



**Georgia Health
Sciences University**

OPERATIVE CLINIC MANUAL

CLINICAL PROCEDURES, MATERIALS AND METHODS

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Department of Oral Rehabilitation

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Health History

Before you come to clinic:

1. **When you call the patient to remind them of their appointment**, *always* ask if they have had any changes in medical history or new meds or been hospitalized since last visit. Ask them to bring new prescriptions or lab test results to clinic.
2. **Review health history in axiUm** prior to their appointment so that you are familiar with their systemic disease(s) and medication(s). Specifically:
 - a. **Look up diseases** in your Little and Falace textbook. This is your opportunity to put your theoretical knowledge to use in helping your patient.
 - b. **Look up medications** in epocrates or other dental drug reference. Take notes... "I read about it but I don't remember" is unacceptable.
 - c. **Review** your patient's disease in the Key Points chart below. You *must* have these items memorized prior to the appointment.

After seating the patient:

1. **Ask about changes in health history**, including new medications or if they have been hospitalized.
2. Update medical history in **axiUm**. Include updated info on chronic diseases like lab values.
3. Take **blood pressure and pulse** every 6 months; for pts with > 140/90, every appt.

<input type="checkbox"/> 140-59/90-99	Follow-up with Physician within 60 days
<input type="checkbox"/> 160-179/100-109	Follow-up with Physician within 30 days
<input type="checkbox"/> >180 SP or >110 DP	Defer elective dental treatment Follow-up with Physician immediately
<input type="checkbox"/> 180-210/110-120 with S&S	Defer elective dental treatment Refer to Emergency Room
<input type="checkbox"/> >210 SP or > 120	Refer to Emergency Room immediately

3. **Present the patient to attending faculty**, including how the patient's history or medications will affect the dentistry you plan to do today. Be prepared to discuss all aspects of the patient's health and medications.

Example: "My patient is a 52 year old male with HTN and DM, both well-controlled with meds, who presents for restoration of #5-DO with a stable BP, a HgbA1c of 7.2 taken 10 days ago, and who has medicated and eaten breakfast. His BP today is 135/88." More information may then be requested by the attending dentist (i.e. labs, etc)

4. **Have patient sign electronic pad if changes made.**

If you are not able to answer questions on all of the above, you will receive a grade of 10 for Preparedness.

5. Have faculty approve health history before patient dismissed.

Key Points for Specific Disease:

Disease	Key decision points	Alterations in Treatment
<p>Adrenal Insufficiency secondary to long term corticosteroid use</p>	<ul style="list-style-type: none"> • Dose and frequency? • Has the dose changed in the past 2 weeks? 	<ul style="list-style-type: none"> • Pts on 2 weeks or less of < 5mg Cortisol or 7.5 Predisone will need a loading dose (double dose) of their usual med before dental tx. • Otherwise no need to alter treatment
<p>Angina Cardiac Bypass Surgery</p>	<ul style="list-style-type: none"> • Is angina stable? ie. Don't need NTG, no pain in last month or if so, were treated by MD • Taking non-selective beta blocker? Ex: propranolol (Inderal, InnoPran), nadolol (Corgard), timolol maleate (Blocadren), penbutolol sulfate (Levatol), sotalol hydrochloride (Betapace), and pindolol (Visken) • Date of CABG or stent placement? 	<ul style="list-style-type: none"> • If unstable, NO GO until stabilized. Refer to MD. • DO NOT USE EPINEPHRINE! • < 2 weeks, NO GO without written MD consult, probably will want to premedicate with antibiotics • > 2 weeks, no modification in dental treatment
<p>Anticoagulation Therapy</p>	<ul style="list-style-type: none"> • What medication is the patient taking? • When was the last INR test? • What was the result? <i>Pt must know the INR number- "my doctor said it was OK" is not good enough.</i> 	<ul style="list-style-type: none"> • If on Coumadin, avoid block anesthesia • INR should be within 1-2 weeks, 2 days for surgical procedure • INR of < 3.5 is generally considered OK for routine operative dentistry. • If treatment caused any bleeding- call pt that night- bleeding will stop initially because of platelet function, then they may bleed profusely later since clotting cascade affected.
<p>Artificial Heart Valve</p> <p>Also see "Premedication" section of manual</p>	<ul style="list-style-type: none"> • Has it been at least 9 days since last round of antibiotic premedication? • Are you doing a procedure that requires premedication? • Did pt take the correct med as prescribed? • Patient may be on anticoagulants 	<ul style="list-style-type: none"> • If < 9 days, select another antibiotic med • Anything that causes bleeding requires premed • See "Premedication" section of manual • See "Anticoagulation Therapy" above

<p>Asthma</p>	<ul style="list-style-type: none"> • Determine level of severity. • Been hospitalized in the past week? If so, are they now stable (controlled with medications?) • What precipitates the patient's attacks? • Did patient bring inhaler today? 	<ul style="list-style-type: none"> • Mild- Wheezing 2 days per week • Mod- Severe- daily wheezing or use of agonist medications. • If not stable, NO GO until stabilized. Consult MD • Minimize triggers, ie if dust, use water spray when cutting. • NO GO until they have it with them.
<p>Bisphosphonates</p>	<ul style="list-style-type: none"> • Taken oral meds > 3 years or any IV meds? 	<ul style="list-style-type: none"> • Yes- Minimize trauma to bone with prep and retraction cord. • No- no alterations in operative treatment; consider aggressive management of potential non-vital pulps (ie, endo instead of pulp cap)
<p>Bleeding disorders</p>	<ul style="list-style-type: none"> • Has there been an evaluation by the Oral Medicine clinic? 	<ul style="list-style-type: none"> • NO GO until evaluated.
<p>Breathing problems COPD</p>	<ul style="list-style-type: none"> • Does pt position affect breathing? • Does patient usually use oxygen? 	<ul style="list-style-type: none"> • Sit pt as upright as they are comfortable Ask patient if the rubber dam helps or bothers them • Plan to continue use during tx (not near open flames!)
<p>Cancer See also "Radiation for Head and Neck Cancer"</p>	<p>Has the patient undergone treatment for cancer (other than head and neck) involving radiation or chemotherapy in the past 2 years?</p>	<p>Consult with Oral Medicine prior to treatment</p>
<p>Diabetes</p>	<ul style="list-style-type: none"> • Did patient take medication and eat a meal within the past 2 hours? Are they taking a long-acting insulin? • How often do you check blood sugar? What was the last reading? • When was the last HgbA1c, and what was the number? 	<ul style="list-style-type: none"> • If no medication, have them take it. If they have not eaten, have them eat something before starting (ie, granola bar), especially if they are on a long-acting insulin. • Should be within last few days to verify control. NO GO if blood sugar > 400. Refer to MD. • Should be within last month. Results: <div style="text-align: center;"> <p><6-----6-10-----> 10</p> <p>Very good Fair Not controlled</p> </div>

<p>Endocarditis</p> <p>See also "Premedication" section of Operative Manual</p>	<ul style="list-style-type: none"> • Has it been at least 9 days since last antibiotic taken? • Did pt take antibiotic as prescribed if planning a procedure that will cause bleeding? • Is patient on anticoagulants ? 	<ul style="list-style-type: none"> • If not, prescribe a different medication. • See "Premedication" Section for specific guidance • See "Anticoagulants" above
<p>Epilepsy or Seizure Disorder</p>	<ul style="list-style-type: none"> • Is patient managed to a stable point? 	<ul style="list-style-type: none"> • If > 2 seizures in the past month, consult with physician. NO GO until pt stable.
<p>Hemodialysis</p>	<ul style="list-style-type: none"> • Which arm has the shunt in it? • What days does the patient go for dialysis? • Has it been at least 4 hours since completion of dialysis? • Are you going to prescribe any meds 	<ul style="list-style-type: none"> • Don't take BP on arm with shunt! Monitor BP throughout procedure. • Treat them on the opposite day when possible • Pt will be anti-coagulated with short acting med. • Check drug reference for nephrotoxicity- prescribe with care
<p>Hepatitis Liver Disease</p>	<ul style="list-style-type: none"> • Do they have problems with bleeding? 	<ul style="list-style-type: none"> • Remember that there is reduced clotting factor, especially if a surgical procedure is planned.
<p>HIV/ AIDS</p>	<ul style="list-style-type: none"> • What is their current CD4 T-cell count? 	<ul style="list-style-type: none"> • If count < 200, then should have additional lab values within the past 2 weeks: If neutrophils < 500- treat aggressively for infection If platelets <50,000- plan on increased bleeding
<p>Joint Replacement</p> <p>See also "Premedication" section of Operative Manual</p>	<ul style="list-style-type: none"> • When was the joint replaced? • Has there been any infection in the joint since replacement? • Is pt immunocompromised? 	<ul style="list-style-type: none"> • If > 2 yrs post op, no modifications unless pt is immunocompromised or there is a history of infection in the joint. • Current reference is from ADA 2003- expect new ones soon. See Premedication Section for specifics.
<p>Myocardial Infarction</p>	<ul style="list-style-type: none"> • When was the MI? • Does pt have angina, a CABG or stent placed, or taking a non-selective beta blocker med? 	<ul style="list-style-type: none"> • No elective treatment for 6 months • See also "Angina" above for more recommendations

Pacemaker	<ul style="list-style-type: none"> • Does patient have an implanted cardioverter –defibrillator or ICD? 	<ul style="list-style-type: none"> • Battery operated curing lights and some ultrasonic scalers, ultrasonic cleaning systems interfere with pacemaker. Choose a plug-in light system; piezo scaler <p>Read article: Roedig JJ “Interference ...” JADA 141(5) 521-525, May 2010 for details</p>
Pregnancy	<ul style="list-style-type: none"> • What is the pregnancy status and due date? 	<ul style="list-style-type: none"> • Make sure pt is getting appropriate prenatal checks. Refer if not currently getting care- defer elective procedures until consult returned. • Use radiation cautiously • Plan treatment during second trimester unless emergency.
Radiation Treatment for Head and Neck Cancer	<ul style="list-style-type: none"> • Did radiation treatment field include bone of the lower face? • If so, was the dose > 5,000 cGy? 	<ul style="list-style-type: none"> • If not, no change in treatment plans. • If yes, treatment plan for expected trismus (stretching exercises), xerostomia (lubrication and other OTC meds), mucositis and high caries rate (see section on High Caries Rate-treat aggressively with fluorides, xylitol) <p>If > 5,000 cGy, expect complications to any surgery. Consider OMFS referral.</p>
Renal Disease (End Stage)	<ul style="list-style-type: none"> • Has there been an evaluation by the Oral Medicine clinic? 	<ul style="list-style-type: none"> • NO GO until evaluated.
Stroke	<p>Cardiovascular Accident (CVA) or Transient Ischemic Attack (TIA)</p> <ul style="list-style-type: none"> • What type of stroke did the patient have? 	<ul style="list-style-type: none"> • Thrombotic- (Pt usually on anticoag meds) See section on “Anticoagulated Therapy” • Hemorrhagic- (Pt usually on antihypertensive meds only) See section on “Hypertension”
Thyroid Disease	<ul style="list-style-type: none"> • Is patient well controlled? 	<ul style="list-style-type: none"> • Has patient been on med for >3 months without a dose change? If yes, then no alteration to treatment. <p>If not well-controlled, or if suspect over-treatment or hyperthyroid pt, avoid epinephrine or other pressor amines in local anesthesia.</p>
Transplant of Solid Organ	<ul style="list-style-type: none"> • When was transplant? • Is patient in a stable graft period? • Is the patient in chronic rejection period? 	<ul style="list-style-type: none"> • No elective treatment for first 6 months • Confirm with consult to MD. If so, no alterations in treatment. • Emergency treatment only.

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Premedication Recommendations

Summary of AHA Recommendations to Prevent Infective Endocarditis During Dental Care

<p>Cardiac Conditions for Which Prophylaxis With Dental Procedure Is Reasonable</p> <ul style="list-style-type: none"> • Prosthetic cardiac valve or material used for cardiac valve repair • Previous infective endocarditis (IE) • Congenital heart disease (CHD) <ul style="list-style-type: none"> – Unrepaired cyanotic CHD, including palliative shunts and conduits – Completely repaired CHD defects with prosthetic material or device for first 6 months after Procedure – Repaired CHD with residual defects at the site or adjacent site of prosthetic patch / device (which inhibit endothelialization) • Cardiac transplantation recipients who develop cardiac valvulopathy 	<p>Dental Procedures for Which IE Prophylaxis Is Reasonable for at Risk Patients</p> <p>All dental procedures that involve “manipulation of gingival tissue or periapical region (root end) of teeth or perforation of the oral mucosa.”</p> <p>Dental Procedures for Which IE Prophylaxis Is NOT Recommended</p> <p>routine anesthetic injection through noninfected tissue placement of removable appliances placement of orthodontic brackets bleeding from trauma to lips / mucosa taking dental radiographs adjustment of orthodontic appliances shedding of deciduous teeth</p>
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Regimens for Dental Procedures (Single Dose 30 to 60 min before procedure)			
Situation	Agent	Adults	Children
Oral	Amoxicillin	2 g	50 mg/kg
Unable to take oral medication	Ampicillin	2 g IM or IV	50 mg/kg IM or IV
	OR Cefazolin or ceftriaxone	1 g IM or IV	50 mg/kg IM or IV
Allergic to penicillins or ampicillin–oral	Cephalexin*†	2 g	50 mg/kg
	OR Clindamycin	600 mg	20 mg/kg
	OR Azithromycin or clarithromycin	500 mg	15 mg/kg
Allergic to penicillins or ampicillin and unable to take oral medication	Cefazolin or ceftriaxone†	1 g IM or IV	50 mg/kg IM or IV
	OR clindamycin	600 mg IM or IV	20 mg/kg IM or IV

* Or other first- or second-generation oral cephalosporin in equivalent adult or pediatric dosage.

