera
- Walkie talkie
- Vitrebond
- Bite blocks

#### **Disposables:**

- High volume suction and other suction
- Microbrushes (for bond) \*BP WANTS LOTS

#### **Mobile:**

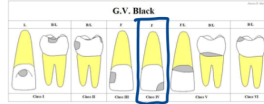
- Curing light
- Tofflemire bands- both types
  - SET UP
- Wooden wedges
- Articulating paper

#### **Tips:**

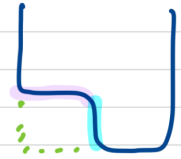
- Al-Shakarchi



## Class IV



prep fracture

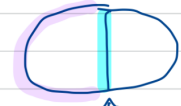


Bevel

• 169 or 170

• Contact area: needle diamond or smallest diameter chamfer

looking down @ mesial edge



straight wall

- 
- The key difference from how we were taught to how Al-Shakarchi does it:
  - 90 degree wall (NO BEVEL ON THIS bc we want to keep it thick so no filling chips off)
- After done beveling it looks like a crown prep (but the margins are bevels, not steps like modified shoulder)
  - Its smooth and continuous from the mesial to the highlighted blue wall^
- Before filling use the clear (not course) part of strip on adjacent tooth and on the mesial wall to:
  - smooth any areas on the adjacent tooth
  - Get rid of any little bits of enamel hanging off
- Use flowable and composite
  - This allows the flowable to flow and fill in any voids that may happen when packing in composite resin
- Use the disks or football or whatever I need, until I feel no catch from tooth to filling
- And if need to add any flowable without doing etch and bond again (ex incisal edge i did it and a little void hole on the buccal)
- Use disks a lot to get it smooth

### Steps:

1.

# Endodontics

## General Tips:

- When you had to do your caries removal before endo, did u remove caries on periphery then move inwards on the tooth then if tooth was pretty much caries free and u had pulp exposure you started the endo at that point? I'm just trying to picture the process lol
  - **Yeah I removed the Carie's first as if I was just doing the filling. Then as I got close to the pulp it was still soft so ended up being a bit mor aggressive with the prep to get a proper endo access (since she was symptomatic I knew we would be doing endo)**
  - 
  - **Also depending how much tooth is left you may have to do a bit of a build up with GI before starting the endo to get a clamp on there.**
  - 
  - **Also if you have a Hot tooth and the pulp is not profoundly numb, keep access to the chamber small at first if you think you'll have to do intra pulpal injection! I guess you need pressure for it to work well so make sure that pulp is numb before opening it super wide (stick an explorer in there lol)**
- **Hot tooth-** just due to lots of inflammation. Takes about 1 week to see this on rads. Pain from inflammation, low pH in the area, gas build up (necrosis.. bac releasing methane)

## RCT:

### Checklist:

- From main dispensary:
  - Endo cassette (green)
  - Operative cassette
  - Regular high and slow speed handpieces
  - Endo burs
  - Operative burs
  - Clamps, rubber dam kit AND endo Rubber dam frame
  - Endo handpiece + cord
  - Syringe
  - Walkie talkie
- From my locker + mobile:
  - Endo activator
  - Endo motor
  - Curing light
  - Composite gun
  - GP cones
- Endo dispensary:
  - PDL injection syringe



- 
- Vita shade guide (sign out)
- LA
- Bite block (small and medium)
- file eeze
- endo clean stand
- Files
  - K endo files
  - wave files
  - Apical gauging files (NiTi)
  - Vortex files
- paper points
- Size 2 film
- Green xray rin
- Apex locator
- Materials
  - Ca(OH)<sub>2</sub>
  - NaOCl
  - Composite
    - Etch + Bond
  - Fuji gun
  - Miracle mix / fuji II LC
- Heat tips
- GP cones
- Thermaseal sealer + mixing pad
- Calamus tips
- Topical
- Rubber dam
- Disposable:
  - Hydrogen peroxide rinse
  - Prophy paste (pink one used in peds) + prophy cup
- In room already:
  - Apex locator
  - Short gauge needle tip (27-for infiltration and 30-for intrapulpal)
  - EDTA
  - Scalpel
- From instructor desk:
  - Orange endo consent + post op instructions \*give prior to RCT tx

**Steps:**

1. Informed consent for endo:
  - a. Risks

- i. Fill it then extra material that goes past the root
    1. Upper: body will eat it up eventually
    2. Lower PM or M: worst case scenario paraesthesia (tingling sensation) for week, month, yr
    3. Lower anterior not this issue^
  - ii. Perforate while cleaning so files can go in different direction rather than straight down the canal so then prognosing of the tooth is not very high and probably exo
    1. Not common but need to mention incase it does happen
  - iii. File can break in canal and would make it hard to get successful file
    1. Niko can attempt to remove or worst case: still backfill, but the RCT can fail and can get recurrent infection
- b. Benefits
- i. Removing infection and dead nerve that is source of infection
- c. Any questions?
2. Forms to fill out on salud

The screenshot shows the 'Endodontic' form in the Salud EDR system. The left sidebar has 'Endodontic' circled in red. The main form area includes fields for Patient Name, Health Card #, Staff Member, Date of Birth, Age, Episode No, Address, and Tooth num. Below these are sections for 'Complaint' (Pain, Swelling, Sensitivity, Discolouration), 'Pain/Quality' (Sharp, Dull Ache, Pulsating, No Pain, When stimulated, Spontaneous, Lingering, Reproducible, Sleep disturbing, Intensity), 'Location of Problem' (Area, Localised, Diffuse, Referred, Radiating), 'Chronology of Problem' (Problem in last month?, Multiple Episodes?, When did it start?, Previous Treatment), and 'Affected By' (Hot, Cold, Nothing, Chewing, Percussion, Sweet, Palpaton, Flying or Diving?, Head Position, Activity, Time of day).

