CONTROVERSIAL ISSUES IN ANTIBIOTIC PROPHYLAXIS

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I. ANTIMICROBIAL PROPHYLAXIS: PRINCIPLES & PRACTICE

A. RISK FACTORS FOR POST-OPERATIVE INFECTIONS:

1. Proportional to the degree of bacterial contamination during surgery – dirty vs. clean surgeries
2. Virulence of the infective organism – HA-MRSA or CA-MRSA?
3. Host factors – immunocompromised?

B. TIMING OF SURGICAL PROPHYLAXIS

IV REGIMENS: Recommend a single dose given just prior to surgery
Give follow-up dose when: drug has short $t_{1/2}$, for prolonged surgeries, ↑ blood loss
PO REGIMENS: Peak plasma concentration of antibiotic should occur when surgery begins

C. SOURCES OF BACTERIAL CONTAMINATION

EXOGENOUS: Due to poor aseptic technique, high O.R. traffic, colonized surgeons

ENDOGENOUS: Flora from patient's skin, GI, GU, or respiratory tract, dirty wounds (pus)
most common cause of post-op infections

D. ANTIMICROBIAL AGENTS

MECHANISM OF ACTION ??: ↓ Level of bacteremia and bacterial growth after adherence
Prevents adherence of bacteria to defect or prosthetic device

- Direct prophylaxis against the <u>most likely</u> infective organisms:
  - Usually normal skin flora
  - Target specific organisms

- For dental procedures: Coverage of Viridans streptococci
  - Amoxicillin preferred by A.H.A. (American Heart Association) over penicillin VK citing better absorption & more prolonged serum levels

F. HEALTH QUESTIONNAIRE IDENTIFIERS

Possible Risk from Oral Bacteremia:

YES NO ? a. **Artificial heart valve replacement**
YES NO ? b. **History of bacterial endocarditis**
YES NO ? c. **Congenital heart disease (type _____)**
YES NO ? d. **Acquired valvular heart disease or heart murmur (no longer necessary to ask)**
YES NO ? e. **History of post-streptococcal glomerulonephritis**
YES NO ? f. **Organ transplantation**
YES NO ? g. **Prosthetic joint replacement (when_____)**
YES NO ? h. **Artificial implant or graft of any kind other than above (list _____)**
YES NO ? i. **Systemic lupus erythematosus (SLE)**
YES NO ? j. **Immunosuppression? Asplenic?**
YES NO ? k. **Physician requests antibiotic coverage for reasons other than above (reason_____)**

II. ANTIBIOTIC PROPHYLAXIS FOR PATIENTS WITH TOTAL JOINT REPLACEMENTS

Joint	Candidates	Results
Knee Replacement	Usually over 55 years old Reasonable weight Significant joint stiffness, instability or deformity Daily pain limits work, recreation & daily activity	80-90% successful for 10 years Loosening is biggest problem By 10 years up to 20% will require revision
Hip Replacement	Usually over 55 years of age Pain limits work, recreation and daily activities Pain not relieved by meds, use of cane or physical restrictions Significant stiffness of joint	Pain relief in 90-95% of patients. 90% are successful for up to 10 years Major long-term problem is loosening **5-10% will require revision** Removal results in leg shortened 1-3 inches

A. STATISTICS

- Overall risk is 5 in 10,000 (0.05%) for of late infection in joint prosthesis due to hematogenous spread of bacteria
- Early joint prosthetic infections (< 1 year) are most often caused by Staphylococcal organisms which were probably buried at the time of surgery
- Historically, over 90% of orthopedic surgeons want all patients with large prosthetic joints to receive antimicrobial prior to invasive dental procedures

B. **GUIDELINES FOR ANTIMICROBIAL PROPHYLAXIS - Changed by AAOS in February of 2009**

- Advisory statement adopted by the ADA and the AAOS (American Academy of Orthopedic Surgeons), published JADA 134:895-899, July 2003. AAOS "retired" that advisory statement in February of 2009.

- AAOS Information Statement recommends lifelong antimicrobial prophylaxis for all patients with total replacements of large weight-bearing joints even though no new evidence for the change exists.