† Cephalosporins should not be used in an individual with a history of immediate-type hypersensitivity to penicillin (i.e., anaphylaxis, angioedema of the airway).

Reference: <http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.106.183095>

Prepared by AAOM Web Writing Group

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TOTAL JOINT RECOMMENDATIONS

INCIDENCE STRATIFICATION OF BACTEREMIC DENTAL PROCEDURES.*	
INCIDENCE	DENTAL PROCEDURE
Higher incidence [†]	Dental extractions Periodontal procedures, including surgery, subgingival placement of antibiotic fibers/strips, scaling and root planing, probing, recall maintenance Dental implant placement and replantation of avulsed teeth Endodontic (root canal) instrumentation or surgery only beyond the apex Initial placement of orthodontic bands but not brackets Intraligamentary and intraosseous local anesthetic injections Prophylactic cleaning of teeth or implants where bleeding is anticipated
Lower incidence ^{‡§}	Restorative dentistry [¶] (operative and prosthodontic) with/without retraction cord Local anesthetic injections (nonintraaligamentary and nonintraosseous) Intra canal endodontic treatment; post placement and buildup Placement of rubber dam Postoperative suture removal Placement of removable prosthodontic/orthodontic appliances Taking of oral impressions Fluoride treatments Taking of oral radiographs Orthodontic appliance adjustment
* Adapted with permission of the publisher from Dajani AS, Taubert KA, Wilson W, et al. ²³ † Prophylaxis should be considered for patients with total joint replacement who meet the criteria in Table 1. No other patients with orthopedic implants should be considered for antibiotic prophylaxis prior to dental treatment/procedures. ‡ Prophylaxis not indicated. § Clinical judgment may indicate antibiotic use in selected circumstances that may create significant bleeding. ¶ Includes restoration of carious (decayed) or missing teeth.	

PATIENTS AT POTENTIAL INCREASED RISK OF EXPERIENCING HEMATOGENOUS TOTAL JOINT INFECTION.*	
PATIENT TYPE	CONDITION PLACING PATIENT AT RISK
All patients during first two years following joint replacement	N/A [†]
Immunocompromised/immunosuppressed patients	Inflammatory arthropathies such as rheumatoid arthritis, systemic lupus erythematosus Drug- or radiation-induced immunosuppression
Patients with comorbidities [‡]	Previous prosthetic joint infections Malnourishment Hemophilia HIV infection Insulin-dependent (type 1) diabetes Malignancy
* Based on Ching and colleagues, ¹² Brause, ¹⁶ Murray and colleagues, ¹⁷ Poss and colleagues, ¹⁸ Jacobson and colleagues, ¹⁹ Johnson and Bannister, ²⁰ Jacobson and colleagues ²¹ and Berbari and colleagues. ²² † N/A: Not applicable. ‡ Conditions shown for patients in this category are examples only; there may be additional conditions that place such patients at risk of experiencing hematogenous total joint infection.	

SUGGESTED ANTIBIOTIC PROPHYLAXIS REGIMENS.*

PATIENT TYPE	SUGGESTED DRUG	REGIMEN
Patients not allergic to penicillin	Cephalexin, cephadrine or amoxicillin	2 grams orally 1 hour prior to dental procedure
Patients not allergic to penicillin and unable to take oral medications	Cefazolin or ampicillin	Cefazolin 1 g or ampicillin 2 g intramuscularly or intravenously 1 hour prior to the dental procedure
Patients allergic to penicillin	Clindamycin	600 milligrams orally 1 hour prior to the dental procedure
Patients allergic to penicillin and unable to take oral medications	Clindamycin	600 mg intravenously 1 hour prior to the dental procedure*
* No second doses are recommended for any of these dosing regimens.		

Caries Risk Assessment

Before you come to clinic:

1. Read notes from Operative Lecture titled “Caries Risk Assessment”

Go to the H drive and pull up the Caries Risk Assessment form:

This is the left hand part of the form, where you determine the patient’s risk. Use this form as an informational tool for you to discuss, in a non-threatening way, the factors that increase your patient’s risk of caries. Ask the questions in brown and jot down answers before you glove up to do the exam. Then do your exam, keeping the questions in blue in mind, and answer them after the exam is complete.

Questions to ask patient Questions in brown- ask before the exam Questions in blue- answered from the clinical exam		Caries Risk	Low 0	Moderate 1	High 10	Pt Risk
Contributing Conditions						
I.	“Do you drink tap water or bottled? How many times a day do you brush your teeth? Do you use a fluoride mouthwash or rinse? When was the last time you had a fluoride treatment at the dentist? “ 3-4 exposures is YES=low risk, 1-2 is NO=1 point.	Fluoride Exposure (through drinking water, toothpaste, supplements, professional application)	YES	NO		
II.	“Let’s talk about sweet things... do you drink juice, sweet tea, soda? How often? (then tease out other sources of possible sugar exposures- how many, how often, how long) Any liquid meds with sugar? “ In order of damage: sticky sweets >slow dissolving (hard candy>liquids> solids >2-3 between meals= HIGH (10)	Sugary or Starchy Foods or Sweetened Drinks (juices, carbonated or non-carbonated soft drinks, energy drinks, sweet tea, coffee with sugar or flavored creamers, medicinal syrups)	Primarily at mealtimes		Frequent or prolonged between meal exposures/day	
III.	Skip	Caries Experience of Mother or Caregiver and/or siblings (for patients ages 6-14) Not pertinent to Junior Clinic	No new carious lesions in last 24 months	Carious lesions in last 7 to 23 months	New carious lesions in last 6 months	
IV.	“In the past two years, have you had a regular dentist?” “When was your last dental visit?”	Dental Provider (Is an established patient of record and receiving regular care in a dental office)	Yes	No		
General Health Conditions						
I.	Does this patient have any mental or physical impairment that would affect their ability to care for their teeth or comply with your instructions? Ex: Arthritis, Parkinson’s, dementia. Anything causing xerostomia? Ex: renal disease, diabetes, AIDS, bone marrow transplant	Special Health Needs	No	Yes (over age 14)	Yes (ages 6-14)	
II.	Has the patient received head and neck radiation? If more than 25 Grays, probably have lost salivary tissue. Chemotherapy for any neoplasm can affect saliva.	Chemo/Radiation Therapy(circle which) Date:	No		Yes	
III.	“Have you ever been treated for an eating disorder? “	Eating Disorders	No	Yes		
IV.	“Do you dip or chew? How often? “	Smokeless Tobacco Use	No	Yes		
V.	Look up all their medications and check, but most for allergies, BP and other cardiac meds, antidepressants, neuroleptic drugs can cause xerostomia	Medications that Reduce Saliva Flow	No	Yes		
VI.	Just ask: “Have you had any issues with drug or alcohol abuse? “ They’ll tell you!	Drug/Alcohol Abuse	No	Yes		
Clinical Conditions						
I.	Look at the radiographs and count the carious lesions, including incipient lesions that you don’t plan to restore. If < 3, wait to do the clinical exam. If >3, go ahead and score it a 10.	Cavitated or Non-Cavitated (incipient) Carious Lesions or Restorations (visually or radiographically evident)	No new carious lesions or restorations in last 36 months	1 or 2 new carious lesions or restorations in last 36 months	3 or more new carious lesions or restorations in last 36 months	
II.	Ask patient if they’ve had any teeth extracted because of	Teeth Missing Due to Caries in past 36 months	No		Yes	

	decay, toothache or abscess.				
III.	Self evident	Visible Plaque	No	Yes	
IV.	Look for areas the patient has not been able to clean	Unusual Tooth Morphology (that compromises oral hygiene)	No	Yes	
V.	Look at radiographs	Interproximal Restorations- 1 or more	No	Yes	
VI.	Self evident	Exposed Root Surfaces Present	No	Yes	
VII.	Look at radiographs Look for areas with irritated gingival, stuck food, or contacts that don't hold floss but aren't 2 mm open.	Restorations with Overhangs and/or Open Margins; Open Contacts with Food Impaction	No	Yes	
VIII	Ask patient about removable appliances- they don't always bring it in. Fixed ortho is obvious.	Removable Partial Denture, or Fixed or Removable Orthodontics	No	Yes	
IX.	A quick screen is to see if the mouth mirror sticks to buccal mucosa.	Severe Dry Mouth (Xerostomia)	No		Yes
<ul style="list-style-type: none"> A score of 0 (zero) indicates patient is at LOW risk for developing new caries A score of 1 to 9 indicates the patient is at MODERATE risk for new caries A score of 10 or more indicates patient is at HIGH risk for new caries A single "high risk" factor is enough to give the patient an overall HIGH <p>Clinical judgment of dentist may be used to raise or lower score</p>			TOTAL		

Procedure:

Once you have determined risk, plan your treatment:

	Low	Moderate	High
Home care	1. Recommend limiting sugar to <3-5 20 min exposures/day 2. ADA app'd toothpaste 3x /day Advise "Spit, Don't rinse" 3. Effective brush and floss technique training	Same as Low Risk, and add: 1. Fluoride at bedtime: <ul style="list-style-type: none"> 0.05% NaF rinse (ACT rinse) -OR- <ul style="list-style-type: none"> Rx for Prevident 5000 Plus "Spit, don't rinse" Xylitol gum or mints 2pieces 3-5 times per day 	Same as Mod Risk, and add: Rx for Chlorhexidine 0.12% x 32 oz- Use ½ oz (15 ml) at bedtime for a week, one week a month for 6 months. Instruct not to eat, drink, or rinse afterwards.
Treatment Planning	No special treatment needed	<ul style="list-style-type: none"> Sealants on all uncoalesced grooves Consider use of GI in restoring 	Same as Mod Risk
Remineralization Therapy	Office fluoride tx probably not helpful	Office fluoride treatments every 6 months	Office fluoride treatments every 3 months
Other planning	No special treatment needed	Evaluate for salivary flow if indicated as a risk above. If low, treat as high risk.	<ul style="list-style-type: none"> If low salivary flow, consider use of Biotene products. May want to consider using fluoride in custom tray

Pitfalls:

- 1. Sounding like a nanny.** Avoid using words like "should" or "ought to" like the plague! Make it clear that it's you and them against the germs, not you snatching the candy out of their hands. Explain how decay works, explain what is effective at stopping it, and let them take it from there.
- 2. Confusing them with too much info.** You may want to stage your instructions so that you add one change at a time. Give them written instructions whenever possible.

What to tell the patient after you are done:

Patients are terrified of being laughed at, shamed, or disappointing you. Remind them that you will be there for them no matter what. Remind them how pleased you are that they have come in seeking *your* help with *their* care.

Prepared by Dr. Jan Mitchell

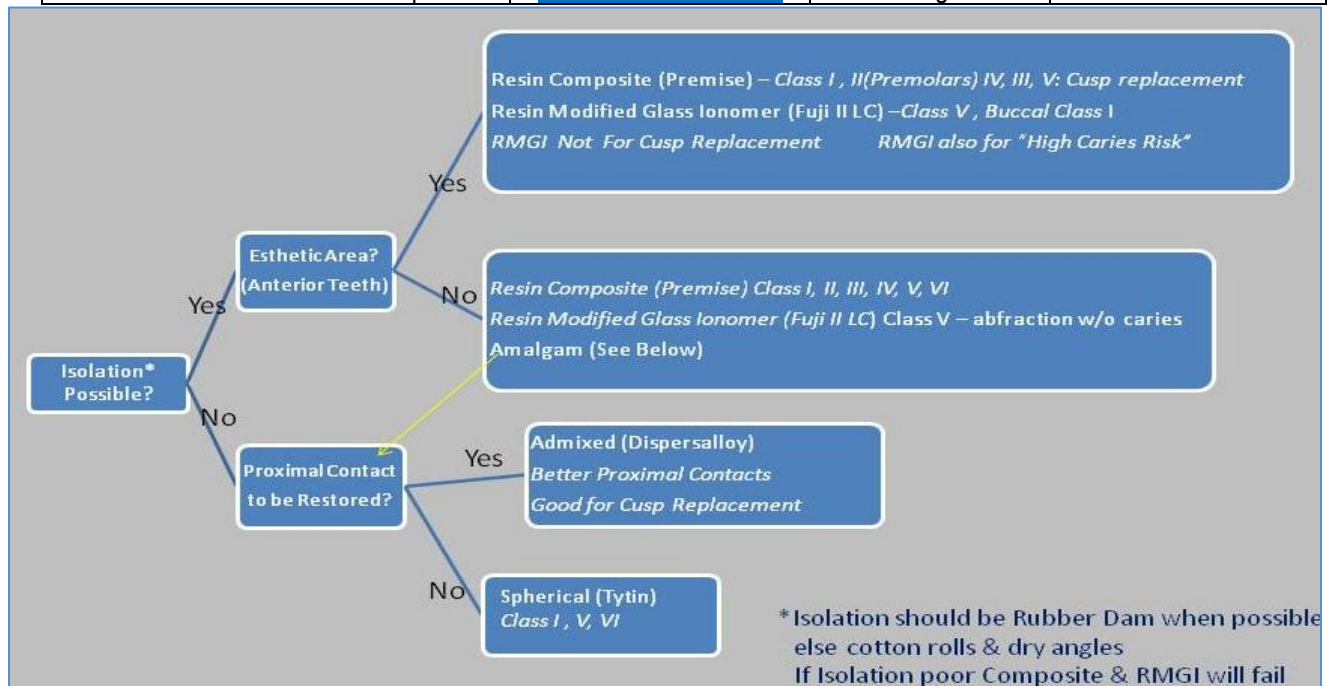
Material Selection for Direct Restorations

Before you come to clinic:

1. Review PDFs from OPER5001 lectures on Class II, III and IV resin composites
2. Review PDFs on Class I & II preparations & restorations
3. Review techniques for field isolation
4. Understand Shade Selection for esthetic restorations
5. Review patient chart: medical history, treatment plan, and radiographs

Get the following items:

Item	Procedure	Associated supplies	From
1. Operative Kit			Window
2. Rubber dam kit			Window
3. Rubber dam	Link to field isolation	RD napkin, wedgits	Operative supplies
4. Shade guide if esthetic material	Link to shade selection		Window
5. Sectional Matrix if Class II composite	Link to sectional matrix	Wedges	Window



Procedure:

1. Examine tooth to be restored –is it easily visible? If yes	Consider Composite or RMGI
2. Can it be isolated adequately for Composite or RMGI? If no	Use amalgam or consider indirect restoration
3. If not esthetic zone and isolation is good- ask patient if they have preference. Pt may prefer esthetic material over amalgam	
4. Is patient Caries Risk Assessment High & isolation good? If yes	Consider RMGI (Fuji II LC)
5. Is lesion non-carious Class V? If Yes	Consider RMGI
6. Is a cusp to be replaced? If Yes	Consider Amalgam or Composite
7. Is lesion small, single surface, non-esthetic? If yes	Consider spherical amalgam (Tytin)

Local Anesthetic

Before you come to clinic:

1. **Review notes** from Oral Surgery on Local Anesthesia
2. **Watch video** on procedure found on youtube: Medical Videos - Malamed_s Local Anesthesia - 10 Mandibular Injections.flv
3. **Read:** Click on '[Archives- Winter 2009](#) "Taking the Pain out of Restorative Dentistry" or reach it through the American Association of Endodontists' website→Dental Professionals→Clinical Newsletter: Colleagues for Excellence. This four page article is one of a brilliant series of short, clinically-focused, evidence based guides to endo and restorative topics aimed at general dentists.