- a. Schlich
  - b. Difficulty assessment form cut-off point: **21 points**
3. Remove temp crown with hemostat
  4. Remove excess cement with prophy paste (pink one used in peds) + prophy cup
  5. High speed to remove flowable
  6. Remove cotton pellet
  7. Remove CaOH
    - a. Copious irrigation w NaOCL
    - b. Watch wind any file size
    - c. Lots of NaOCI
    - d. Can see when NaOCl coming out clear
    - e. Check patency (10k)

## Cleaning and Shaping

1. Endo forms filled out on salud (under endo tab)
2. Give pt orange papers for post-op instructions
3. Make sure op/prosth and pt have approved final restorative plan

### 4. Pre-Op Radiograph

- a. Establish Est Working Length (Apex - 0.5mm)

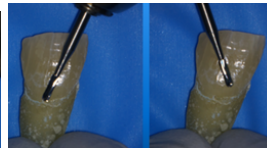
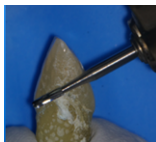
### 5. Access

- a. Locate roots, remove chamber contents
- b. #2 round diamond bur
  - i. Trace **outline** (0.5mm deep), angle bur 90 degrees to occlusal/incisal surface and 45 degrees to long axis for incisors



1.

- ii. Deepen **1-1.5mm** to extend into dentin
- c. Once in dentin
  - i. Use: Diamond /carbide fissure bur (1557)
  - ii. Bur parallel long axis of tooth



- iii. **Mistakes:**

### d. Drill deeper

- i. Stop when you reach pulp chamber roof



- ii. Drill in a funnel shape:

### e. When you reach the pulp

- i. Use: Remove pulp with spoon (OR ss round bur)
- ii. Completely de-roof pulp + clean chamber → check with explorer

### f. Smooth walls

- i. Endoz bur



### g. Locate orifices of canal(s) visually

- i. Use: endoz and can also use diamond bur
- ii. Refine access to a funnel shape so the apex of the funnel is at the orifice of root canal

6. Irrigate
7. Place exploratory files in canals
  - a. **Exploratory Radiograph** (coronal 2/3rds)
8. Shape canals to  $\frac{2}{3}$ 
  - a. SS files until reach glidepath (K15)
  - b. Wave Small 20 (Mode 2) **Yellow**
9. Insert file to Est Working Length
  - a. Size 15 FILE!!!
  - b. Confirm with apex locator
  - c. **Working Length Radiograph**
    - i. Size 15k file
10. Shape canal to WL (0.5mm less than WL)
  - a. SS until glidepath achieved (K15)
  - b. Shape entire canal w Wave Small 20 (Mode 2) **Yellow**
    - i. Brush motion and wave as much as you want
11. Complete cleaning and shaping
  - a. Wave Primary 25 (Mode 2) **Red**
    - i. Examine flutes
    - ii. Brush motion and wave as much as you want
12. Gauge the apex
  - a. Start w NiTi 30 (.02) moving up until Step Up
  - b. The correct NiTi should feel snug (tugback only with GP)
  - c. Final gauge (final NiTi): size below step up
13. Shape apex
  - a. Vortex from 30 up to MAF one \*above\* final gauge/NiTi (Mode 5)
    - i. Wave 25 so start at 30
    - ii. Only vortex once
14. Dry with 1 or 2 paper point
15. Select MC (same as MAF)
  - a. Checking GP
    - i. GP with black (then cut with scalpel as needed)
  - b. Goes to WL and get tug back at WL
  - c. Fit into \*wet\* canal
  - d. Feel tugback
  - e. **Cone fit Radiograph** - check for WL
  - f. Then GP cone into bleach
    - i. **\*NEW\***Obturation hygiene: placement of selected GP cones in **NaOCl for 1 min of disinfection**, then thoroughly drying with clean gauge. **Do not use your fingers/gloves** to handle the GP cones or the paper points **after** the disinfection. This is to prevent cross-contamination prior to obturation. Trying to do the obturation in a fully clean environment and tools could be a key for the endodontic treatment success.
16. Select pluggers and heat tips (esp the one that fits 5mm from WL)
  - a. Pre-fit at: -6mm, -10mm, -14mm etc
  - b. Usual order of pluggers from coronal to apical
    - i. Coronal  $\frac{1}{3}$  → **blue BIG**

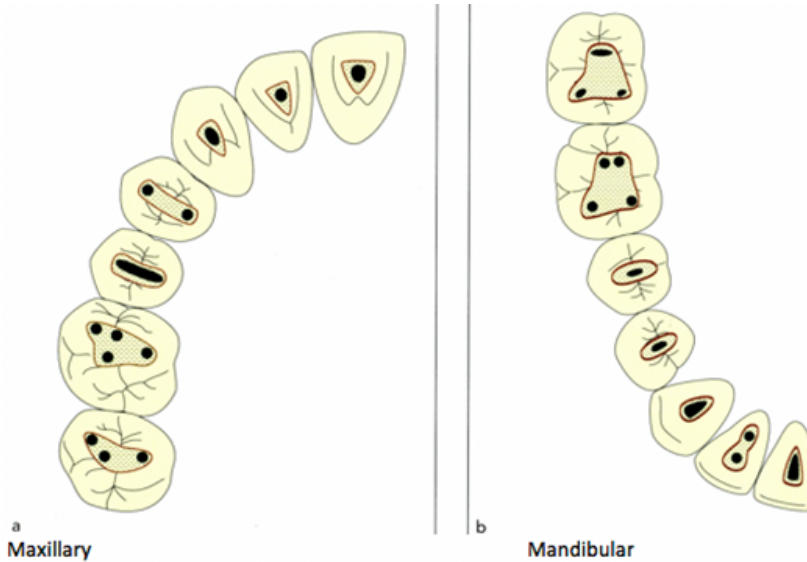
- ii. Middle  $\frac{1}{3}$  → yellow **BIG**
  - iii. Less than middle  $\frac{1}{3}$  → black **BIG**
  - iv. 4-5mm → blue *little*
17. Final irrigation protocol \*TIME
- a. Endo activate + bleach - 30 s. Usually red tip
  - b. Endo activate + EDTA - 30 s
  - c. Endo activate + bleach - 30s
  - d. Flush w bleach
  - e. A-D to etch for GP (not really clean or remove debris so do after MC)
18. Dry Canal
- a. PP Same size as MC (same as MAF)
19. Determine if post needed
- a. At least 5mm at the apex
  - b. Amount of post in root: Clinical crown = 1:1
    - i. Ex 5mm clinical crown then 5mm of post in root
20. Apply sealant
- a. Cover 5mm w paste (circumferentially)
21. Downpack
- a. GP cone until -6mm (Ludmila: 18mm-6=12mm)
    - i. Min of GP you need to keep is 4mm (so at -4mm)
  - b. Downpack Radiograph**
22. Backfill
- a. **Backfill Radiograph**
23. **Final Radiograph**
- a. Final or temp resto is on and without rubber dam