- *Given this new "Information Statement", Orthopedic Surgeons now bear prescriptive responsibility if the dentist does not deem premedication to be appropriate. See* ***Clinical Infectious Diseases****, 1/1/10 and* **JADA***;141;667-671. (Position Paper from the AAOM on Dental Treatment of Joint Patients);Also see JADA December 2011.*

- **Evidence-based recommendation issued December 18, 2012 with guideline writing committee appointed.**

This clinical practice guideline, with three recommendations, is based on a systematic review of the correlation between dental procedures and prosthetic joint infection (PJI).

• Recommendation one, which is based on limited evidence, supports that practitioners consider changing their longstanding practice of prescribing prophylactic antibiotics for patients who undergo dental procedures. Limited evidence shows that dental procedures are unrelated to PJI.

• Recommendation two addresses the use of oral topical antimicrobials (topical antibiotic administered by a dentist) in the prevention of PJI in patients undergoing dental procedures. There is no direct evidence that the use of oral topical antimicrobials before dental procedures will prevent PJI.

• Recommendation three is the only consensus recommendation in the guideline, and it supports the maintenance of good oral hygiene.

RECOMMENDATION ONE (ABOVE) IS WORDED IN SUCH A WAY THAT IT DOES NOT PROVIDE THE DENTAL PROFESSIONAL WITH A DEFINITIVE GUIDE FOR DECISION-MAKING. IN LIGHT OF THIS SITUATION, WE WILL CONTINUE TO USE THE JULY 2003 GUIDELINES AS THEY ARE EVIDENCE-BASED. PREMED ALL TOTAL JOINT REPLACEMENT PATIENTS FOR THE FIRST TWO YEARS. CONTINUE TO PREMED PAST THAT POINT ONLY IF THE PATIENT IS IMMUNOCOMPROMISED BY DRUG OR DISEASE OR IF THE JOINT IS CONSIDERED "AT RISK".

C. PATIENTS AT INCREASED RISK OF LATE INFECTION

IMMUNOCOMPROMISED – IMMUNOSUPPRESSED

- Disease: insulin-dependent diabetes (Type 1), rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), other collagen vascular disorders
- Drugs: glucocorticoids , immunomodulators or antineoplastics
- Treatment: radiation therapy

OTHER PATIENTS AT INCREASED RISK

- Patients with chronic infections: e.g. urinary or respiratory tract infections, chronic periodontitis
- Malnourished or Hemophiliac

ORTHOPEDIC RISK

- Patients with history of post placement complications – previous infection in joint, recent dislocation, recent capillary hemorrhage near prosthesis, re-operated joints, etc.
- Joint in place <u>less than 2 years</u>

D. SCREENING QUESTIONS FOR PATIENTS

YES NO ? DO YOU HAVE ANY ARTIFICIAL JOINTS? (if yes, answer questions below)

1. How long have you had the prosthetic joint? (date of surgery _____)
   (note: if 2 yrs. or less = premedicate, if greater than 2 years = no need for premedication unless "yes" to questions 2 and/or 3)
2. YES...NO...? Have you had any problems with the joint since it was replaced?
3. YES...NO...? Is your immune system suppressed by disease, medications or treatments?

E. PRESCRIPTIONS

Rx: Amoxicillin 500 mg capsules
or
Cephalexin 500 mg capsules
Disp: # 4
Sig: Take 4 capsules p.o. 1 hr. prior to dental appointment

- **Amox Is for patients <u>NOT</u> allergic to penicillin**
- Cephalexin is a 1st generation cephalosporin with good strep. coverage and active against staphylococcal organisms

Rx: Clindamycin 150 mg capsules
Disp: # 4
Sig: Take 4 capsules p.o. 1 hr. prior to dental appointment

- For patients with penicillin allergy
- 150 mg capsules available generically

Rx: Cefazolin 1 gram <u>or</u> Ampicillin 1 gram
Administer: I.M. or I.V.
Sig: 1 hr. prior to procedure

- For patients unable to take oral medications AND NOT allergic to penicillin

Rx: Clindamycin 600 mg
Administer: I.V.
Sig: 1 hr. prior to procedure

- For patients unable to take oral medications AND penicillin allergic

F. DENTAL MANAGEMENT OF PATIENTS WITH TOTAL JOINT REPLACEMENTS

- Updated health history with each visit and explain why you ask at every visit
- Reinforce home-care procedures and use chemotherapeutic measures to reduce bleeding
- Immediate and aggressive treatment of acute and newly recognized chronic infections
- Avoidance of regular daily bacteremia