Get the following items:

Item	Notes	Associated supplies	From
1. Needle: <u>Maxillary</u> – short yellow (27 gauge) or blue (30 gauge) <u>Mandibular</u> - long yellow (27 gauge)		Topical anesthetic Gauze	Operative supplies
2. Anesthetic: <u>Maxillary</u> - usually 1 carpule <u>Mandibular</u> - usually 2 carp	Choosing anesthetic: For most patients, use 2% Lidocaine 1,00 000 epi		Operative supplies

Procedure:

1. Get a **start check** from an instructor. You **MUST** have approval for your anesthetic choice and location before giving an injection.
2. **Dry the tissue** with gauze
3. Dip the applicator into the **topical anesthetic**, wipe off the excess against the plastic holder (it tastes gross), place in the area you plan to give anesthetic, removing the gauze. Leave in place 1-2 minutes
4. **Insert needle** according to your class instructions, **Aspirate**, if positive (blood) withdrawn the needle 1-2 mm and recheck. If significant amt of blood aspirated, change carpules.
5. Inject **SLOWLY** (take at least 60 seconds for a mandibular block, 30 sec for an infiltration) inject solution:
 - a. Maxillary- ½ carpule per injection site
 - b. Mandibular- 1 carpule
6. **Wait 4-5 minutes, then confirm anesthesia**
 - a. Maxillary- gently probe gingival next to tooth with explorer.
 "Do you feel anything sharp? Or is it just like a touch?"
 - b. Mandibular- ask patient to tell you when lip signs start.
 Technique: "Tell me when you feel your lip get tingly or fat" then confirm that lip signs go all the way to the midline. Using your finger on the outside of the lip, gently stroke from the anesthetized side going towards the unanesthetized side asking "Tell me when this feels normal". Then reverse the process, asking them to "Tell me when it feels different".
7. If you **don't get anesthesia**, ask an instructor for help. Don't waste any more time!
8. On the mandibular, give a **Long Buccal** injection.
9. Use single handed re-cap
10. If you ever feel the needle drag through tissue, change needles!

Pitfalls:

- 1. Missed block.** Don't beat yourself up too much. About 20% of blocks fail the first time. Don't wait more than 5 minutes before asking for help. Your instructor will be able to troubleshoot and give you advice on the next step to take.
- 2. Hit an artery.** On the maxillary posterior, palatal, or mandibular areas, you will occasionally pierce an artery. Symptoms will usually be a **sharp pain**, followed by **mottled blanching** in that area of the face. Finish giving anesthesia, and immediately put firm pressure on the area of the artery with your finger, pressing the artery against the bone to stop the bleeding until the area can clot. Explain what happened to the patient. Keep pressure on for 3-5 minutes, then proceed as normal. May want to give them an ice pack.
- 3. Hit the nerve.** Reassure the patient. After all, we're aiming for the nerve, and sometimes we find it! We don't have special glasses that let us see the nerve...

What to tell the patient after you are done:

- Be careful not to bite your cheek or tongue while you are numb.
- "How long with this be numb?" is a common question. Usually anesthesia lasts 2-3 hours for lidocaine, 1.5 hours for articaine (Septocaine), and between 8-12 hours for bupivacaine (Marcaine)

What to write in the chart:

Two methods of recording anesthesia: Recording the carpules used is obviously easier to remember. However, nobody but dentists understands what a carpule is, and legally, recording the amount of medication is more accurate, universal, and preferred.

Chart entry is in bold below:

1. By amount of medication: the preferred way to do a chart entry. For each 1.7 ml carpule:

Anes: (Drug name) ___ mg with Epi: ___ mg
(Or Neocobefrin: ___ mg)

0.5% = 9 mg	1:200,000 = 0.009 mg
2% = 34 mg	1:100,000 = 0.017 mg
3% = 51 mg	1:20,000 = 0.09 mg
4% = 68 mg	

Or you can figure it out by doing the math:

% = $\frac{\text{number of grams}}{10}$	Ratio: 1:1000 = 1gm/liter
1.7 ml./carp	= $\frac{1000 \text{ mg}}{1000 \text{ ml}}$
Or, % x 17 = gm / carp	Or, per 100,000 = $\frac{0.017 \text{ gm}}{1.7 \text{ mg/carp}}$
Ex: 2% x 17 = 36 gm / carp	

2. By carpule:

Anes:	Lidocaine 2% (Xylocaine)	With 1:100,000 epi	X ___ carpules Fill in number of carpules used.
	Mepivocaine 3% (Polocaine) (read label on carpule for vaso type)	No vasoconstrictor or 1:20,000 neocobefrin	
	Articaine 4% (Septocaine)	1:100,000 epi	
	Bupivacaine 0.5% (Marcaine)	1:200,000 epi	

Rubber Dam Isolation - Anterior

Before you come to clinic:

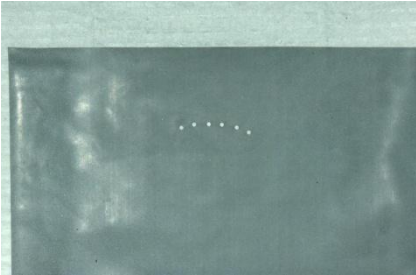
- Read **notes** from Operative Lecture on Rubber Dam application.
- Read **textbook** Sturdevant's Art and Science of Operative Dentistry 5th ed. Pages 463-486

Get the following items:

Item	Picture or Procedure	From
1. Stamped rubber dam sheet 2. Floss 1 packet 3. Wedjets 4. Gauze napkin		Operative supplies Stamp is at end of row

Procedure:

Do not use the words "clamp" or "forcep" in front of the patient. Instead, use "retainer" and "placement instrument"

Placement	
<p>1. Determine shade before isolation. Even a few minutes under the rubber dam will alter the shade.</p> <p>2. Determine isolation area- 1 tooth posterior to tooth being restored if possible, minimum of 6 anterior teeth for easy lingual access.</p> <p>3. Punch holes in dam, recalling that 'holes' on stamp are too far apart. (Proper spacing = 3 mm.) Use the medium hole size. Holes for maxillary central incisors should be 1" from top edge of dam, for mandibular incisors 2" from bottom edge of dam, to prevent the dam covering the patient's nose.</p> <p>4. Get organized: Place punched dam, mirror, and cord instrument on patient napkin for quick access without your turning away from the patient.</p> <p>5. Retainers: Use a retainer only if most distal contact is too loose for use of a Wedjet. Choose retainer to fit most distal tooth with four points of contact on facial and lingual surfaces, ligating retainer before trying in. Usually a 2A retainer fits premolars. If using, while stabilizing retainer with index finger, visually check for points of contact with mirror, gently lift on bow of retainer with cord instrument to check stability of retainer.</p> <p>6. Place the rubber dam:</p> <p>a. Without turning away from the patient, stretch hole for tooth with retainer facio-lingually and slide this hole over retainer. (The winged 2A retainer can usually be used this way if a large hole has been punched in the dam. Alternately, remove the 2A, assemble dam and frame, and stretch the hole for the most posterior tooth over the wings. Apply all three together.)</p>	

b. Stretch septa of dam facio-lingually, **slide holes over incisors**, beginning at the midline. Place Wedjet to secure end of field if no retainer is used. Do not floss yet.

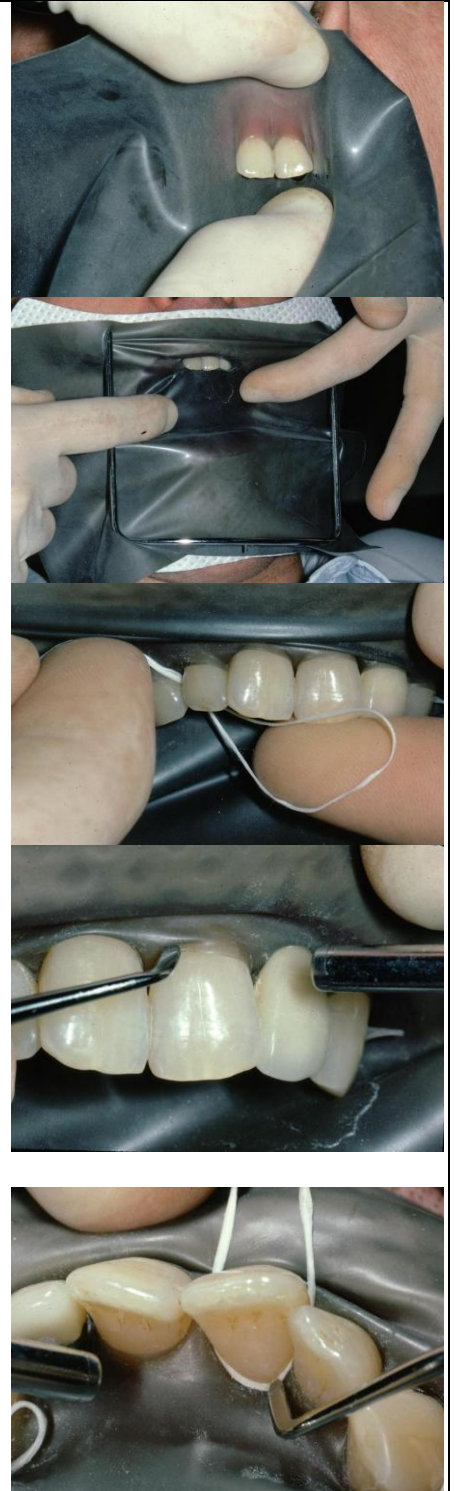
c. Place gauze napkin, rubber dam frame.

d. Beginning with the most anterior contact with rubber septum not already passed, **floss a minimum of twice** for each contact, to pass septa of dam through the proximal contacts.

e. **Invert the edges of each hole** around tooth by simultaneously drying and turning edges under with a sweeping motion of the cord instrument.

If teeth have small or absent cingulum, wrap floss around the lingual surface and invert entire lingual of the tooth at once by positioning edge of hole below height of contour using cord instrument and floss, then air drying prior to removing floss. If absolutely necessary, anterior tooth may be ligated by tying this loop of floss on the facial, but trauma to the proximal gingival attachments is likely.

7. Prewedge any proximal contacts receiving a Class II or Class III preparation.



Removal

1. Without removing retainer or frame, **snip** each of the rubber septa.
2. Remove retainer, frame, and dam simultaneously.



Pitfalls:

1. Selection of **too large a retainer**, which will be unstable and traumatic. Remember that the retainer will engage the tooth at the smaller radius of the CEJ.
2. Can't invert dam because septum is 'caught' in contact, not flossed through.

What to tell the patient after you are done:

1. New restorations will not match for at least 48 hours, until teeth rehydrate.
2. Gums may be a little sore for a few days. Keep it clean, and don't worry if it bleeds a little.