#### IRI

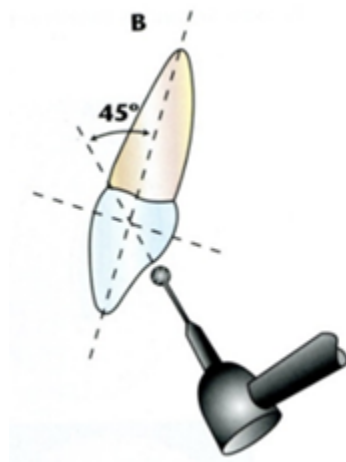
- At least 1ml or more of NaOCl used bw instruments
- After each irrigation check patency:
  - **Use a small size (# 8 or #10) stainless steel K file set to 0.5mm past WL.**
    - This will reach a position just past the constriction, but slightly short of the foramen.
  - Purpose:
    - to reconfirm that canal is still patent to foramen
    - If cant get to WL then can disturb debris or dentin that is blocking it

#### Access

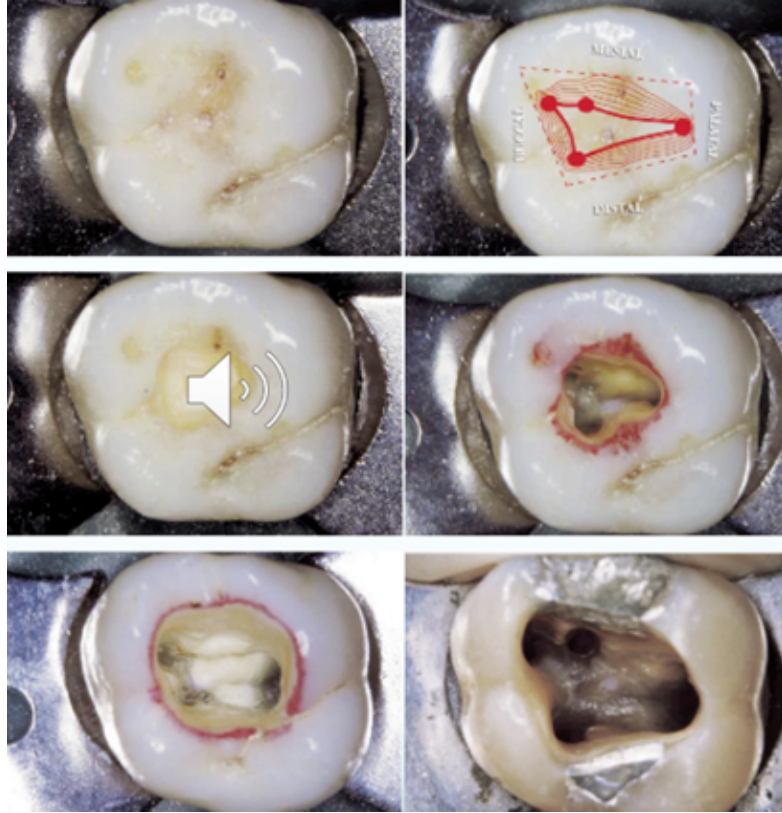


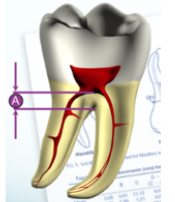
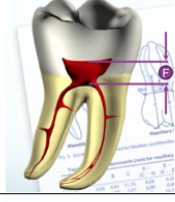
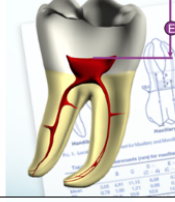
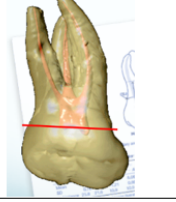


- Max Premolar:
  - central 1/3<sup>rd</sup>, ovoid long BL
  - extend 2/3 up B cusp incline
  - L extension is 1/2 way up L cusp incline
  - 2 pulp horns: B (usu larger + taller) and L
  - Pulp at CEJ: L larger + wider BL and kidney shaped (bc of mesial concavity)
  - Pulp at midroot: round + rapidly tapers usu ending in extremely narrow, curved root canals
  - 1st: expect 2 canals (angled xray if can't find)
  - 2nd: normally 1 canal but can be 2 or 3
- Max Incisor:
  - Central 1/3rd
  - Access triangle base at incisal and apex toward cingulum



- 
- Max 2nd Molar
  - Max molar access cavity sequence



Measurement	IMG	Maxillary Molars	Mandibular Molars
Pulpal floor to furcation		A = 3 mm <i>^key measurement that was constant in the majority of molars investigated</i>	
Pulp chamber height		F = 2 mm	F = 1.5 mm
Tip of an unrestored Buccal cusp to pulp chamber roof height		E = 6 mm <i>^sig. + consistent measurement in molars</i>	
Position of Pulp chamber ceiling in relation to the CEJ joint		97%	98%
		<i>^means nearly all molars are coincident regardless of the arch (max or mand)</i>	

○

○

212 clamp:



- Op:
- Endo: reversed

Filling tips:

1. Cotton pellets only bw appts
2. When finish filling the canal: fuji then composite

Place CaOH

1. Place rubber stopper on tip
2. Check extrusion rate outside of mouth
3. Place needle to maximum 3mm from WL
4. Extrude w v light pressure
5. Compact w paper point
6. Clean cavity thoroughly with cotton pellet and bleach

**Appt Record:**

- all radiographs taken intraoperatively in Endo need to be documented in the progress notes (Appointment Record). Example - Under Tx in the appointment record:
  - 4 PA's acquired intraoperatively
  - 1 PA post-op

Pt arrived early/ on time/late for their AM/PM \_\_\_\_ appointment

pt screened covid -ve

Pt demeanor: calm, pleasant

Vitals: BP: HR: RR:

CC:

HPC:

IC obtained, medical and dental Hx updated, IO/EO completed/updated

Tests done+ result:

Dx:

Tx plan:

Completed today:

TA. LA: 1 carp 2% lidocaine 1:100,000 epi via \_\_\_\_\_ then \_\_ carps throughout procedure to maintain anesthesia (\_\_\_ total carps). {Insert any bands or caries removal??] Rubber dam isolation with clamp \_\_.

Canal accessed. Exploratory radiograph taken (est WL: \_\_\_mm to \_\_\_reference point\_\_\_\_). Cleaning and shaping completed using K files and wave gold small, first to coronal 2/3rd, then procedure repeated to WL, measured by apex locator (20mm).