III. PROPHYLAXIS FOR OTHER IMPLANTS AND DEVICES

A. NO PROPHYLAXIS NECESSARY:

- Breast implants
- **Intraocular lenses**
- Dental implants
- Cochlear implants
- Cardiac Pacemakers
- **A.I.C.D. (Artificially Implanted Cardiac Defibrillators)**
- Orthopedic Plates, Pins, Screws, and Wires
- Hernia Repair Mesh, Vascular Screens

B. PENILE PROSTHESES

BACKGROUND: 30% of men over 40 yrs. have erectile problems due to:
- arteriosclerotic disease, endocrine problems
- medications (25%) e.g. antihypertensives, diuretics alcohol, tobacco

MANAGEMENT: Defer elective dental treatment until 3 months post-op
ANTIBIOTIC *PROPHYLAXIS?? Not unless immunosuppressant co-morbidities are present*

C. VASCULAR GRAFTS

BACKGROUND: 1 – 5 % incidence of infections
- varies with the site of graft placements
- organisms often originate from bowel or skin

MANAGEMENT: Antibiotic prophylaxis is indicated for grafts < 6 months old
- pseudointima (connective tissue & fibrin) forms on the inner surface of the graft
- physician consult to determine size, type and location of graft

D. INTRAVASCULAR ACCESS DEVICES

BACKGROUND:

Central (tunnel) I.V. lines
- Broviac or Hickman lines - for chemotherapy
- Uldall catheters - for hemodialysis, plasmaphoresis

- Infections primarily due to skin contamination
- Increased risk with newer grafts

MANAGEMENT: No invasive procedures within 6 weeks of graft placement or revision

- Hemodialysis patients (JADA. Dental Considerations for the Patient with Renal Disease. 127:211-19, 1996)
  - at ↑ risk of S.B.E., Viridans group Strep is responsible for 17% of I.E. cases in renal failure patients
  - ? mechanism – long term cardiac valve problems with hemodialysis patients
  - consult hemodialysis clinic for their recommendation-some still use AHA recommendations
  - **home maintenance of oral hygiene is crucial to avoid shunt infection**

E. CEREBROSPINAL FLUID SHUNTS

- **Ventricluoatrial shunts (ventriculoatriostomy)– at risk, premedicate**
  - old procedure where tube from brain ventricle empties into heart atrium

- Lumboperitoneal shunts – negligible risk, no prophylaxis needed

- Ventriculoperitoneal shunts – negligible risk, no prophylaxis needed
  - Most common procedure performed today
  - Used to treat hydrocephalus, post-stroke injury
  - Used to treat normal pressure hydrocephalus (NPH) which is a reversible cause of dementia

IV. PROPHYLAXIS FOR THE PREVENTION OF SUBACUTE BACTERIAL ENDOCARDITIS (SBE) – CIRCULATION, APRIL 19, 2007

2007 AHA Guidelines for the Prevention of Infective Endocarditis

A. Regimens for a Dental Procedure

Situation	Agent	Regimen – Single dose 30-60 minutes before procedure	
		Adults	Children
Oral	Amoxicillin	2 g	50 mg/kg
Oral Allergic to penicillins or ampicillin	Cephalexin**† *OR* Clindamycin *OR* Azithromycin *or* clarithromycin	2 g 600 mg 500 mg	50 m/kg 20 mg/kg 15 mg/kg
Unable to take oral medication	Ampicillin *OR* Cefazolin or ceftriaxone	2 g IM or IV* 1 g IM or IV	50 mg/kg IM or IV 50 mg/kg IM or IV
Allergic to penicillins or ampicillin and unable to take oral medication	Cefazolin or ceftriaxone† *OR* Clindamycin	1 g IM or IV 600 mg IM or IV	50 mg/kg IM or IV 20 mg/kg IM or IV

*IM – intramuscular; IV – intravenous.
**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 anaphylaxis, angioedema, or urticaria with penicillins or ampicillin

B. Cardiac Conditions Associated with the Highest Risk of Adverse Outcome from Endocarditis For Which Prophylaxis with Dental Procedures Is Recommended (Table 3.)