Rubber Dam Isolation - Posterior




Before you come to clinic:




- Read **notes** from Operative Lecture on Rubber Dam application.
- Read Sturdevant's Art and Science of Operative Dentistry 5th ed. Pages 463-486

Get the following items:

Item	Picture or Procedure	From
1. Stamped rubber dam sheet		Operative supplies Stamp is at end of row
2. Floss 1 packet		
3. Wedjets		
4. Gauze napkin		

Procedure:

Placement	
<p>1. Determine shade before isolation. Even a few minutes under the rubber dam will alter the shade.</p>	
<p>2. Determine isolation area- 1 tooth posterior to tooth being restored if possible, include anterior midline.</p>	
<p>3. Punch holes in dam, recalling that 'holes' on stamp are too far apart. (Proper spacing = 3 mm.) Use the largest hole size for molars. Holes for maxillary central incisors should be 1" from top edge of dam, for mandibular incisors 2" from bottom edge of dam, to prevent the dam covering the patient's nose.</p>	
<p>4. Get organized: Place punched dam, mirror, cord instrument on patient napkin for quick access without your turning away from the patient.</p> <p>5. Retainers: Select retainer to fit most distal tooth with four points of contact on facial and lingual surfaces, ligating retainer before trying in. Usually a W8A retainer fits second molars. (If none of the molar retainers in the kit fit, a W3 may be checked out from dispensing.) While stabilizing retainer with index finger, visually check for points of contact with mirror, gently lift on bow of retainer with cord instrument to check stability of retainer.</p>	
<p>6. Place the rubber dam:</p> <p>a. Without turning away from the patient, stretch hole for tooth with retainer facio-lingually and slide this hole over retainer. (If a winged retainer has been selected, remove it, assemble dam and frame, and stretch the hole for the most posterior tooth over the wings. Apply all three together.)</p>	
<p>b. Stretch septa of dam facio-lingually, slide holes over incisors. Place Wedjet to secure anterior end of field. Do not floss yet.</p>	
<p>c. Place gauze napkin, rubber dam frame.</p>	

<p>d. Beginning with the most anterior contact with rubber septum not already passed, floss a minimum of twice for each contact, to pass septa of dam through the proximal contacts.</p>	
<p>e. Invert the edges of each hole around tooth by simultaneously drying and turning edges under with a sweeping motion of the cord instrument. If anterior teeth have small or absent cingulum, wrap floss around the lingual surface and invert entire lingual of the tooth at once by positioning edge of hole below height of contour using cord instrument and floss, then air drying prior to removing floss. If absolutely necessary, anterior tooth may be ligated by tying this loop of floss on the facial, but trauma to the proximal gingival attachments is likely.</p>	
<p>7. Prewedge any proximal contacts receiving a Class II or Class III preparation.</p>	
<p>Removal:</p>	
<p>1. Without removing retainer or frame, snip each of the rubber septa.</p>	
<p>2. Remove retainer, frame, and dam simultaneously.</p>	

Pitfalls:

1. **Selection of too large a retainer**, which will be unstable and traumatic. Remember that the retainer will engage the tooth at the smaller radius of the CEJ.



2. Can't invert dam because septum is 'caught' in contact, not flossed through.



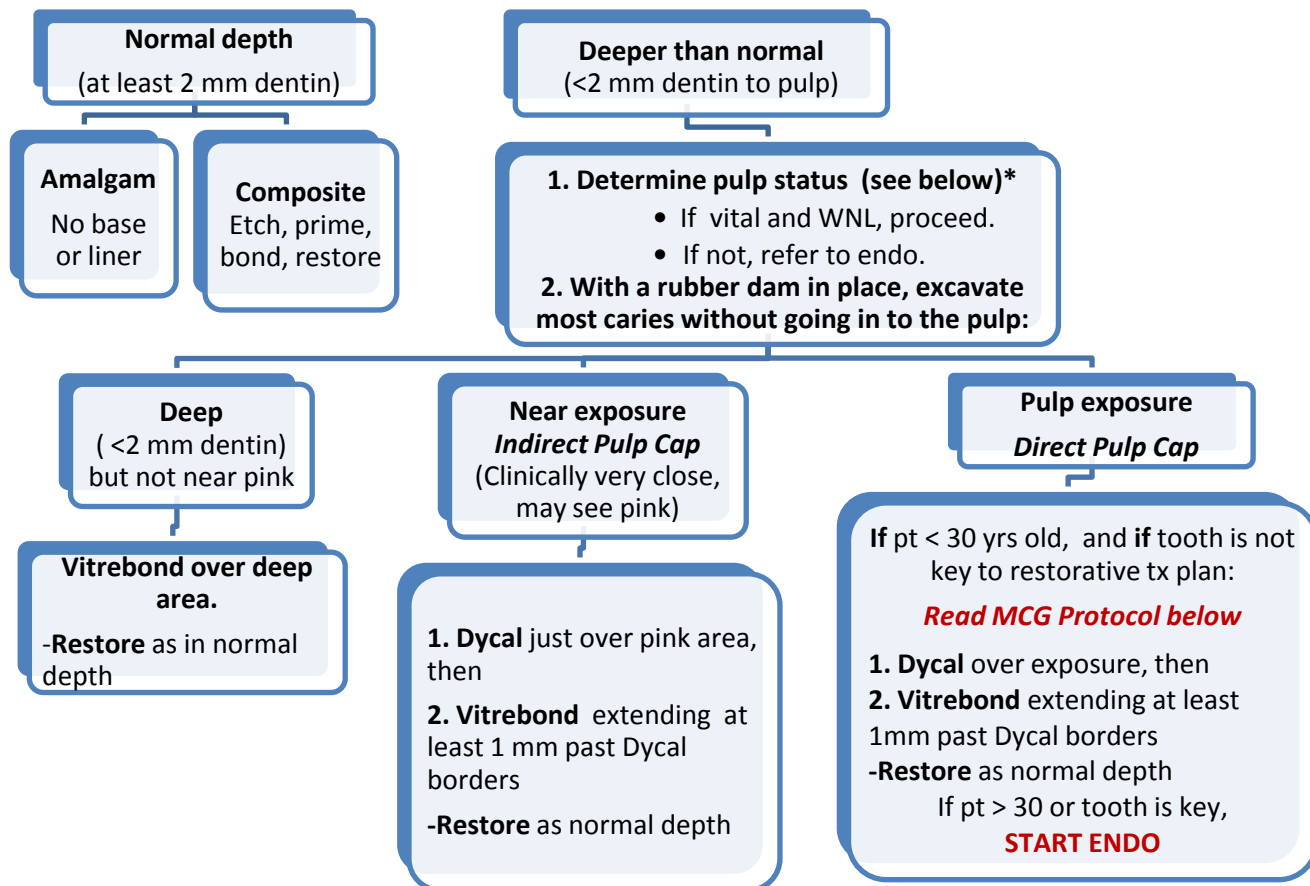
What to tell the patient after you are done:

1. New restorations will not match for at least 48 hours, until teeth rehydrate.
2. Gums may be a little sore for a few days.

Bases and Liners, Pulp Capping (Vital Pulp Therapy)

Before you come to clinic:

1. Read **notes** from Operative Lecture titled “Cavity Bases, Liners, and Sealers”
2. Read *Sturdevant’s Art and Science of Operative Dentistry 5th Ed*, pages 174-181
3. **Look at the radiographs** and estimate depth of carious lesion:





* Determining pulp status:

1. **Question** patient if they have ever had problems with this tooth in the past.
 - a. History of sharp pain that then stopped
 - b. History of sensitivity to hot or cold that lingers
 - c. Is there is a history of pain or several compromised teeth (ie, previous deep or extensive restorations, caries, changes in pulp size on radiograph)?




If any of these, assume that the pulp vitality is compromised. Test with a skeptical mind.
2. **Cold test** the tooth you plan to restore as well as the contra-lateral tooth.

Doing the cold test: Request a can of Endo-Ice from window; get a small plastic cup and a cotton pellet and cotton forceps. Instruct patient to raise their hand when they feel the cold (remove pellet from tooth) and lower hand when cold sensation goes away. Spray Endo-Ice into the cup until you have a few drops, saturate cotton pellet, and place mid-facial on tooth. They should be able to feel cold (although some older pulps do not respond) and the sensation should go away within 30 seconds. Consult with faculty.
3. **Percuss and palpate** the teeth in this quadrant.
4. If you don't have a recent PA **radiograph** of this tooth, get one and evaluate for radiolucency.


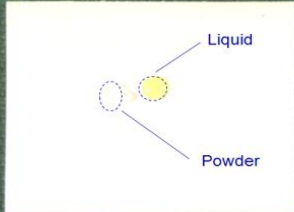
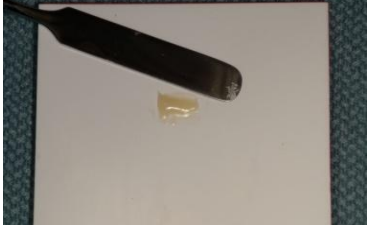


Get the items you've selected:

Item	Picture	Associated supplies	From
Dycal (CaOH) liner		Mixing pad PICH instrument 2% CHX (Consepsis [Ultradent] or Cavity Cleanser [Bisco])	Operative supplies Instrument cassette
Vitrebond (RMGI)		Mixing pad PICH instrument	Operative supplies Instrument cassette

Dycal Procedure:

<p>If rubber dam isolation is not <i>ideal</i> place the matrix band and wedge before placing bases. You don't want to contaminate the area with saliva.</p> <p>1. Mix equal amounts of catalyst and paste to a homogeneous color.</p>	
<p>2. Apply with PICH instrument.</p>	
<p>3. Use only enough to cover the pink area .</p>	

Vitrebond procedure:

<ol style="list-style-type: none">1. Fluff the bottle of powder. Dispense one level scoop of powder using the scoop provided.2. Dispense one drop: holding bottle upright, squeeze out air. Turn bottle over to vertical position and squeeze out one drop (with the bottle not touching the pad) of liquid, and quickly release bottle so that vacuum pulls extra liquid back into bottle.	
<ol style="list-style-type: none">3. Keep powder and liquid apart until mixing. Apply quickly	
<ol style="list-style-type: none">4. Mix all powder at once into the liquid. Mix 10 seconds.	
<ol style="list-style-type: none">5. Apply quickly to slightly damp dentin using the PICH instrument, being careful to stay only on the pulpal floor or wall 2mm away from cavity margins.	
<ol style="list-style-type: none">6. Light cure for 20 seconds.	

Pitfalls:

Dycal can be used alone ONLY under composite or resin-modified glass ionomer. Under amalgam, it MUST have a layer of Vitrebond covering it and extending a mm further. Dycal is not strong enough to withstand condensation forces alone.

What to tell the patient after you are done:

Cold sensitivity is normal after placement of a new restoration. It should go away, but if the pain lasts longer than a few days, or becomes worse, or begins throbbing, they should notify you.

MCG VITAL PULP THERAPY PROTOCOL

Background: Current evidence based practice shows that whenever possible, pulp vitality should be maintained; it is better to leave some caries than risk pulp exposure. Teeth with some decay left- if there is a well-sealed restoration- do as well as those with all decay removed. The caries process will go dormant or even reverse under the restoration. Further, an indirect pulp cap is more predictably successful than a direct pulp cap, but both have a fairly good chance of success.

1. Prior to anesthesia, all teeth with deep caries should be:

- **Pulp tested with cold.** Using Endo-Ice on a cotton pellet, the patient should be able to feel the cold distinctly, and the sensation should dissipate within 30 seconds after removal of the cold stimulus.
- **Asymptomatic**, so a good history should be obtained from the patient.
- Verified that there is no radiographic pathosis

2. Isolate with rubber dam

3. Caries Removal: Remove all unsupported enamel and get desired outline form. Remove decay starting at the margins; revise margins if necessary until they are on sound tooth structure. Once it is confirmed that all decay is removed from the margins and outline form has been obtained, place matrix band if isolation is not perfect. Continue caries removal until in the region of the pulp, removing as much of the soft, wet decay as possible until near the pulp.

THEN STOP!!!

4. Consider use of a cavity disinfectant: 2% CHX (Consepsis [Ultradent] or Cavity Cleanser [Bisco]). Do not use Peridex, sodium hypochlorite, or H₂O₂.

5. Place a layer of resin modified glass ionomer (Vitrebond or Fuji II LC if a thicker base is needed)

6. Restore as planned.

If you do get a pulp exposure, consider patient age (<20 ideal) and overall treatment plan:

1. Saturate a cotton pellet with sterile saline (ideal) or anesthetic solution without vasoconstrictor. Do NOT use Astringedent, Hemodent, or chlorhexidine. You may consider use of sodium hypochlorite (either dilute or full-strength), but the evidence is equivocal.

2. Place with firm pressure for 1 minute and evaluate bleeding. If still bleeding, consider enlarging the exposure and removing some of the superficial inflamed pulp tissue with a sterile round slow speed bur, and reapply pressure with the cotton pellet for 1-2 minutes. If bleeding persists, consider endodontics.

3. If bleeding controlled, place one of the following:

- Dycal- just enough to cover the margins of the exposure
- MTA, which can be placed in more bulk. Cover with a barely damp cotton pellet until set Then cover with a layer of resin modified glass ionomer (Vitrebond or Fuji II LC for a thicker base is needed).

4. Restore with composite, amalgam, porcelain or casting. Do not use RMGI in occlusion.

Prepared by Dr. Jan Mitchell

Matrix Bands and Wedges

Before you come to clinic:

1. **Review** Operative (OPER 5001) Lecture titled: 1) Condensation and Carving Class II 2) Class III restorations 3) Class IV 4) Posterior Tooth Cusp Replacement Using Resin Composite and Esthetics (ESTD 5001) lecture titled: 1) Sectional Matrices Textbook (Sturdevant's Art and Science of Operative Dentistry) p.760-772 tofflemire/mylar strips, p. 773 Automatrix
2. **Watch** video on procedure found on:
http://www.trident.com/v3ring/animation.html?country_code=us
3. **Understand** that for different locations (anterior vs. posterior) and different types of materials (amalgam, composite, Comp Core, II LC) different wedges and matrices are required.