CaOH placed in the canal. Cotton pellet placed over canal and sealed w Fuji 2 LC GI (shade A2) and cured 20s. Occlusion adjusted.

Radiographs taken:

- pre op rad:
- Exploratory rad:
- WL determination rad:
- master GP rad:
- downpack rad:
- backfill rad:
- Final:

Pt dismissed, demeanor:

Next appointment(s):

- pt will return for obturation after the christmas break

Sterilization record: ALL PASS

## Cleaning & Shaping

Pt arrived on time for endo appt re tooth 44. Covid screen neg. Med hx updated. IC obtained. Pt reports that pain associated with 44 has subsided since starting antibiotics prescribed by his physician and he is feeling well today. Discussion regarding risks and benefits of RCT, including explanation of the necessity to clean bacteria out of the canal to allow for healing, as well as the possibility of RCT failure, future fracture of the root, and possible decay under the crown. Pt understood, accepted Tx, and signed RCT IC.

TA. LA: 1 carp 2% lidocaine 1:100,000 epi via mental nerve block, then 1.5 carps throughout procedure to maintain anesthesia (2.5 carps total). Following caries excavation using SS round bur and spoon excavator, a tofflemire matrix was placed, 44 was built up with Fuji 2 LC GI shade A2 and cured 20s. Rubber dam isolation (clamp 2).

Canal accessed. Exploratory radiograph taken (est WL: 17mm to cavosurface margin). Cleaning and shaping completed using K files and wave gold small, first to coronal 2/3rd, then procedure repeated to WL, measured by apex locator (20mm).

CaOH placed in the canal. Cotton pellet placed over canal and sealed w Fuji 2 LC GI (shade A2) and cured 20s. Occlusion adjusted.

Pt instructed to finish course of antibiotics, continue taking analgesics as necessary, and call if any issues arise.

Next appt: pt will return next week for obturation.

Sterilization: all pass  
04002 Sep 27 2020 - endo cassette  
... etc.

## Obturation

Pt arrived on time for endo appt re tooth 44. IC obtained. Med hx updated.

TA. LA: 1 carp 2% lidocaine 1:100,000 epi via mental nerve block, then intrapulpal injections every 10min to maintain anesthesia.

CaOH removed from canal via copious irrigation with NaOCl and endo activator, followed by IRI (5 cycles).

Since occlusion was adjusted prior to dismissing the pt last appt, which may have compromised the reference point, WL was verified via apex locator and new WL radiograph.

WL: 20mm

Gauge: 30  
Vortexed to 35  
MAF: 35

Size 35 cone fit short of the apex, however the canal is patent w 15k file, so vortexed once again, starting from 25 and proceeding through 30 and 35. Final cone fit within 1mm of apex (acceptable).

Cone fit radiograph taken.

Final irrigation protocol: NaOCl, EDTA

Downpack radiograph taken.

44 was restored with cotton pellet and Fuji 2 GI shade A2.

Next appt: post placement

Sterilization: all pass  
04002 Sep 27 2020 - endo cassette  
... etc.

## Post+Core & Final Impression

### Checklist:

- From main dispensary:
  - Endo cassette (green)
  - Operative cassette
  - Regular high and slow speed handpieces
  - Endo burs
  - Operative burs
  - Clamps
  - Rubber dam kit AND endo Rubber dam frame
  - Endo handpiece + cord
  - Syringe
  - Scalpel
  - **Walkie talkie**
  - Hemodent
  - Biosurf
- From my locker + mobile:
  - Endo activator
  - Endo motor
  - Curing light

- Composite gun
- GP cones
- Tofflemire and matrix band
- Retraction cords
- Endo dispensary:
  - PDL injection syringe **DON'T NEED FOR LUDMILA**



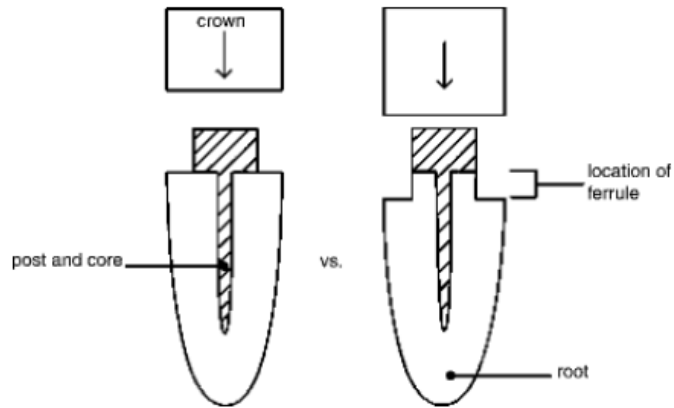
- 
- Vita shade guide (sign out)
- LA
- Bite block (small and medium)
- file eeze
- EDTA
- endo clean stand
- Files
  - K endo files
  - wave files
  - Apical gauging files (NiTi)
  - Vortex files
- paper points (lots)
- Size 2 film
- Green xray rin
- Materials
  - Ca(OH)<sub>2</sub>
  - **NAOCl (Ludmila)**
  - **Composite (ludmila)**
    - **Etch + Bond**
  - Fuji gun
  - Micracle mix / fuji II LC
  - **Cosmecore + small tip (ludmila)**
- Heat tips
- GP cones
- Thermaseal sealer + mixing pad
- Calamus tips
- Apex locator
- Post kit (reamers and posts)
- Topical
- Rubber dam
- Disposable:
  - Hydrogen peroxide rinse
  - Extra tray paper for assistant's side
  - Prophy paste (pink one used in peds) + prophy cup
  - Microbrushes (LOTS)

- From front cupboard:
  - OVS slip (for final impression sent to lab)
- In room already:
  - Short gauge needle tip (27-for infiltration and 30-for intrapulpal)
  - Apex locator
- To get signature (or call while in agp) for:
  - Light and heavy body pvs
  - Stock trays
  - Adhesive