Prosthetic cardiac valve

Previous infective endocarditis

Congenital heart disease (CHD)*
- Unrepaired cyanotic CHD, including palliative shunts and conduits
- Completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months after the procedure**
- Repaired CHD with residual defects at the site or adjacent to the site of a prosthetic patch or prosthetic device (which inhibit endothelialization)

Cardiac transplantation recipients who develop cardiac valvulopathy

* Except for the conditions listed above, antibiotic prophylaxis is no longer recommended for any other form Of congenital heart disease (CHD).
**Prophylaxis is recommended because endothelialization of prosthetic material occurs within 6 months After the procedure

C. Dental Procedures for which Endocarditis Prophylaxis is Recommended for Patients

All dental procedures that involve manipulation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa *
***The following procedures and events do not need prophylaxis**: routine anesthetic injections through noninfected tissue, taking dental radiographs, placement of removable prosthodontic or orthodontic appliances, adjustment of orthodontic appliances, placement of orthodontic brackets, shedding of deciduous teeth and bleeding from trauma to the lips or oral mucosa.

D. SAMPLE ADULT ANTIBIOTIC PREMEDICATION PRESCRIPTIONS

RX: Amoxicillin 500 mg capsules
Disp. # 4
Sig: Take 4 capsules p.o. 1 hour before dental Appointment

- **For patients NOT penicillin allergic**
- Pediatric dose: 50 mg/kg not to exceed adult dose!
- Amoxicillin is available in 500 and 250 mg **capsules,** and 250 mg chewable tablets and 250 mg/5 ml susp.
- Amoxicillin ≠ ampicillin ≠ penicillin VK

RX: Clindamycin 150 mg capsules
Disp. # 4
Sig: Take 4 capsules (600 mg) p.o. 1 hour before dental appointment. Take with food or milk.

- **For patients with penicillin allergy**
- Pediatric dose: 20 mg/kg
- Clindamycin is a lincomycin, therefore not cross-reactive with the erythromycin family

RX: Cephalexin 500 mg capsules
OR
Cephradine 500 mg capsules
Disp. # 4
Sig: Take 4 capsules p.o. 1 hour before dental appointment

- Pediatric dose: 50 mg/kg
- Cephalexin (generic Keflex®) is less expensive than cephradine (generic Velosef® or Anspor®)
- Also comes in a 250 mg/5ml suspension
- Avoid cephalosporins if patients allergic reaction was either – urticarial, angioedema, anaphylaxis or unknown

RX: Clarithromycin (Biaxin®) 500 mg tablets
Disp. # 1
Sig: Take one tablet p.o. 1 hour before dental appointment.

- Pediatric dose: 15 mg/kg
- An erythromycin with low GI irritation

RX: Azithromycin (Zithromax®) 250 mg tablets
Disp. #2
Sig: Take 2 tablets p.o. 1 hour before dental appointment.

- Pediatric dose: 15 mg/kg
- Less drug interactions than macrolides, low incidence of GI irritation
- Very expensive, no therapeutic advantage over Biaxin® or EES

Oral liquids for adults who have forgotten to take premedication at home:

RX: Amoxicillin 250 mg/5 ml suspension
Disp. # 40 ml
Sig: Take 40 ml one-half to one hour before dental appointment

- Suspension is a powder that must be reconstituted prior to use- tastes good
- Reconstituted suspension expires in 14 days with or without refrigeration

RX: Erythromycin ethylsuccinate 400 mg/5 ml susp.
Disp. # 20 ml
Sig: Take 20 ml one-half hour before dental appointment

- Suspension is commercially available premixed
- Must be refrigerated, has a shelf life of about 2 years.
- Suspension is better tolerated (GI) than tablets

RX: Cleocin® 75 mg/5 ml solution
Disp. # 40 ml
Sig: Take 40 ml one-half hour before dental appointment

- Solution must be reconstituted & expires in 14 days
- Do NOT refrigerate
- Taste and smell are less than desirable

V. OTHER CONDITIONS THAT MAY REQUIRE ANTIMICROBIAL PROPHYLAXIS

A. SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

BACKGROUND:

- SLE is an inflammatory autoimmune disease whereby pathogenic antigen-antibody complexes harm a variety of organs & systems including the skin, kidneys, blood vessels, joints and the heart
- 50% of SLE patients demonstrate cardiac valve abnormalities at autopsy
- SLE patients have an increased prevalence of cardiovascular abnormalities
- **Incidence of *Infective Endocarditis***: SLE = 1 - 7%
  RHD = 0.8 - 1.2%
  Prosthetic heart valve = 1.1%

MANAGEMENT: Progressive SLE patients should be regularly evaluated for the detection of new heart murmurs

And should be questioned about cardiac valve disease at dental visits.

B. ASPLENIC PATIENTS

BACKGROUND (JADA: Dental Considerations in Asplenic Patients. 127:1359-1363, 1996)

- Patients who are functionally or anatomically asplenic fail to clear organisms from the bloodstream and are at an increased risk of overwhelming bacteremia
- Reasons for splenectomy
- Encapsulated organisms pose the highest risk - primary pathogens of concern are *S. pneumoniae, H. influenzae, N. meningitidis, β-* hemolytic streptococci
- Splenectomy confers life-long risk from sepsis in both adults and children (2 - 4%)
- Recommend dental prophylaxis with current AHA regimen when needed

C. SOLID ORGAN TRANSPLANTATION

BACKGROUND: (Clin Transplant. A Survey of Dental Care Protocols. 19: 15-18, 2005)

- Infectious Disease Rates of Patients
  - 80% have "normal" rate of infections
  - 10% chronic or progressive viral infections
  - Hepatitis B or C, cytomegalovirus, EPV etc.
- Theoretically at ⇑ risk from transient bacteremias
- 5-10% recurrent or chronic rejection
  - Increased immunosuppressive dosages (tacrolimus,mycophenolate, prednisone)
  - Most likely to develop opportunistic infections

MANAGEMENT:

- Defer elective dental treatment until at least 6 months after transplantation

D. CORONARY ARTERY STENTS

BACKGROUND:

Prevention of premature discontinuation of dual antiplatelet therapy in patients with coronary artery stents: A science advisory from the American Heart Association, American College of Cardiology, Society for Cardiovascular Angiography and Interventions, American College of Surgeons, and American Dental Association, with representation from the American College of Physicians
JADA May 2007 138(5): 652-655

The report published in *JADA* can be summarized for the dental professional as follows:

1. Dental professionals and other healthcare providers who perform invasive or surgical procedures and are concerned about periprocedural and postoperative bleeding must be made aware of the potential catastrophic risks of premature discontinuation of antiplatelet (thienopyridine) therapy. The dental professional should contact the patient's physician if issues regarding the patient's antiplatelet therapy are unclear, in order to discuss optimal patient management strategy.

2. Elective procedures for which there is significant risk of perioperative or postoperative bleeding should be deferred until patients have completed an appropriate course of thienopyridine therapy. The course of this therapy is suggested as 12 months after drug-eluting stent implantation if they are not at high-risk of bleeding.

WHAT ABOUT ANTIBIOTIC PREMEDICATION??

* **According to the 2007 AHA SBE Prophylaxis guidelines, antibiotic prophylaxis is not indicated as stated in the last section called "other considerations".**

ORAL IMPACT OF DRUG THERAPY

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I. EFFECTS OF DRUGS ON THE SALIVARY GLANDS

A. AUTONOMIC INNERVATION OF SALIVARY GLANDS

BLOOD VESSELS:
Sympathetic alpha = constriction
Parasympathetic response = dilation

SALIVARY GLANDS:
Sympathetic alpha & beta = viscous secretions, amylase secretion
Parasympathetic response = profuse, watery secretions

B. PTYALISM / SIALORRHEA

alprazolam (Xanax®)	clonidine (Catapres)	levodopa (Sinemet)	clozapine (Clozaril)
pilocarpine (Isopto-Carpine)	lithium (Eskalith)	pentoxifylline (Trental)	haloperidol (Haldol)
lorazepam (Ativan)	reserpine (Serpasil)	valproic acid (Depakene)	risperidone (Risperdal)
tacrine (Cognex)	bethanechol (Urecholine)	donepezil (Aricept)	galantamine (Reminyl)