Types of Matrix systems:



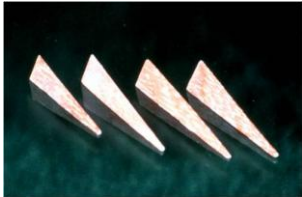
- I. **Sectional Matrix Systems** (Triodont, Traditional Palodent w/ BiTine ring) – can use for Class II, usually composites
- II. **Automatrix System** – can use for Class II, Cusp Replacements, Core Buildups, Any material
- III. **Clear Matrix** (Mylar strips) for Class III, IV
- IV. **Tofflemire** with metal matrix bands (HO bands, MOD bands, Dixieland bands, regular) – can use for Class II, Cusp replacements, Core buildups, Any material

How to Use Specific Systems






- I. **Sectional Matrix Systems - for Class II Composites (mostly 2 surf, MO, DO):**
Can use either of 2 systems (see below)

Get the following items:

Item	Picture or Procedure	Associated supplies	From
1.a. Sectional Matrix System (Triodont system – V3 ring) – 2 kits currently available		Triodont application forceps, wedges, matrix bands	Drs. Sword/B.Brackett
2.a. Metal Matrix band (regular or MOD, for deep boxes)		Part of Triodont Kit	Drs. Sword/B.Brackett
3.a. Wedges (wave)		Part of Triodont Kit	Drs. Sword/B.Brackett

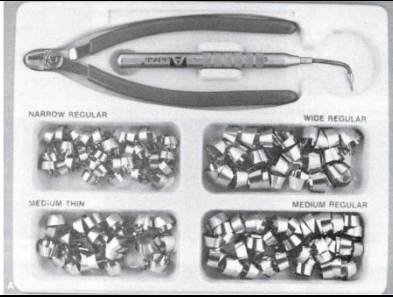

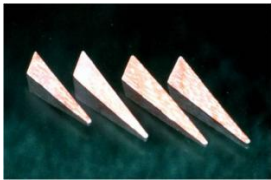
1.b. Palodent Sectional Matrix System (with BiTine Ring) – regular system MANY AVAILABLE		BiTine ring, sectional matrix, wedges	Dispensary
2.b. Palodent sectional matrices			Operative Supplies
3.b. Wedges (can use regular wooden wedges)			Operative Supplies

Procedure:

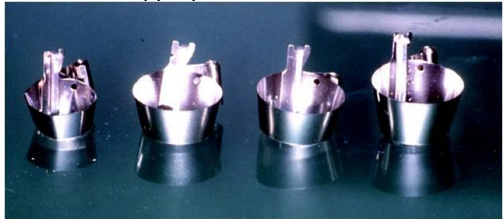




1. Sectional matrix system	Choose appropriate matrix system and place it before restorative material	
2. Step by step – Sectional Matrix System	<ol style="list-style-type: none"> 1. Choose correct sectional matrix, regular, deep MO,DO 2. Place matrix 3. Place wedge 4. Place sectional matrix with forceps 	
		 
4.		

II. Automatrix System - for large restorations, Core buildups in composite, Comp Core or amalgam:

Get the following items:



Item	Picture or Procedure	Associated supplies	From
1. Automatrix System		Tools for placement/removal of Automatrix	Dispensary
2. Specialized Automatrix band			Operative supplies
3. Wedges (wooden are fine)			Operative supplies

Procedure:

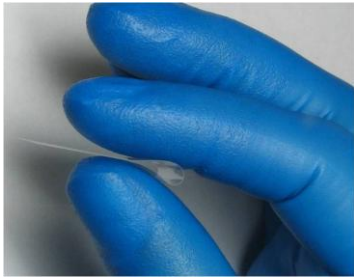
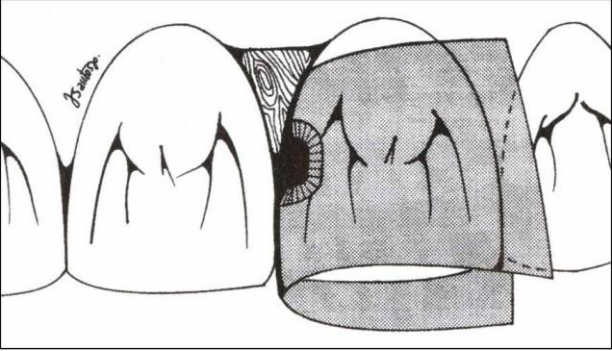
1. Automatrix System:	<p>Choose appropriate auto matrix band:</p> 
2. Step by step – Automatrix System	<ol style="list-style-type: none"> Put matrix on tooth Use Automatrix tool to tighten (turn entire handle clockwise – to the right) Add wedge(s) Burnish metal matrix against adj. tooth Restore tooth Cut Automatrix tab Remove Automatrix with cotton pliers/hemostats
   	

III. Clear Matrix System : For Class III and Class IV restorations

Get the following items:



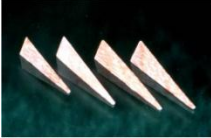
Item	Picture or Procedure	Associated supplies	From
1. Clear Matrix, (Mylar strips)		Clear matrix, wedges	Operative supplies
2. Wedges (wooden)			Operative supplies

Procedure:

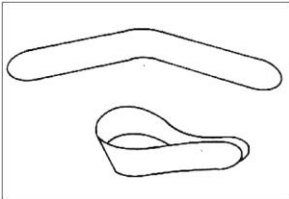

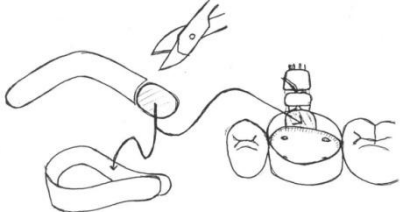
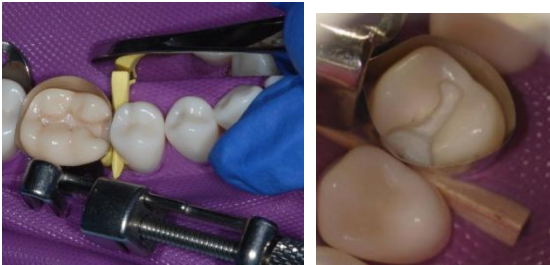
1. Step by step – Clear Matrix System	<ol style="list-style-type: none"> 1. Contour clear matrix band 2. Place clear matrix (with cotton forceps) 3. Place wedge (with cotton forceps)
<p>1. </p> <p>2-3. </p>	

IV. Tofflemire Retainer - for Class II Amalgams (2 surfaces +), Large restorations (B/L), Core buildups:

Get the following items:

Item	Picture or Procedure	Associated supplies	From
1. Tofflemire retainer		Metal matrix band, wedges	Operative cassette
2. Metal Matrix band (regular, MOD, pedo, Dixieland 2 nd picture)			Operative supplies
3. Wedges (wooden)			Operative supplies

Procedure:

1. Prepare tofflemire with correct matrix band:	<p>Choose appropriate matrix band,</p> <ol style="list-style-type: none"> 1. HO band (thin), 2. Dixieland band (contoured Occl/Ging), 3. MOD band (for deep boxes), 4. Regular band 5. Specialize band to fit deep/large MOD
2. Step by step – Tofflemire Matrix System	<ol style="list-style-type: none"> 1. Put metal matrix in tofflemire retainer 2. Place tofflemire/band on tooth 3. Place wedge 4. Burnish metal matrix against adjacent tooth
<p>1. </p> <p>2-3 </p> <p>5. </p>	

Pitfalls:

1. **Not creating a good gingival seal** using the matrix band and wedge placement.
(Always have faculty check)
2. **Not burnishing the matrices** before material placement for a good contact (if the matrix band is not touching the adjacent tooth, a proper contact will not be created)

What to tell the patient after you are finished:

- Do not eat on affected side for 24 hours.
- If subgingival/deep band or polishing, may rinse with warm salt water when home until gingival heals fully.

Prepared by: Rhoda J. Sword, DMD

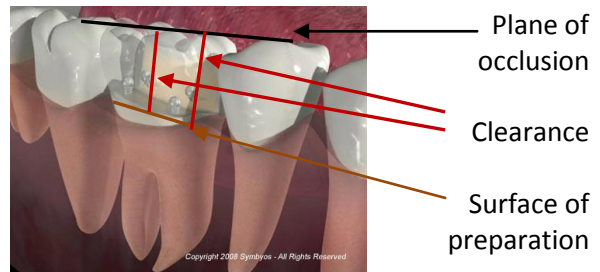
Core Build-Up Restorations – Vital Teeth

Before you come to clinic:

1. **Read notes** from Operative Lecture titled “Core Buildup” and **read textbook** Sturdevant’s Art and Science of Operative Dentistry 5th ed pages 809-842

2. **Understand** that most large restorations should be serviceable as a core build-up, should the need for a crown arise in the future. In molars, amalgam is the preferred core build-up material because of strength, wear resistance and greater ease in restoring proximal contact. Resin composites may be used if preparation and provisionalization for the crown is scheduled within 2-3 weeks. (Light-cured resin composites in shade B1 are more esthetic and wear resistant than CompCore. Do not use CompCore in visible areas or if it is not certain when the crown will be done.) Resin composites should be used whenever removal of caries and unsupported tooth structure leaves too little space for the bulk of an amalgam restoration and whenever adhesion is intended as the primary retention for the core.

3. **Understand** that pins, used with either amalgam or resin composite, are the strongest, most stable form of retention when preparations of compromised teeth extend to the level of the CEJ. Carefully evaluate the tooth or space before you start, and determine the **clearance**- how much space you will have from the level of the preparation to the planned surface of the restoration. Use the adjacent cusp heights, the plane of occlusion, and the opposing occlusion to judge where this will be.



Clearance	Use	Color Coding on Pin Box
2-3 mm	Retentive slots	
3 mm	Minikin (premolars or molars)	Red
4 mm	Minim (molars only)	Silver/Gray

Get the following items:

Item	Picture or Procedure	Associated supplies	From
1. Minim (red) or Minikin (silver) pins, drill			Window
2. Gear reduction handpiece			

Procedure:

1. Preparation: Isolate, remove caries, old restorative material, fragile or unsupported tooth structure, apply needed liners/bases, the same as for any preparation.

2. Evaluate whether the intracoronal retention/resistance form would be present following a crown preparation. Usually, the loss of a cusp indicates the need for a pin or slot.

3. Based on the height of unreduced cusps, sometimes on adjacent teeth, estimate occlusal clearance. If this is 3 mm or less, you cannot use a pin, you must use a slot (amalgam or composite) or adhesion (composite). If this is 4 mm or greater, a pin is usually indicated as more retentive and conservative than a slot.

4. Place retentive item- Both pins and slots are placed entirely in dentin.

a. Slots- Should be retentive, prepared with a 34 or 330 bur, 1 mm in depth, and parallel to the DEJ.

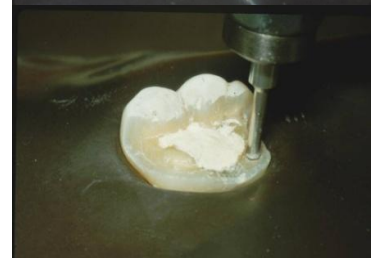
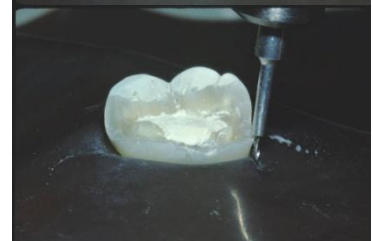
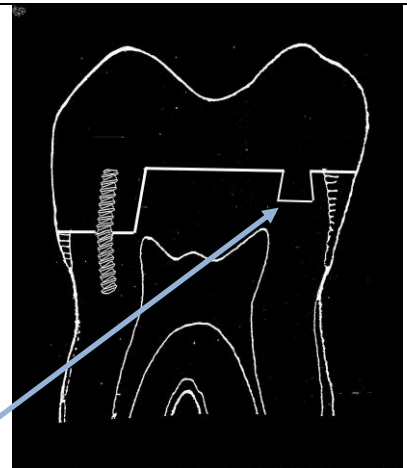
b. Pins- the **prepare a flat area** approximately perpendicular to the long axis of the tooth. Lightly **indent the dentin** with a slow-running ½ round bur, 1 mm inside the DEJ at the proposed site(s) of any pins.

Place the gear reduction, and ascertain the pin drill is running clockwise as viewed from the back of the handpiece. To align the drill, place it in the sulcus adjacent to the tooth, **parallel to the external root surface**.

*Pins are **not** placed parallel to the long axis of the tooth.*

Transfer this angle to the indentation; **prepare the pin hole in one pass**, into the tooth until the self-limiting shoulder contacts the dentin, using about 2/3 of the maximum handpiece speed.

Remove the drill, place the **pin mandrel** into the handpiece. Lightly touch the tip of the pin to the hole to index it, angled parallel to the axis of the hole, immediately apply maximum air pressure/speed to the handpiece. Pin will thread in and shear off in approximately a second.

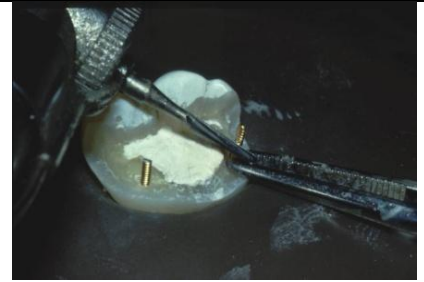


The pin will be splayed toward the outside of the tooth, so you must **bend the pin** into the preparation to parallel the external surface of the eventual restoration and crown preparation. Use a finger or hand instrument.

Minim pins are nearly 3 mm long on the coronal end and you may need to **shorten the pin** if they will extend to within 2 mm of the opposing tooth, and are at risk of being exposed during a subsequent crown preparation. Grasp the pin with a cotton plier adjacent to the dentin, cut off 1-1.5 mm with a high speed carbide or diamond using water spray.

Ascertain that the pin is not 'blocked out' by nearby dentin or base material, such that the entire coronal end of the pin will grasp the restorative material on all sides.

5. Restore using usual methods, being certain that restorative material is adapted into/around slots or pins. If crown preparation date is uncertain, do not use CompCore. Be certain to close proximal contacts to prevent gingival inflammation from food trapping, meaning that you will need to use separating rings from the segmental matrix system with a circumferential matrix like Tofflemire or AutoMatrix for a resin composite core. If mechanical retention and sufficient space for restoration bulk are available, and the crown preparation will not be done until a subsequent appointment, amalgam cores are preferred.