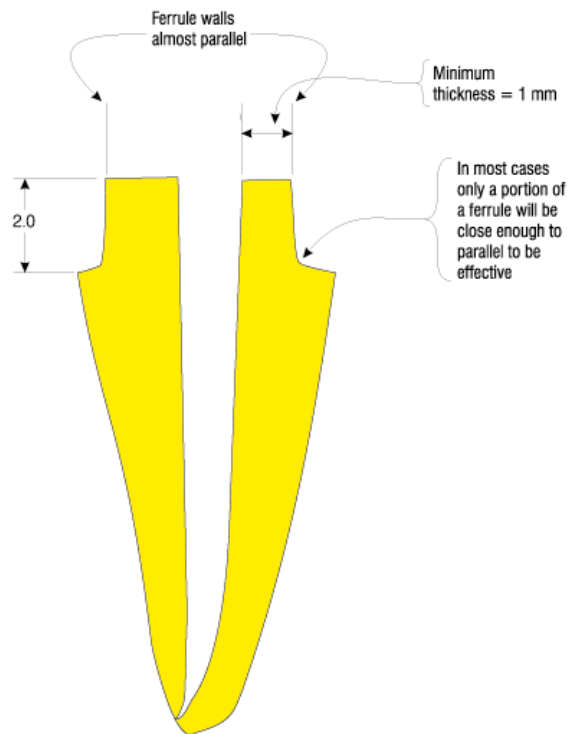
**Steps: BOLD RED IS Q's FOR DORION**

1. Prep tofflemire and matrix band ahead of time
2. Set up calamus heat on assistant side (in case need to add more into canal)
3. Informed consent
  - a. Post and core one and if not there then **fixed prosth consent form**
  - b. basically giving a last lifeline to a near hopeless tooth. Yes you are trying to make the tooth stronger by placing a post and core it will not ever be as strong as a natural virgin tooth. Also compare it to placing a fence post in the ground. You need to do it to support the fence (the crown/resto on top) but you are now digging into the ground and no matter what that ground is now weakened (you are removing tooth structure) and will never be the same again
  - c. risk is that since you are removing tooth structure you are weakening the tooth even more and may cause fractures/cracks in the tooth down the road. But the benefit is that you get to give the tooth a second life albeit a weaker one than it had previously before
  - d. Plus RCT risks above!
4. IF WE DO IMPRESSION THEN NEED TO PAY LAB FEE
  - a. \$\_\_\_
5. LA
6. Rubber dam placement + bite block
7. Remove temp crown with hemostat
8. Remove excess cement with prophy paste (pink one used in peds) + prophy cup
9. High speed to remove temp filling
10. Remove cotton pellet
11. **Remove CaOH**
  - a. Copious irrigation w NaOCL
  - b. Watch wind any file size
  - c. Lots of NaOCl
  - d. Can see when NaOCl coming out clear
  - e. Check patency (10k)
12. Check ferrule:
  - a. Min 1.5mm vertical walls





b.



c.

13. **Clean** canal up to point above the GP cone with **NaOCl**

**14. Post length**

- a. **Minimum= 7mm** (from canal orifice downwards)
  - i. always preserving apical seal (3-5 mm)
  - ii. Apex of post has to be far beyond the crest of the alveolar bone
- b. **Length of post  $\geq$  crown length**
- c. **Length of post = 2/3 of canal length (from orifice to apex)**
  - i. [Post can be 1/2 to 2/3 the length of the canal (from orifice to apex)]

**d. Ludmila measurements:**

- i. WL: 16.5mm
- ii. GP to -6mm
- iii.  $\frac{2}{3}$  of canal length= 11mm
- iv. Might need to place calamus heated GP (liq GP)

**15. Post width**

- a. No more than  $\frac{1}{3}$  root width

16. Place 00 reamer into the canal

- a. If binds a bit then this is the size of the post I want to use
  - b. If doesn't bind go onto the next size reamer until you find one that binds
  - c. **One that binds= the size of post you will use**
17. Put chosen size post into canal, make sure:
- a. It goes to **WL**
  - b. Isn't wiggling around like crazy
  - c. **A little movement** is good bc we need to fit cement in
  - d. If wiggles too much etc then open another post size and use that
  - e. **Post is no more than 1/3 of root width**
18. Disinfect the post w **alcohol** & try-in
19. Pre-insertion PA
20. Clean canal with **EDTA + endo activator for 30secs** (like in final irrigation protocol)
21. Use **paper points** to dry canal
22. Place **etch** with microbrush down canal to WL
23. Rinse etch out with **water**
- a. To ensure all etch is out then wipe off **microbrush (and paper points if want)** that you used to apply etch and then place in canal, if it is blue then etch is still there and place microbrush in water and place down into canal until no more blue
  - b. To ensure that no water is pooling **use paper points and dry microbrush** and keep doing this until the canal is dry
24. Place **bond(?) and air dry**
25. Place **flowable resin or GI(?)** with microbrush into the canal and **cure**
- a. Use this bc it binds more reliably to dentin than cosmecore
26. Place post in and ensure goes to **WL**
- a. If doesn't then go down a post size
27. Place **cosmecore** in canal with **microbrush** and a **bit** on the **post**
- a. Don't put too much bc if you have a blob in the canal and air is below this blob then it will create a hydraulic and then it won't be able to go all the way down
    - i. And if you leave the post there then it will start to slowly come up from the pressure of the air. Solution: Move post up and down to disrupt this air space and then the post can seat all the way down
  - b. Cosmecore:
    - i. Dual cure (light cure then will fully self cure by 5mins)
    - ii. Working time: 90 Seconds
    - iii. Curing time: 4 – 5 Minutes **\*\*DONT PLAY TOO LONG**
28. **Light cure** cosmecore
29. **Cut post** with diamond bur to height needed
- a. Need at least 2mm of material above the post
  - b. Need at least 2mm of post below the orifice
  - c. If you are placing composite then this is a bigger concern (vs if you are placing a crown then you will get the 2mm width from the crown material)
30. Etch and bond the tooth structure for core
31. Flowable
32. Build up core with composite
33. LC composite
34. Refine build up so I have either:
- a. Zirconia
    - i. 0.8mm chamfer margin
    - ii. 1mm reduction for non-f(x)al cusp
    - iii. 1.5mm reduction for f(x)al cusps

- b. Ceramic
  - i. Occlusal reduction: 2.0mm (f(x)al and non-f(x)al cusps)
  - ii. Facial reduction 1.2mm- 1.4mm (from gingiva to incisal tip aka primary to 2ndary plane)
  - iii. Facial marginal reduction: 1.2mm