C. XEROSTOMIA

i) **Mechanism of xerostomic drug action:**
   1) Interference with transmission at the parasympathetic neuro-effector junction
   2) Interference with transmission at autonomic ganglia
   3) Actions at the adrenergic neuro-effector junction
   4) Depression of central connections of autonomic nervous system = CNS depressants

ii) **Clinical symptoms of xerostomia:**

- generalized burning sensation in the mouth
- sore, burning tongue
- generalized oral soreness
- repeated oral abrasions & ulcerations (especially associated with denture wearing)
- difficulty swallowing or speaking due to dry tissues
- swelling of the face
- disturbed sleep patterns

iii) **Clinical signs of xerostomia:**

generalized mucosal inflammation
- mucosal atrophy
- fissuring of the tongue
- predisposition to ulceration
- infection by *Candida albicans* & angular cheilitis
- retrograde infection of the salivary glands
- increased rate of dental caries (especially root caries)
- increased plaque formation & accumulation

iv) **Effects on quality of life:**

- increased incidence of oral candidosis
- increased caries and periodontal disease
- decreased nutritional intake
- reduced denture wearing time
- burning mouth, sore tongue, discomfort
- decreased compliance with medications

D. DRUGS WHICH FREQUENTLY CAUSE XEROSTOMIA:

ANTICHOLINERGICS & ANTIPARKINSONIAN AGENTS

methantheline bromide (Banthine)	dicyclomine (Bentyl)	trihexyphenidyl (Artane)
benztropine mesylate (Cogentin)	tolterodine (Detrol)	**oxybutynin (Ditropan)**

ANTIDEPRESSANTS

amitriptyline (Elavil)	SSRI's & others	buproprion (Wellbutrin)
trazodone (Desyrel)	MAOI's	**ALL TCAs**

SYSTEMIC ANTIHISTAMINES

diphenhydramine (Benadryl)	clemastine (Tavist)	hydroxyzine (Atarax)
chlorpheniramine (Chlor-Trimeton)	triprolidine (Actifed)	cetirizine (Zyrtec-OTC)

ANTIPSYCHOTICS

chlorpromazine (Thorazine)	**thioridazine (Mellaril)**	prochlorperazine (Compazine)
haloperidol (Haldol)	thiothixene (Navane)	trifluoperazine (Stelazine)

ANTIHYPERTENSIVES

ACE INHIBITORS	BETA BLOCKERS	ALPHA BLOCKERS
ARBs	**guanethidine (Ismelin)**	**reserpine (Serpasil)**

CNS STIMULANTS	amphetamines	**phentermine (Fastin)**
diethylproprion (Tenuate)	methylphenidate (Ritalin, Concerta)	pseudoephedrine (Sudafed)

DIURETICS

chlorthalidone (Hygroton)	ALL THIAZIDES	**ALL LOOP DIURETICS**
K+ SPARING AGENTS	**furosemide (Lasix)**	**bumetanide (Bumex)**

MISCELLANEOUS AGENTS	systemic bronchodilators	OPIOID ANALGESICS
muscle relaxants	**anticholinergics**	hypotensive agents

E. OTHER CONDITIONS ASSOCIATED WITH XEROSTOMIA

- AIDS/HIV
- Bone Marrow Transplantation
- Chronic Active Hepatitis
- Radiation Therapy
- Primary Biliary Cirrhosis
- Vasculitis
- Graft vs. Host Disease
- Renal Dialysis
- Anxiety or Depression
- Diabetes Mellitus

II. MANAGEMENT OF THE XEROSTOMIC PATIENT

A. PATIENT COUNSELING – see last page of this handout (page 8)

Many patients may be successfully managed via lifestyle/habit changes alone

- the last page contains a patient information handout that can be duplicated for patients
- all xerostomic patients will benefit from those simple and inexpensive suggestions:

B. SELECTED XEROSTOMIA RELIEF PRODUCTS (* denotes ADA acceptance)

– all are OTC products and individual patient acceptance varies widely

PRODUCT (MFR)	INGREDIENTS	DISPENSED/SOLD	PT. COST
GC America Dry Mouth Gel (GC America (800) 323-7063	Polyglycerol 60%, Water 36%, NaCMC 2.5%, five flavors-lemon,mint,orange,raspberry,fruit salad	Dental Office Dispensed Only 40g tubes, order in boxes of 10 tubes	$1.50/tube dentist.net
Mouthkote (Parnell)	xylitol, sorbitol***, yerba santa, citric acid, ascorbic acid, sodium benzoate, saccharin	8 oz pump spray	$9.50
Oasis Mouthwash and Mouth Spray (GlaxoSmithKline-Consumer Healthcare)	Water, glycerin, sorbitol***, poloxamer 338, castor oil, cellulose gum cetylpyridinium chloride (CPC)	16oz bottle mouthwash 1oz spray bottle	$5.99 $4.99
Oral Balance Moisturizing Gel or Liquid (Laclede)	glucose oxidase enzyme system, xylitol, hydroxyethyl cellulose, aloe vera, K thiocynate	42g (1.5 oz) tube of gel 45ml (1.5oz) squeeze bottle	$8.45 $8.45
Salivart Synthetic Saliva* (Gebauer Co.)	NaCMC, sorbitol***, NaCl, dibasic potassium phosphate, Kcl, $CaCl_2$, $MgCl_2$	75 gram can with Nitrogen propellant	$9.50
Stoppers4 Dry Mouth Spray (Woodridge)	Water, glycerin, xylitol,hydroxyethylcellulose,lysozyme, lactoferrin,glucose oxidase	1oz spray bottle	$6.09

➢ V= viscosity agent = thickener ➢ P= preservative ➢ M= miscellaneous agents - buffers, flavoring

***Sorbitol - non-cariogenic sugar alcohol - chronic use in presence of decreased salivary flow may increase *Strep mutans*

Oralbalance® (Laclede) – Moisturizing gel in 1.5 oz tube, Moisturizing liquid in 1.5oz squeeze bottle

- moisturizing gel, especially useful at nighttime, liquid is for daytime use
- spread on tissues and under dentures as needed for long-lasting effects
- high patient acceptance, slightly sweet flavor, beneficial ingredients

C. SALIVA STIMULANTS

1. OVER THE COUNTER

- Dentiva, OraMoist, Sal-Ese, Smart Mouth Mints and Xylimelts discs may give symptom relief
- **SalivaSure®** Tablets (fomerly called Salix SST® by-Scandinavian Formulas, Inc.)-90 ct. bottle $8.95
  - xylitol, citric acid, apple acid, Nacitrate, NaCMC, Dibasic calcium phosphate, colloidal silica
  - buffered citric acid tablets for salivary stimulation without hard tissue demineralization
  - order at www.scandinavianformulas.com- easy to carry, pleasant flavor, well-accepted by patients
  - ***our most highly recommended product, no drug interactions or adverse effects***

2. SYSTEMIC CHOLINERGIC AGENTS

For all cholinergic products:

- titrate to minimum effective dose
- potent cholinergic agonist -must counsel patients as to side effects and signs of toxicity
- contraindicated in patients with narrow-angle glaucoma or cardiovascular disease as well patients on beta-blockers (may cause conduction disturbance) or anticholinergics
- use with caution in patients with gall stones, biliary tract disease, nephrolithiasis or pulmonary disease
- prescribe in consultation with patient's physician

RX: **Pilocarpine 4% ophthalmic solution**
Sig: Place 2-4 drops in 1-2 tablespoons of water, swish and swallow up to QID

- 4% solution = 1.3mg/drop, available in 15 ml bottles
- dose can be placed on sugarless gum
- advantages: can titrate to effect, inexpensive ($12)

RX: **Pilocarpine 5mg & 7.5 mg tabs (Salagen®)**
Sig: 1 tab PO TID

NOW AVAILABLE GENERICALLY!