Pitfalls:

1. Placement of pins or slots too near enamel, weakening it.
2. Placement of pins parallel to the long axis of the tooth, thereby risking periodontal perforation and loss of the tooth.

Prepared by Dr. William Brackett


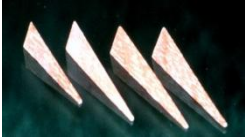


Amalgam Restorations

Before you come to clinic:




1. **Read notes** from Operative Lecture titled “Amalgam Restoration Class II” and **textbook** Sturdevant’s Art and Science of Operative Dentistry 5th ed pages 737-777.


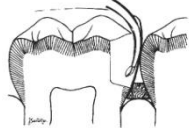









2. **Review section on “Matrices and Wedges”** in this manual. Think ahead on which system will work best for this restoration.

Get the following items:

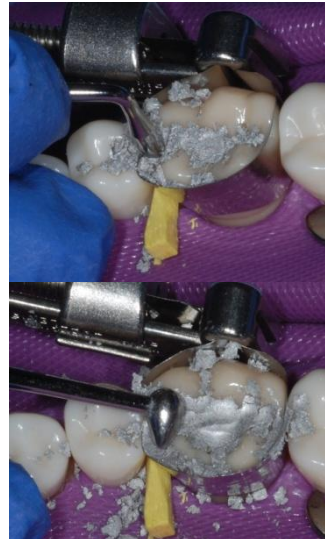
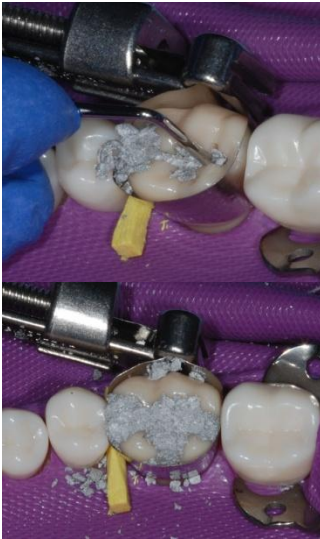
Item	Picture or Procedure	Associated supplies	From
Rubber dam cassette Class 2, 3-Tofflemire retainer			Window
Rubber dam (See section on “Rubber Dam” for supplies) Matrix		Wooden wedges 	Operative supplies
Copalite varnish		Fuzzy applicator tips or Plastic medicine cup	Operative supplies
Amalgam capsules			Operative supplies

Procedure:

Steps	Pictures*	Tips, Thoughts, and Details
1. Determine whether liner is indicated. Apply liners or Copalite varnish		Liner indicated if this is the first restoration the tooth has received or if pt has a history of sensitivity to new restorations. If lesion is deep, see section on Vital Pulp Therapy.
2. Pre burnish matrix		
3. Fit the matrix onto the tooth		
4. Wedge - Place wedge with cotton pliers or hemostat		

		<p>1. Band should contact adjacent tooth (burnish)* 2. Contact should be convex, and at junc. O/M 1/3</p> 
<p>5. Triturate amalgam</p>		<p>Setting: Turtle Time: Blue(2 spill) or green (1 spill) 14 sec \pm 3 sec <u>Adjust time based on consistency:</u> Too crumbly- increase time 2 sec Hot, shiny, sticks to capsule- decrease time 2 sec</p>
<p>6. Transfer amalgam</p> 		<p>Start with the small end of one carrier ONLY. When you have condensed over the floor and all retentive elements, switch to larger carrier.</p>
<p>7. Condense general</p> <p>a. Small condenser first</p> 		<p>Thoroughly condense each increment before adding more amalgam. Small condenser for pulpal line angles.</p>
<p>b. Large condenser</p> 		<p>Ensures that marginal amalgam is well condensed before carving</p> <p>Condense about 1 mm of amalgam above the cavosurface margin</p>
<p>c. Class II</p> <p>a. <u>Box area first</u>, using small increment of amalgam and small condenser.</p> <p>Condense into the line angles and against the matrix band</p>		

b. Following increments.
After floor and retentive features are condensed, switch to using the large carrier and larger condenser.



c. Overfill the cavity with a generous amount of amalgam

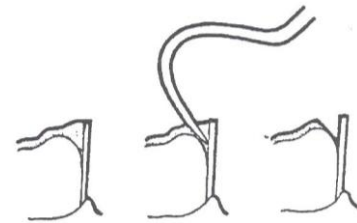
8. Pre-burnish



Use football and beaver tail burnisher. Smooth amalgam against margins to leave a thin layer.

9. Carve

a. Define contact area, marginal ridge and occlusal embrasure











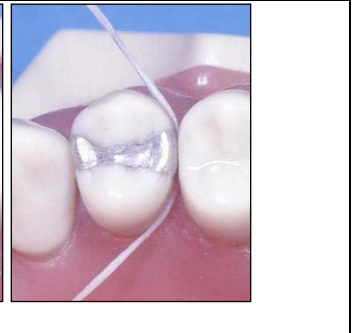
b. Find outline of the preparation with large cleoid



c. Rough out occlusal anatomy

Define occlusal pits then join with groove using cleoid end or Instrument: #21



<p>10. Remove the matrix retainer first, then the wedge, then matrix</p>		
<p>11. Remove interproximal flash using interproximal carving instrument</p>		
<p>12. Create correct embrasure form</p>		
<p>13. Occlusion</p>		<p>Do not allow the patient to bite down initially. Gently guide them into a centric occlusion, then insert a piece of articulating paper and have them gently tap. Adjust high spot. When centric occlusion is finalized, have pt move into working and non-working movement and make sure the occlusion is clear as well.</p>
<p>14. Finishing: Check Contact/ Gingival margins (overhang)</p>		
		

Pitfalls:




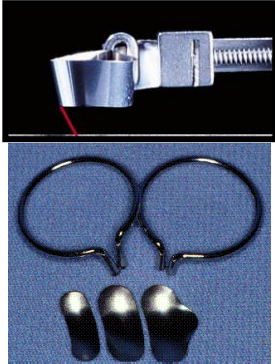


1. Open contact- from not pre-burnishing the matrix band or wedging the tooth firmly enough
2. Overhang- Not ensuring that the matrix band is sealed prior to condensation or condensing down in to the box at an outward angle rather than aiming into the tooth.


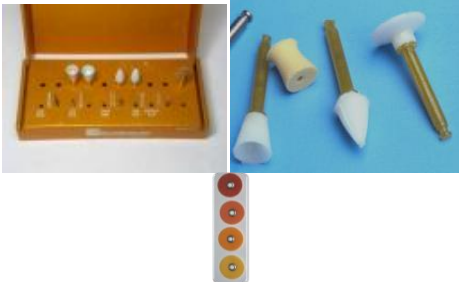
Composite Restorations

Before you come to clinic:




Read **notes** from Operative Lectures on Composites





Get the following items:






Item	Picture or Procedure	From
All composites		
Rubber dam cassette Rubber dam		Window Operative supplies
Vita Shade guide		Window
<ul style="list-style-type: none"> • 37% phosphoric acid (Bisco) • Primer & adhesive system (Optibond FL) 		<ul style="list-style-type: none"> • Window • Operative supplies
Composite resin (Point 4 or Premise)		Operative supplies
Class II, Add:		
Tofflemire matrix system OR Sectional matrix system		Operative supplies Window
Wooden wedges		Operative supplies
Finishing kit Enhance points/cups		Window Operative supplies



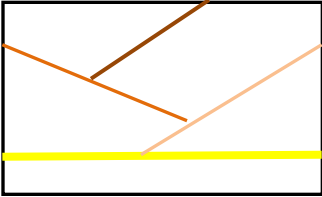
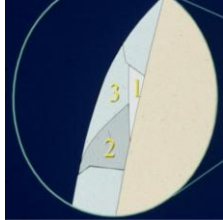
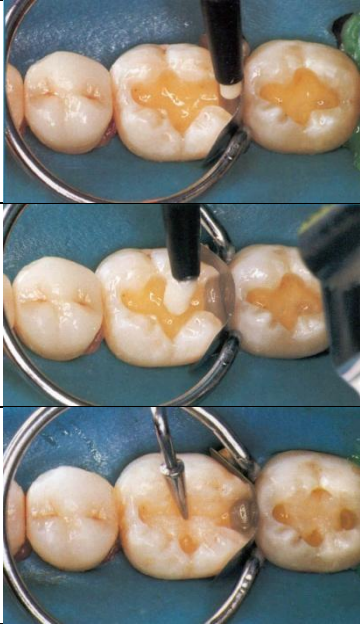

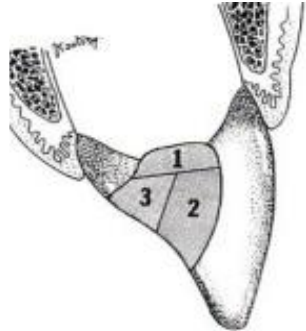
Class III and IV, Add:		
Mylar Strip/wedges		
Finishing kit Soflex-discs Enhance points/cups		Window Operative supplies









Procedure:


Steps	Pictures*	Tips & Thoughts
All composites		
1. Determine shade before placing rubber dam		The tooth will turn several shades lighter within minutes after isolation
2. Rubber dam placement	<p>See section on Rubber Dam Placement</p>  <p>Class V isolation</p>	Mandatory - composite is sensitive to moisture-working without a rubber dam seriously degrades the quality of the restoration.
3. Preparation:		
Class I, V		
<ul style="list-style-type: none"> Just remove the decay and unsupported enamel- no need for a flat floor or sharp angles of any sort Do not bevel occlusal surfaces 		Consider sealing grooves that may not be coalesced but are not carious

Class II		
<ul style="list-style-type: none"> • Design- Remove decay, then develop the outline based only on the need for convenience and clearance form-. • Bevel facial and lingual margins, but not occlusal. • If gingival box extends below enamel, consider doing an “open sandwich” resin modified glass ionomer layer up to the area of sound enamel. 		<p>No need to cut a dovetail in the occlusal.</p> <p>Consider sealing grooves that may not be coalesced but are not carious</p>
Class III		
<ul style="list-style-type: none"> • Design-Remove decay and unsupported enamel. • Bevel facial and lingual margins. • If gingival box extends below enamel, consider doing an “open sandwich” resin modified glass ionomer layer up to the area of sound enamel. 		<p>This illustration shows Dycal in place, but only use it if you are near (blushing deep!) the pulp. Not used routinely.</p>
Class IV		
<ul style="list-style-type: none"> • Design- Remove decay and unsupported enamel • Bevel all cavosurface margins • If gingival box extends below enamel, consider doing an “open sandwich” resin modified glass ionomer layer up to the area of sound enamel. 		 <p>Black lines indicate bevel.</p>

<p>4. Place pulp protection (if necessary). See section on “Bases and Liners”</p>		
<p>5. Place matrix- See choices in section on “Matrix Selection”</p>		
<p>Class II (options on type of matrix)</p>		<ul style="list-style-type: none"> • Matrix should make contact with the adjacent tooth • Band should be below the gingival margin
<p>Class III, Class IV Place clear plastic matrix below level of margin, then place wedge</p>		<p>Do not touch embrasures with fingers.</p>
<p>6. Bonding to enamel and dentin</p>		
<p>Apply 37% phosphoric acid etching gel to enamel and dentin for 15-20 sec.</p> <ul style="list-style-type: none"> • Rinse with water stream only (not air/water mix) for 15 sec • Remove excess water with suction or brief air stream. 		<p>Do not desiccate dentin!</p>
<ul style="list-style-type: none"> • Apply Primer with applicator (light scrubbing motion, 5 seconds) • Gently air dry to remove the solvent.(15 seconds) 		<ul style="list-style-type: none"> • Use Optiguard FL for priming and bonding. Instructions are on the back of the package. • Dentin surface should appear shiny
<ul style="list-style-type: none"> • Apply bonding agent (Optibond) with applicator. • Light cure for 20 sec 		<p>Do not apply too much adhesive. A thick adhesive layer leaves the weaker, unfilled resin at the margin, and it will look like decay on a radiograph.</p>

<p>7. Place compule in the composite gun, express the first part of composite in compule and discard.</p>		<p>The material in the tip is usually dried out</p> 
<p>8. Apply composite in increments, optimally 1-2 mm. <i>Before you start, move light of the dental unit away from the restoration, and cover your head lamp</i></p>		
<p>Class I, V:</p> <p>a. First Increment- 1 mm across floor b. Following increments- diagonally in 1-2 mm thickness Remember, this prep has the highest C-factor of 5!</p>	<p>Class1:</p> 	<p>Class V</p> 
<p>Class II:</p> <p>a. First increment</p> <p>b. Following increments</p> <p>c. Last increment</p>		<p>Place first increment in box Light cure for 20 seconds</p> <p>Add increments of 2 mm diagonally on one enamel margin at a time. Light cure 20 sec after each increment.</p> <p>Sculpt composite to the desire anatomy</p>
<p>Class III, IV</p> <p>a. First increment along prep floor b. Following increments to the facial or lingual.</p>		

<p>9. Cure for 20 sec with LED curing light (cordless) or 40 sec for Quartz Tungsten Halogen light (corded)</p>		<p>Aim at the restoration</p> <p>Moving tip 1-2m back & forth may reduce adverse effects of curing light 'hot spots'</p>
<p>10. Remove matrix band</p>		
<p>11. Shape and contour</p>		
<p>a. Contour with football bur or slow speed #4 bur</p> <ul style="list-style-type: none"> • Occlusals on Class I, II • Linguals of Class III, IV 		<p>Follow the contours of the tooth. A slow speed bur will allow you to feel the enamel better.</p>
<p>b. Contour with flame bur</p> <ul style="list-style-type: none"> • Class V • Facials of Class III, IV • All embrasures 		<p>Angle the bur to reproduce the convexity/concavity of the tooth</p>
<p>12. Polish</p>		
<p>a. Polish interproximals with abrasive strips.</p> 		<p>Use abrasive strips in this order:</p> <ul style="list-style-type: none"> • Dark end of gray strip • Light end of gray strip • Blue strip <p>There is a half-width gray strip available for polishing gingival without opening contact.</p>
<p>b. Polish occlusal, lingual, and Class V with polishing points</p>		<p>Be sure you don't heat the tooth with this step!!!</p> <ul style="list-style-type: none"> • Light, intermittent touch • Keep blowing with air
<p>c. Polish large flat surfaces; facials of Class IV, large Class V with disks</p>		<p>Use Sof-Lex disks in this order:</p>  <ul style="list-style-type: none"> • Coarse-brown • Medium-orange • Fine-gold • Extra fine-yellow

<p>13. Consider using Optiguard a. Etch with phosphoric acid gel b. Rinse 15 sec c. Dry as much as possible d. Apply with a <i>microbrush</i> barely damp with Optiguard. e. Light cure 20 sec</p>		
<p>13. Finishing: Check Contact/ Gingival margins (overhang), using dental floss. Repair, or polish as needed</p>		
<p>14. Remove rubber dam</p>		
<p>15. Check occlusion</p>		

Pitfalls:

- 1. Open Contact.** You must contour the band and ensure a good contact prior to placement of restorative material. Since you aren't condensing (like amalgam), you won't get any more pressure against the contact area.
- 2. Removing enamel while contouring.** Use the football bur only on lingual surface of anteriors or occlusal surface.
- 3. Gingival overhang.** This is very annoying because it is difficult to remove and takes a LOT of time and elbow grease with polishing strips. Wedge very carefully and pull the matrix band to contour against the tooth surface as best you can.