### 35. Final Impression

- a. Retraction cord for 5-7mins (max 10mins) + hemodent if tissues are bleeding
  - b. Remove cord
    - i. If using 2 cord technique: larger one on top & bottom cord stays while taking impression
  - c. Sulcus open for 10mins
  - d. Light body pvs (orange) → IO
    - i. Make sure **dry** (or get bubbles)
  - e. Heavy body pvs (blue) → Tray
  - f. Retraction cord may come out with impression (that's okay), if it doesn't then take out like normal
  - g. Facebow if needed (Not needed for Ludmila)
36. **Shave M of 47 (need before OMFS consultation)**
37. Impression of lower (ludmila)
- a. After shave
  - b. For implant
  - c. Imprint material
38. Change charting to crown in progress and pt pays lab fee

### Other notes:

#### Post Insertion:

1. Place post
  - a. GP Reduction
    - i. Remove GP with heat tips to desired length - minimum 5 - 6 mm
  - b. Make post space
  - c. Post try in
    - i. Adjust length
  - d. Place Post
  - e. Etch post space and rinse
  - f. Remove excess water (pp) from canal
  - g. Canal: Apply adhesive, remove excess
    - i. Air dry, light cure
  - h. Post: Apply adhesive to post
    - i. LC
  - i. Apply cement
  - j. Seat post
    - i. LC 20s
  - k. Apply comp core in increments
    - i. LC 20s each
  - l. Prep tooth for crown

- Aim for min mechanical preparation of the canal
- Final diameter no more than  $\frac{1}{3}$  of the root width

- Post length to crown length - 1:1
- Passive post design
- **Post Length/Width:**
  - Minimum length of post = 7mm (from canal orifice downwards), always preserving apical seal (3-5 mm)
    - Apex of post has to be far beyond the crest of the alveolar bone
  - Length of post  $\geq$  crown length
  - Length of post = 2/3 of canal length (from orifice to apex)
    - [Post can be 1/2 to 2/3 the length of the canal (from orifice to apex)]
  - Width according to diameter of the canal, avoid over-preparation (conservative approach)

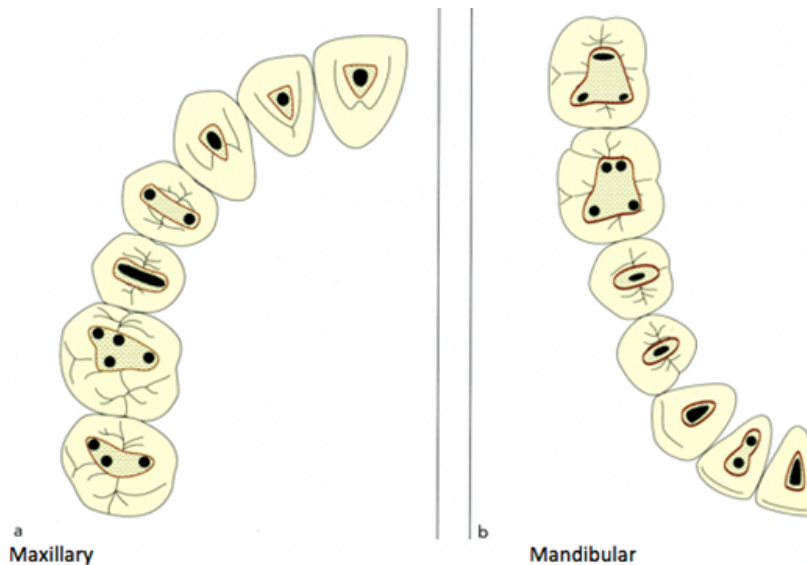
#### Ferrule:

- Definition in endo: refers to the need to have several millimeters of sound tooth structure left above the bone (alveolar bone) to decrease the risk of a tooth fracturing after certain procedures that require a crown, such as a root canal.
- Solid margin
- 1.5mm vertical walls min

- **More Post notes:**

- Post used at school: Macrolock- Look up
- Remove 5mm of GP
  - Heat pluggers or drill
- Finishing drills
- School likes Size 1 post
- **Post Space Preparation & Post Insertion**
- · **MacroLock Quartz Fiber Post (tapered)**
- ○ Size 1 (beige) à 0.8mm at base, 1.35mm at top
- ○ Size 2 (red) à 0.8mm at base, 1.45mm at top
- ○ Size 3 (blue) à 1mm at base, 1.65mm at top
- ○ Size 4 (green) à 11mm at base, 1.85mm at top
- · **Post Space Preparation – 2 methods:**
- ○ Mechanical → use Gates-Glidden or Peeso reamer to remove GP to desired WL for the post
- ○ Thermal à use heated instrument or device
- · **Post Length/Width:**
- ○ Minimum length of post = 7mm (from canal orifice downwards), always preserving apical seal (3-5 mm)
  - § Apex of post has to be far beyond the crest of the alveolar bone
- ○ Length of post  $\geq$  crown length
- ○ Length of post = 2/3 of canal length (from orifice to apex)
  - § [Post can be 1/2 to 2/3 the length of the canal (from orifice to apex)]
- ○ Width according to diameter of the canal, avoid over-preparation (conservative approach)
- · **MacroLock Step-by-Step Procedure:**

- ○ 1) Select appropriate post size **???**
- ○ 2) Access canals like in endo



- Max Premolar:

- · central 1/3<sup>rd</sup>, ovoid long BL
  - · extend 2/3 up B cusp incline
  - · L extension is ½ way up L cusp incline
  - · 2 pulp horns: B (usu larger + taller) and L
  - · Pulp at CEJ: L larger + wider BL and kidney shaped (bc of mesial concavity)
  - · Pulp at midroot: round + rapidly tapers usu ending in extremely narrow, curved root canals
- ○ 3) Use Peeso reamers and Universal Starter Drill to **remove GP** to desired length (colour of drill matches post colour)
  - ○ 4) Create the post space with the **sequential Finishing Drills**, starting with #1
  - ○ 5) Disinfect the post w **alcohol** & try-in
  - ○ 6) Pre-insertion PA
  - ○ 7) Cut the post using DIAMOND bur (from the occlusal) + disinfect post w alcohol (2mm below occlusal)
  - ○ 8) Prime the post, air dry, LC for 20s
  - ○ 9) Etch/rinse the post space and any tooth structure involved in the P&C BU, gently dry the areas, using paper points in post space (leave it moist)
  - ○ 10) Prime the post space and other etched areas w Peak bonding agent, remove excess, air dry, LC for 20s
  - ○ 11) Apply cement to post space
  - ○ 12) Seat the post, and LC for 60s
  - ○ 13) Post-insertion PA
  - ○ 14) Core build-up
  -