What to tell the patient after you are done:

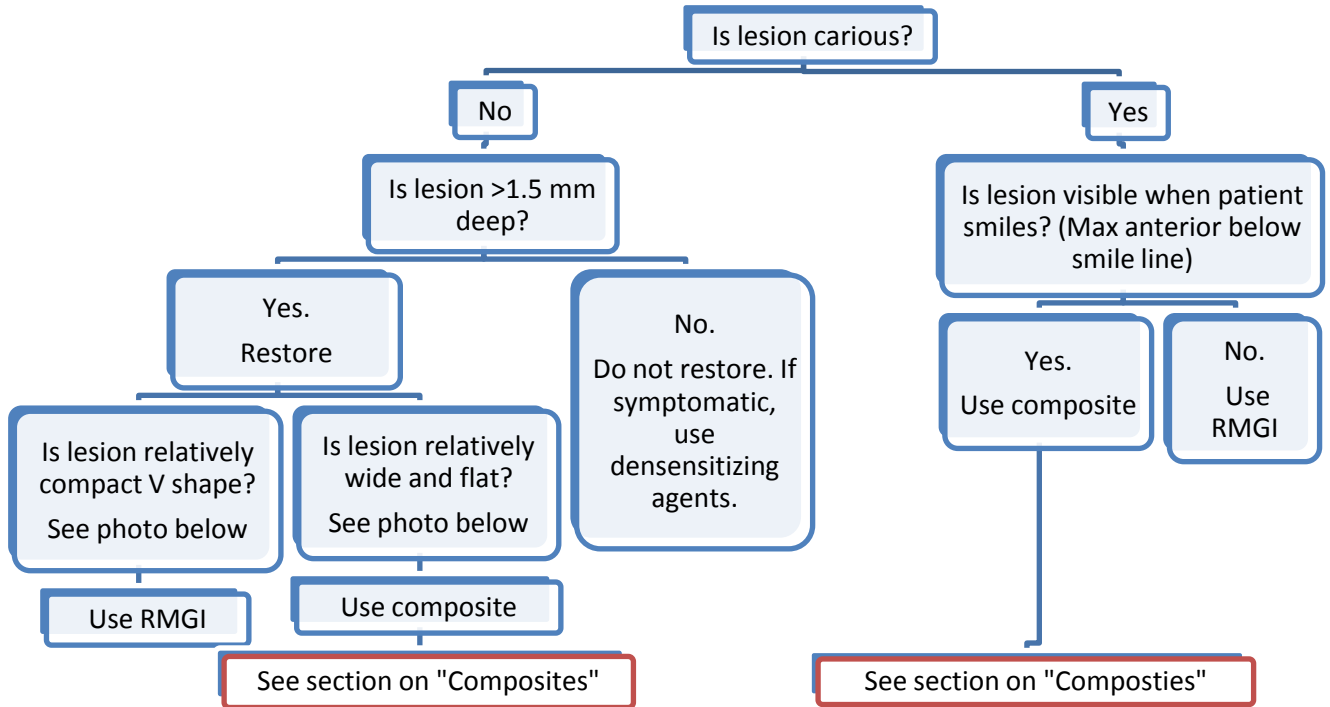
Possible post-operative sensitivity. They should call you if this happens, and you can consider resealing the surface with Optiguard at the next appointment.

Prepared by Dr. Martha Brackett

Class V Lesions

Before you come to clinic:

1. Read notes from Operative Lecture titled "Restoration of Non-Carious Class V Lesions" and "Class V Composites"
2. Understand indications for these procedures:



Non-carious, V-shaped lesion








Non-carious, wide/flat lesion





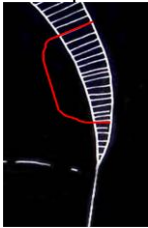
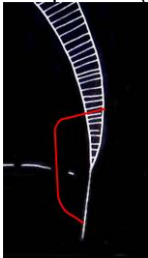
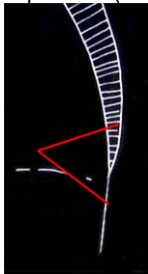
Carious lesion

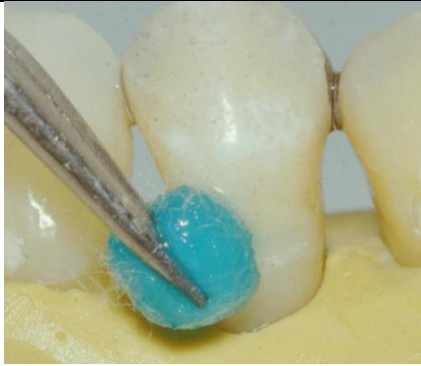



Get the following items:

Item	Picture or Procedure	Associated supplies	From
All restorative materials:			
Vita Shade guide			Operative supplies
Dental floss Bite block Ultrapack retraction cord			Operative supplies
If using composite, add:			
Rubber dam cassette 212 clamp			Window
Rubber dam			Operative supplies
<ul style="list-style-type: none"> 37% phosphoric acid (Bisco) Primer & adhesive system (Optibond FL) 		Microbrushes	<ul style="list-style-type: none"> Window Operative supplies
Composite resin (Point 4 or Premise)			Operative supplies
Finishing kit Enhance points/cups Small Soflex discs (medium, fine)			Window Operative supplies
If using glass ionomer, add:			
Cotton rolls Dry angles Ultrapack retraction cord			Operative supplies

GC conditioner Fuji II LC capsules		Fuji II LC applicator gun Microbrushes	Operative supplies
Finishing kit Small Soflex discs (medium, fine)			Window Operative supplies

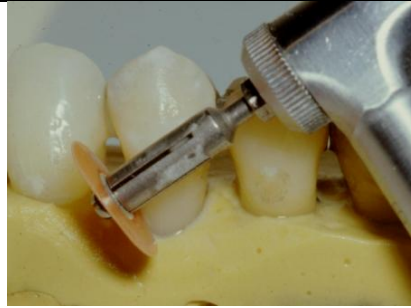
Procedure:

Steps	Pictures*	Tips & Thoughts
Technique for Glass Ionomer		
1. Determine Vita Classic shade		Usually dark shade , because the cervical third is darker than other thirds.
2. Isolation Composite- Rubber dam is best RMGI- Can use cotton rolls, dry angle isolation. May need retraction cord if margin of lesion is at or below level of gingiva	 	
3. Preparation		
RMGI Prep –Enamel  No need for bevels on cavosurface margins No need for retention grooves	RMGI Prep –CEJ (large)  Note: some instructors may ask you to roughen surface, to improve retention	RMGI Prep –CEJ (abfraction)  Lesions should be 2 mm deep before they should be restored

<p>4. Preparing surface</p> <p>a. Clean lesion and adjacent tooth structure with plain pumice (Preppies), rinse</p> <p>b. Scrub lesion and margins with a microbrush and GC Cavity Conditioner (polyacrylic acid) for 10 sec, rinse, lightly dry</p>		<p>Remove bulk of water but keep the surface moist. Best done by putting high speed suction over prep for 5-10 seconds.</p> <p>Be careful to avoid saliva contamination</p>
<p>4. Mixing</p> <p>a. Tap capsule on a flat surface to fluff the powder</p> <p>b. Activate capsule by depressing the button on the bottom</p> <p>c. Triturate for 10 sec on Rabbit setting</p>		<p>There is an activating tool if you want to use it- usually comes packaged with the applicator gun.</p>
<p>5. Place material. Inject Fuji II LC into internal form of lesion from distal to mesial, allow excess to cover margins and produce approximately 30% overcontour.</p>		<p>This material does not shrink on curing, so bulk filling is best.</p>
<p>6. Remove excess only on mesial and distal ends of lesion with one mesial or distal motion of gold resin instrument, removing any excess from interdental papilla.</p>		<p>Do not try to sculpt RMGI like resin composite, it is too sticky. You will end up with a void on the gingival margin if you do more than suggested.</p>
<p>7. Light cure 20 seconds.</p>		
<p>8. Contour restoration with flame shaped finishing bur at stall speed, using water spray, in high speed handpiece.</p>		

9. Finish restoration wet, using very light pressure, medium Sof-Lex disk (light orange) or rubber composite polishing point .

10. Remove retraction cord.



Surface will not polish.

Pitfalls:

- 1. Oversculpting uncured material**, pulling it away from margins and introducing voids.
- 2. Overfinishing of restoration**, producing undercountour. Restoration must be replaced or repaired with resin composite, as additional RMGI will not stick.

What to tell the patient after you are done:

- The restoration will appear opaque for approximately a week post-placement before reaching a more translucent appearance.




Prepared by Dr. William Brackett

Repair of Restorations

Before you come to clinic:

Understand that minor marginal caries adjacent to crowns, and sometimes adjacent to large direct restorations, can often be repaired with a glass ionomer restoration. Understand that resin composites are usually the worst choice for repairs because they do not bond/seal well with old restorations.

Get the following items:

Item	Picture or Procedure	Associated supplies	From
Cotton rolls Dry angles Ultrapack retraction cord			Operative supplies
GC conditioner Fuji II LC capsules		Fuji II LC applicator gun Microbrushes	Operative supplies
Finishing kit Small Soflex discs (medium, fine)			Window Operative supplies

Procedure:

1. Promise the patient only that you will try to repair his/her crown.
2. Place retraction cord to displace nearby gingiva. (If the caries extends interproximally this will be evident here. Normally, access will prevent a repair under these circumstances.)
3. Make a retentive amalgam-style preparation. Some of the crown margin will normally be removed to establish a caries-free occlusal/incisal wall.
4. Condition, restore and finish as usual with Fuji II LC.

Prepared by Dr. William Brackett

Axium Codes, Referrals, Prescriptions for Operative Clinic

I. Axium Codes

Before you come to clinic:

1. **Review** – www.mcg.edu for Axium training under Clinical Processes:
<http://www.mcg.edu/sod/axium/clinical-processes.html>

Specifically for Treatment Planning, please reference:

<http://www.mcg.edu/sod/axium/tx-planning.html>

2. **Understand:** The treatment codes and notes in Axium are THE legal record of your treatment/interaction with your patients. They need to be accurate which includes the correct information for the correct date on which the patient was actually treated (could be different than the day you end up writing the note.)
3. Each treatment performed on a patient needs to be in a treatment plan (even if added at a later date) so that legal consent can be obtained for each procedure through the patient signature.

Procedure:

1. How to add a note in Axium	Left click on code you are using for that day, right click and choose: "Add note"
2. Choose correct note for procedure accomplished. Fill in all pertinent data including medical history update, anesthesia, materials used, and treatment options/potential outcomes verbally reviewed with patient.	See examples in chart below of typical codes and notes used in Operative Clinic

Typical Operative Codes (and Appropriate Notes)

Amalgam

Both Anterior and Posterior:

- D2140 – Amalgam 1 surface
- D2150 – Amalgam 2 surfaces
- D2160 – Amalgam 3 surfaces
- D2161 – Amalgam 4+ surfaces

Appropriate note:

Medical History Update. (list changes.) Administered __ carpule(s) 2% Lidocaine, 1:100,000 epi. __mg. Placed rubber dam. Removed (decay, existing amalgam, existing composite?). Used (Tofflemire, Automatrix, Sectional?) matrix system. Placed (Tytin, Dispersalloy?) amalgam. Removed Rubber dam, checked occlusion. Educated patient on 24 hr protocol for restoration.