- **CosmeCore Information**
- · **Step-by-Step:**
- ○ 1- Apply core composite in increments and LC each increment for 20s
- ○ 2- Finish the core build-up as adequate tooth prep
- ○ 3- Restoration (or crown prep)
- · CosmeCore working time = 90s
- · CosmeCore curing time = 4-5mins
- 
- **General Post Notes**
- · Post space prep best prepared immediately after obturation whenever possible
- · Post insertion ideally should be done ASAP in order to protect GP from contamination and prevent tooth fracture
- · Cervical area of the tooth is the most vulnerable to stress concentration
- · Post length is proportional to retention
- · **Assess amount of remaining tooth structure:**
- ○ ≥ 3 remaining walls with adequate O-G height (≥3mm) and good thickness (≥1mm) OR only 1 axial wall missing → *AMALGAM/COMPOSITE CORE BUILD-UP*
- ○ ≥2 remaining walls with good O-G height (≥2mm) and good thickness (≥1mm) → *PREFABRICATED POST & CORE BUILD-UP*
- ○ 1 remaining wall OR very poor condition but critical tooth (compromised situation) → *CAST POST & CORE*

**Appt Record:**

- all radiographs taken intraoperatively in Endo need to be documented in the progress notes (Appointment Record). Example - Under Tx in the appointment record:
  - 4 PA's acquired intraoperatively
  - 1 PA post-op

Covid screen neg. Pt arrived on time for endo appt today re tooth 44. IC obtained. Med hx updated.

TA. LA: 0.25 carp 2% lido (1:100,000 epi) via buccal infiltration.

Access re-opened and cotton pellet removed. Post drill (size 1) used along with the universal drill to reach 1mm to the GP. There was some difficulty reaching 16 mm (WL minus 4mm of GP downpack) due to unknown circumstances, but the space was deemed acceptable by Dr. \_\_\_\_\_. The size 1 post was etched with 35% phosphoric acid and rinsed, and then bonded w Peak Universal, as was the post space. However, this resulted in a poor fit with the post not seating all the way. The adhesive was removed with the post drill, however the post still would not seat. A size 0 post was tried in, which had a better fit. The post space and post were etched, rinsed and repaired with Scotchbond, which then and light cured 20s. This post fit to the correct

length. Cosmecore core build-up material was placed in the canal, the post seated fully, then light cured 20s. Post trimmed w diamond bur and closed w Cosmecore. Occlusion adjusted to slight hypooocclusion.

Final radiograph showed a slight gap between the post and the GP, approximately 0.3mm. However, this should not present a problem as the canal is otherwise well sealed and has been adequately debrided.

Perio-1 measurements were obtained. Once pt's Perio-1 and other restorative work are complete, will begin process for crown on 44.

Note: Pt reports his consultation at the hospital for 12 exo is scheduled for May 10th.

Pt dismissed in good spirits.

Next appt: Perio-1 case presentation.

Sterilization: all pass  
04002 Sep 27 2020 - endo cassette  
... etc.

## **Sonita May 12 appt**

### **Checklist:**

- From main dispensary:
  - Endo cassette (green)
  - Operative cassette
  - Regular high and slow speed handpieces
  - Endo burs
  - Operative burs
  - Fixed bur kit
  - Rubber dam kit AND endo Rubber dam frame
  - Endo handpiece + cord
  - Syringe
  - Scalpel
  - Walkie talkie
- From my locker + mobile:
  - Endo activator
  - Endo motor
  - Curing light
  - Composite gun
- Endo dispensary:
  - Vita shade guide (sign out)
  - LA

- Bite block (small and medium)
- file eeze
- EDTA
- endo clean stand
- Files
  - K endo files
  - wave files
  - Apical gauging files (NiTi)
  - Vortex files
- paper points
- Size 2 film
- Green xray rin
- Apex locator
- Materials
  - Ca(OH)<sub>2</sub>
  - NaOCl
  - Composite
    - Etch + Bond
  - Fuji gun
  - Miracle mix / fuji II LC
- Heat tips
- Topical
- Rubber dam
- Disposable:
  - Hydrogen peroxide rinse
  - Extra tray paper for assistant's side
  - Prophy paste (pink one used in peds) + prophy cup
- In room already:
  - Apex locator
  - Short gauge needle tip (27-for infiltration and 30-for intrapulpal)
- 

**Steps:**

1. Remove caries from periphery → towards pulp
2. Might not need RCT
3. If have pin point exposure or thin dentin(with no exposure) then do **sandwich technique**:
  - a. Dycal, GI, RC(resin composite)
  - b. RC placed on top of GI to reinforce the GI temp resto
  - c. Used with deep cavities that are close to the pulp
  - d. How:
    - i. Place GI
    - ii. Place GI
    - iii. Wait 45 days, pt pain free when they come back then remove bit of GI layer and palace composite on top



- e. Endo application: sandwich technique makes a stronger temp resto (GI with RC on top)
4. If have exposure assess:
- a. Pulp dark red blood → necrotic → RCT
  - b. Bright red pulp → i think need RCT bc caries in pulp so irrev pulpitis??
  - c.

# Materials

# Template

## Purpose

- Dfd

## Types:

- Dd

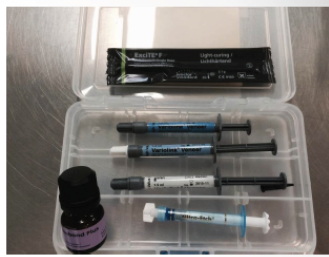
## Application:

- LIkk

## Permanent Cements used in clinic



Resin cement dual cure RelyX Ultimate



Resin cement, variolink esthetic, light cure -- usually used for veneers



RMGI Fuji Cem2 self cure



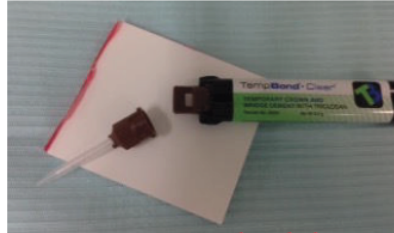
Resin cement self-curing RelyX unicem 2

Here is screenshot of all permanent cements available in clinic

## Temp Cements used in clinic



Temp bond NE



Temp bond clear -- transparent cement used for veneers



Fuji Temp GI base = temporary LT

These are temp cements

## Calcium Hydroxide:

### Purpose

- Antimicrobial activity
- Dissolve necrotic material
- Anti-inflammatory activity