Composite (used for Resin Modified Glass Ionomer –Fuji II LC, Fuji IX)

Anterior:

- D2330 – Resin-based composite 1 surface, anterior
- D2331 – Resin-based composite 2 surfaces, anterior

D2332 – Resin-based composite 3 surfaces, anterior
D2335 – Resin-based composite 4+ surfaces (or involving incisal angle), anterior

Posterior:

D2391 – Resin-based composite 1 surface, posterior
D2392 – Resin-based composite 2 surfaces, posterior
D2393 – Resin-based composite 3 surfaces, posterior
D2394 – Resin-based composite 4+ surfaces, posterior

Appropriate note:

Medical History Update. (list changes.) Administered __ carpule(s) 2% Lidocaine, 1:100,000 epi __mg. Placed rubber dam. Removed (decay, existing amalgam, existing composite?). Used (Tofflemire, Automatrix, Sectional?) matrix system. Etched with 37% Phosphoric Acid, Primed and Bonded with Optibond FL (use Cavity Conditioner for Fuji II LC). Placed (Kerr .4, Kerr Premise?) Composite, Shade _____. Removed Rubber dam, finished and polished, and checked occlusion. Educated patient on 24 hr protocol for restoration.

Core Buildup (not material specific)

D2950 – Core Buildup, including any pins
D2952 – Core Buildup and cast post (must send to lab)
D2954 – Core Buildup and prefabricated (placed that day) post

Appropriate note:

Medical History Update. (list changes.) Administered __ carpule(s) 2% Lidocaine, 1:100,000 epi __mg. Placed rubber dam. Removed (decay, existing amalgam, existing composite?). Used (Tofflemire, Automatrix, Sectional?) matrix system. Placed (amalgam, composite, CompCore and type-brand) Material, shade _____. (Pins, A post?) was used. Removed rubber dam, finished and polished, and checked occlusion. Educated patient on 24 hr protocol for restoration.

Additional Codes:

Bleaching:

D9972 – Bleaching, external, per arch
D9973 – Bleaching, external, per tooth
D9974 – Bleaching, internal, per tooth

Add to note:

“Made impression for bleaching tray. Delivered bleaching tray. Gave patient instructions. Shade before bleaching ____.”

Enameloplasty/Odontoplasty:

D9971 – Odontoplasty, 1-2 teeth, includes removal of enamel projections

Add to note:

Used (Soflex disks, finishing burs?) to remove enamel projections/smooth teeth ____.

Occlusal Adjustment:

D9951 – Occlusal Adjustment – Limited

D9952 – Occlusal Adjustment – Complete

Add to note: “(Limited, Complete?) Occlusal Adjustment. ____teeth, contacts adjusted. Verified with articulating paper.”

Pulp Cap:

D3110 – Pulp Cap – Direct – placed directly on the pulp

D3120 – Pulp Cap – Indirect – place near the pulp (no true pulp exposure)

Add to note: “(Carious, non-cariousexposure?). Placed (Dycal? Vitrebond?). Advised patient of possible outcomes for this tooth.”

Recement Crown/Inlay/Onlay:

D2910 – Recement Inlay, Onlay, Partial coverage restoration

D2915 – Recement Cast, Prefab. Post and core

D2920 – Recement Crown

Add to note: “(Crown, Inlay, Onlay?) Removed and evaluated. Determined that there is no underlying caries. Cemented with (Rely-X, Durelon, Panavia 21?).”

Sealants:

D1351 – Sealant – Per tooth

Add to note: “Tooth was prepared for sealant by (acid etch, fissurotomy?). Placed ____ sealant material. Checked occlusion.”

Sedative Filling:

D2940 – Sedative Filling

Add to note: “It was determined that a Sedative restoration was necessary because _____. Removed (all, some?) decay. Placed (Fuji II LC, IRM?) Tooth is to be re-evaluated in ____ months. Advised patient of the following treatment outcomes: (will need RCT, will replace with permanent restoration?)

X-Rays (Radiographs):

D0210 – Intraoral – complete series (including Bitewings)

D0220 – Intraoral – periapical first film

D0230 – Intraoral – periapical each additional film

D0170 – Bitewing – 1 film

D0172 – Bitewing – 2 films

D0173 – Bitewing – 3 films

D0174 – Bitewing – 4 films

D0330 – Panoramic film

Add to note: “Needed to made ____ radiographs to evaluate ____.”

Pitfalls:

1. Not adding a **note** (or reference to full note) to each procedure that was performed.
2. Not including **pertinent information** like composite brand/type, amalgam brand/type for future reference.
3. Not including treatment outcomes and next steps that were discussed with patient as well as providers (including consultations from other clinics.) Reference names as well as treatments discussed.
4. Not having your faculty approve the note as well as procedure as “planned” if necessary and then either “in process” or “complete.” **This process affects billing and is extremely important to have completed before the patient goes to pay their bill for the day!** The note can be approved at a later time if necessary, though the date on note must be accurate!

II. Referrals

Before you come to clinic:

Refer to online Axiom training pdf:

<http://www.mcg.edu/sod/axium/assets/pdf/referring-consults.pdf>

Procedure:

Under “Forms” tab, choose “REFER”. See below for Endo example:

Form Question	Answer	Date
REFERRAL REQUEST		
To (Consultant or Service):	Endo	05/31/2007
From (Attending Dentist and Service):	Dr. Kevorkian	05/31/2007
Location:	Emergency Clinic	05/31/2007
Date:		
Time:		
REASON FOR REQUEST (Complaints and Findings):	Patient broke tooth #8 down to the level of the pulp. Please do a root canal tx. Allow space for cast, post and core. Thanks.	05/31/2007

Be sure to include:

To (Consultant or Service):	(Endo, Ortho, Oral Surgery, GPR, AEGD ?)	Date:
From (Attending Dentist and Service):	Your name + dentist covering you today	Date:
Location:	Your current location (Clinic 14?)	Date:
Date:	Today's date	
Time:	Current time	
REASON FOR REQUEST: (Complaints and Findings):	Be VERY Specific. Include: 1)Tooth # 2)Current Findings of tooth (cracked, type of pain, restorability?) 3)Specific treatment you want referred (only implant placement, implant placement and restoration?)	

Add to your treatment note:

“Referral entered for (Endo, GPR, Oral Surgery?) for tooth #'s _____, _____ (treatment/evaluation?)”

Be very specific in your referral as well as your note concerning your expectations for your referral outcome. **You are in charge of coordinating all of your patient’s treatment!** Whenever patients travel from one clinic to another to see various providers, there is a potential for misunderstanding and errors. Specificity can significantly reduce that risk!

PRINT OUT YOUR REFERRAL AND TAKE YOUR PATIENT TO THE CLINIC TO WHICH YOU ARE REFERRING AND HELP THEM SET UP THE APPOINTMENT THAT DAY! This is the most efficient way for your patient to be seen and not “fall through the cracks” of a large institutional setting such as MCG!

Local Anesthetic Reactions

During Injection / Post-injection Symptoms

Patient Remains Conscious

- Palpitations
- Flushing
- Sweating
- Headache

- Skin Rash
- Itching
- Wheezing
- Difficulty Breathing

- Anxiety
- Palpitations
- Tremors

Epinephrine OD Allergy (Rare) Local Anesthetic OD

- Partially upright position
- Manage Symptoms
- ABC's
- Contact **EMS** if flushing and headaches occur w/ high BP and follow "GHSU Protocol"

MILD

- Antihistamine Oral
- Medical Consultation

SEVERE

- Academic:
- Epinephrine IM/IV
- Antihistamine IM/IV
- Corticosteroid IM/IV

- BLS
- Recovery is expected
- Manage symptoms

- "GHSU Protocol"
- EMS (911)**
- Dial 1-2222 "activate code 66"
- Contact Oral Surgery 1-9744 or 1-8400 to page OMFS on call
- Initiate CPR

GHSU Protocol

Local Anesthetic Reactions

During Injection / Post-injection Symptoms

Patient Becomes **UN**conscious

Syncope Local Anesthetic OD Allergy (Rare)

Supine Position and Initiate BLS

← YES Pulse? NO

YES Recovery? NO

YES

Syncope?

NO

Academic:
Possible Severe allergy
- Look for Wheezing or Rash

Epinephrine IM/IV
Antihistamine IM/IV
Corticosteroid IM/IV

-Manage Symptoms

-Dial 1-2222
"activate code 66"

-Contact Oral Surgery
1-9744 or 1-8400 to
page OMFS on call

-Crash-cart on Standby

"GHSU Protocol"
-EMS (911)

-Dial 1-2222
"activate code 66"

-Contact Oral Surgery
1-9744 or 1-8400 to
page OMFS on call

-Initiate CPR

Respiratory Difficulty
(Non-Aspiration Induced)

Patient Remains Conscious

Negative HX

HX of Asthma

HX of Heart Failure

- Young
- Rapid Respirations
- Anxiety
- Light-headed
- Paresthesia in extremities

- Wheezing
- Rapid Respirations
- Anxiety
- Increased efforts of respirations
- Flushed and Sweating

- Short of breath
- Cyanotic?
- Coughing
- Suffocating type gasps

-Upright Position and Monitor Vital Signs

Hyperventilation

Acute Asthma

Pulmonary Edema

-Try to Calm and reassure patient first, if unsuccessful then you will need to correct Alkalosis

-Breathe in Paper Bag (or cup hands if no bag)

-Symptoms Relieved or

-If Symptoms Persist...

DO NOT ADMINISTER OXYGEN TO THESE PATIENTS!

-Patient's Inhaler, if present

-Oxygen

-If Symptoms Persist...

Academic:

- Oxygen
- Oral Bronchodilator (Epinephrine Inhaler)
- Epinephrine IM/IV

"GHSU Protocol"
-EMS (911)

-Dial 1-2222
"activate code 66"

-Contact Oral Surgery
1-9744 or 1-8400 to page OMFS on call

-Initiate CPR and Administer Oxygen

Unconsciousness

Supine Position and Initiate BLS

-Have someone Dial 1-2222
"activate code 66"
and
Contact Oral Surgery
1-9744 or 1-8400 to page OMFS on call

-Crash-cart on Standby

NO (ABC's) Patient Breathing? **YES**

Maintain BLS

NO Recovery? **YES**

"GHSU Protocol"
-EMS (911)

-Dial 1-2222
"activate code 66"

-Contact Oral Surgery
1-9744 or 1-8400 to
page OMFS on call

-Initiate CPR

Maintain Airway/Rescue Breaths

**Syncope or
Postural
Hypotension**

NO Pulse? **YES**

Medical History
Prolonged HX of Cortisone TX Diabetes Mellitus

Academic:
Syncope:
May have headache,
weakness, confused

**Adrenal
Insufficiency**

Academic:
Administer
Cortisone IM or IV

-Activate EMS

Hypoglycemia

Academic:
50% Glucose IV
or Glucagon IM

If patient does not
recovery after
glucose then it
may be
Hyperglycemia or
Non-diabetes
related
- Activate EMS

Postural Hypotension:
May be dizzy in upright
position

Altered Consciousness
Patient Exhibits Unusual Behavior

Supine Position and Initiate BLS *if Needed*

HX:
Diabetes Mellitus

Medical History
- Negative -

-Alcohol
-Slurring
- Drunkenness
-Alcohol on Breath

Intoxication
Terminate procedure and arrange a ride home for patient

-Anxiety
-Profuse Sweating and flushing
-Speech Accelerated
-Elevated BP and Pulse
-Tremors

Hyperthyroidism

-Lethargy
-Dry Skin
-Sluggish
-Decreased Pulse
-Peripheral edema and puffy face

Hypothyroidism

-Paralysis
-Speech Loss / Confusion
-Vomiting
-Dizziness / Vertigo
-Significant Headache

Stroke

Medical Consultation

- Can appear to be in a Drunken state
-Skin is moist and cool
-Hunger

Hypoglycemic

Oral Carbohydrate

-Acetone odor on breath
-Skin is dry
- Thirsty
-Nausea, Vomiting possible

Hyperglycemic

Maintain patient

“GHSU Protocol”
-EMS (911)

-Dial 1-2222
“activate code 66”

-Contact Oral Surgery
1-9744 or
1-8400 to page
OMFS on call

-Initiate CPR

Seizures

Move Patient to the Supine Position

A.B.C's and BLS PRN
Try to Keep Patient from Injuring Themselves

-Seizure Terminates

- Manage Symptoms
 - Dial 1-2222
"activate code 66"
- Contact Oral Surgery
1-9744 or 1-8400 to
page OMFS on call
- Crash-cart on Standby

-Seizure Continues

- "GHSU Protocol"**
 - EMS (911)**
 - Dial 1-2222
"activate code 66"
 - Contact Oral Surgery
1-9744 or 1-8400 to
page OMFS on call
 - Initiate CPR and
Administer Oxygen

Academic:
Diazepam IV,
Titrated

Chest Pain

Place Patient into Semi-erect Posture

Terminate Procedure – Re-evaluate Medical Hx

Negative

- Acute Anxiety
- Rapid Respiratory Rate
- Light Headedness
- Peripheral Parathesia

Hyperventilation Syndrome

- Try to Calm and reassure patient first, if unsuccessful then you will need to correct Alkalosis
- Breathe in Paper Bag (or cup hands if no bag)
- Symptoms Relieved or
- If Symptoms Persist...

DO NOT ADMINISTER OXYGEN TO THESE PATIENTS!

Hx: Angina Pectoris

- Usually a Male over 40 With Substernal Pressure
- Radiation of Pain Possible
- Cold Sweat
- Acute Distress

Academic:
Nitroglycerin 0.3mg every 3 Minutes 3 Times.
If symptoms are alleviated then it is Angina Pectoris.
Get Medical Consult before continuing dental TX

Consider Myocardial Infarct if Symptoms are not relieved. Follow **MCG Protocol**.
Administer O2 or (N2O/O2) and have AED on standby

Hx: Myocardial Infarct

Loss of Consciousness	Maintains Consciousness
AED	- BLS

“GHSU Protocol”
-EMS (911)
 -Dial 1-2222
 “activate code 66”
 -Contact Oral Surgery
 1-9744 or 1-8400 to page OMFS on call
 -Initiate CPR