**Types:**

- Dycal

VEHICLE	TYPE	IMPORTANCE	PROPRIETARY BRANDS
Water - soluble	<ul style="list-style-type: none"> <li>• Water</li> <li>• Saline</li> <li>• Dental anesthetics</li> <li>• Methylcellulose or carboxymethylcellulose (suspensions)</li> <li>• Anionic detergent solution</li> </ul>	<ul style="list-style-type: none"> <li>• Ca<sup>2+</sup> and OH<sup>-</sup> ions are rapidly released.</li> <li>• High degree of solubility</li> <li>• Rapidly resorbed by macrophages</li> <li>• Canal may become empty in a short period</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ultracal XS</b> Calxyl, Pulpdent, Tempcanal, Calvital, Reogan, Calasept, Hypocal, Calcicur, DT temporary dressing, Calcipulpe, Hidropulpe, Serocalcium, Calcigel, Acrical, Calnex</li> </ul>
Viscous	<ul style="list-style-type: none"> <li>• Glycerine</li> <li>• Polythyleneglycol</li> <li>• Propylene glycol</li> </ul>	<ul style="list-style-type: none"> <li>• Ions release more slowly for extended periods</li> <li>• Low solubility because of high molecular weight</li> <li>• Prolonged action of paste (2-4 months)</li> </ul>	<ul style="list-style-type: none"> <li>• Calem</li> <li>• Calem + CMCP</li> <li>• Calem + p-chlorophenol</li> </ul>
Oil	<ul style="list-style-type: none"> <li>• Olive and silicone oil</li> <li>• Camphor</li> <li>• Metacresylacetate</li> <li>• Fatty acids</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest solubility and diffusion</li> </ul>	<ul style="list-style-type: none"> <li>• Endoap</li> <li>• Vitapex</li> </ul>

**Application:**

- Lentulo
  - Root canal dried with paper points
  - VERY slow speed handpiece clockwise
  - Lentulo spirals are very fragile
  - Working length control always
- Syringe
  - Applying the appropriate needle on the syringe
  - Put a rubber stopper on the needle
  - Check out of the mouth the extrusion rate of the material of the syringe
  - Insert the needle in the canal no further than 3mm before the working length
  - Apply light pressure on the syringe to extrude the paste at a slow rate
  - Use a paper point/GP cone to “compact” the material in the canal
  - Clean meticulously the access cavity with a cotton pellet moistened with sodium hypochlorite

- Should not be inserted at working length
- Very light pressure
- High risk of extrusion beyond apex
-

# Glass Ionomer (GI):

**Purpose**

- dfd

**Types:**

- Dd

**Application:**

- Lkk

Name	Type of GI Material	Use	Advantages	Conditioner required?	Mixing time	Working time	Setting time
<b>GI triage (wht)</b>	GI Cement	Ant facial surfaces, fully erupted teeth, sealant	Wht vs pink: differ colours Wht: high F releasing GI; sealant or protectant with moist tooth, do not need any etch or bond	Yes	10s	1min 40s	4mins
<b>GI triage (pink)</b>	GI Cement	sealant, visual indicator for partially or newly erupted Ms to ID wear or maintenance areas need to be aware of	Wht vs pink: differ colours	Yes	10s	1min 40s	4mins
<b>Miracle Mix</b>		Long lasting core build ups,		Yes	10s	1.5mins (1min	5mins

		Repairs, block outs				30s)	
<b>GC Fuji 9 GP extra</b>	High-viscosity GI	ART, CI, CII, CV, Core build ups if needed	-Better esthetics than miracle mix -faster setting time -6x more F release than other fuji 9	Yes	10s	1min 15s	2.5mins
<b>GC Fuji 2 LC (LC=light cure)</b>	Light cured GI	Abfractions, Base, CV, final resto	-smoother finish than other GI	Yes	10s	3mins 15s	light cure (20s)
<b>GC FujiCem 2</b>	Resin modified resin GI luting cement	Perm cementation of stainless steel crowns and all metal and zirconia and alumina, good for indirect restos	-composition increases bond, flexural, and compressive strengths of cement so successful indirect resto	Can but not required		2mins 15s	4mins 15s
<b>Vitrebond</b>	Light cured resin modified glass ionomer	Liner or base under all restos(zirconia composite zirconia metal etc)	-prolonged working time -short setting time	No	10-15s	min 1min	light cure (30s)



## Endo-Temporary Restos:

- IRM
  - Zinc oxide eugenol
    - Doesn't combine well with resin composite
- GI cements
  - Schulich uses
- Cavit
  - Easiest temp resto on market
  - Con: high risk of infiltration so nto recommended for endo tx
- Composites
- NOT USED
  - Polycarboxylate cements
  - Calcium sulphate
  - Amalgam
  - Zinc phosphate cements
- Factors to consider when choosing a temp resto:

	Cavit	IRM	GI	Composite
Seal ability	GOOD	GOOD	GOOD	GOOD
Resistance	POOR	MEDIUM	MEDIUM / GOOD	EXCELLENT
Longevity	10 DAYS	14 DAYS	30 DAYS	30+ DAYS
Multisurface restoration	NO	NO	MEDIUM	EXCELLENT
Compressive strength	POOR	MEDIUM	MEDIUM	EXCELLENT
Ease of placement	EASY	EASY	MEDIUM	MEDIUM/ HARD
Effect on bonding procedures	NONE	YES	NONE	NONE
Ease of removal	EASY	EASY	MEDIUM	MEDIUM
Tooth discoloration	NONE	MAYBE	YES IF WITH SILVER	NONE
Setting time	SLOW	MEDIUM	FAST	FAST

- Resistance and compressive strength are most imp when trying to choose a good temp resto
- Sandwich technique:
  - Dycal, GI, RC(resin composite)
  - RC placed on top of GI to reinforce the GI temp resto

- Used with deep cavities that are close to the pulp
- How:
  - Place GI
  - Place GI
  - Wait 45 days, pt pain free when they come back then remove bit of GI layer and palace composite on top
- Endo application: sandwich technique makes a stronger temp resto (GI with RC on top)

# Zinc Oxide Eugenol

## Purpose

- Dfd

## Cons

- Doesn't combine well with resin composite

## Types:

- IRM
- 

## Application:

- Lkk