- disadvantages: unscored tablet
- can't titrate to effect =the biggest disadvantage
- very expensive (5mg $165/100 tabs, 7.5mg $205/100 tabs) – generic is 30% cheaper

RX: **Cevimelime (Evoxac®) 30mg capsules**
Sig: Take one capsule BID-TID

- new product – more selective for receptors
- may be safer from cardiac standpoint expensive
- giving with food extends action
- $180/100 tabs

D. CARIES PREVENTION:

- ***OTC FLUORIDES:***
  - 0.02% rinse (from 0.05% NaF) - Act®, Fluorigard®
  - 0.1% gels (from 0.4% SnF) - generics OTC, Gel-Kam® & Stop® are Rx, etc
    - increased staining from SnF in xerostomic patients and acidic pH can be irritating
    - fluoride concentration is equivalent to most OTC dentifrices
    - ***we do not use stannous fluoride preps for xerostomic patients***

- ***PRESCRIPTION FLUORIDES (higher concentration):***
  - 0.09% rinse (from 0.2% NaF) - Fluorinse®, Prevident, Neutracare, etc.
  - 0.5% neutral gel (from 1.1% NaF) - Prevident®, Neutracare, etc. - brush on or tray delivery
  - Prevident 5000 Dry Mouth® - combination mild dentifrice (RDA 87) & high potency fluoride treatment (1.1% NaF) in a single product – highly recommended for BID use in the xerostomics

- **Xylitol –January 2013 JADA study on adult use of 1gram 5x daily was surprising!**
  -Previous studies on children showed benefit but definitive effect was inconclusive

E. SALIVA ENHANCEMENT OR MINERALIZING PRODUCTS

Table 1. Products containing the four types of calcium phosphate technologies. *This list is not comprehensive.*

	ACP	CPP-ACP (Recaldent)	CSP (NovaMin)	TCP
Toothpastes	Arm & Hammer® Age Defying and Arm & Hammer Whitening Booster Plus Enamel Strengthening *Church & Dwight Co Inc*		Dr. Collins Restore™ Toothpaste *Dr. Collins* Burt's Bees® Natural Toothpaste *Burt's Bees*	Clinpro™ 5000 1.1% Sodium Fluoride Anti-Cavity Toothpaste *3M ESPE*
Prophy Pastes	Enamel Pro® *Premier Dental Products Co*		NUPRO® NUSolutions™ Prophylaxis Paste With NovaMin *DENTSPLY Professional*	
Fluoride Agents	Enamel Pro Varnish and Enamel Pro Gel (1.23% nonacidulated fluoride topical gel) *Premier Dental Products Co*			Vanish™ 5% NaF White Varnish with TCP *3M ESPE*
Sealant Material	Aegis® Pit and Fissure Sealant *Henry J. Bosworth Co*			
Desensitizing Agents	Relief® ACP Oral Care Gel *Discus Dental*	MI Paste™ and MI Paste Plus™ *GC America Inc*	Topex® ReNew™ *Sultan Healthcare* SootheRx™ Therapy for Sensitive Teeth *3M ESPE* NUPRO NuSolutions 5,000 ppm Remineralizing and Desensitizing Toothpaste with NovaMin *DENTSPLY Professional*	
Cements	Aegis Crown and Bridge Cement and Aegis Ortho Adhesive with ACP *Henry J. Bosworth Co*			
Whitening Agents	Zoom® Weekender, NiteWhite® ACP, and DayWhite® ACP *Discus Dental*			
Chewing Gum		Trident Xtra Care™ with Recaldent *Cadbury Adams USA*		
Air Polishing Powder			Sylc™ Air Polishing Powder *OSSPRAY Inc*	

Dimensions of Dental Hygiene, October 2010

1) Novamin (calcium sodium phosphosilicate) by NovaMin

A synthetic mineral composed of calcium, sodium, phosphorous and silica, all elements naturally occurring in the body. Silica (glass) containing Ca and PO is the driving mechanism that binds to the tooth surface

2) Recaldent (casein phosphopeptide-amorphous calcium phosphate)

Casein phosphopeptide and amorphous calcium phosphate (CPP-ACP)

Casein phosphopeptide is a milk protein peptide that is bound to amorphous calcium phosphate

3) Tri-Calcium Phosphate

4) Arginine Bicarbonate and Calcium Carbonate (Sensistat is now Colgate Pro-Argin)

Arginine bicarbonate is an amino acid complex found in saliva that is bound to calcium carbonate

Pro-Relief with Pro-Argin by Colgate
Proclude (Ortek) & Denclude (Ortek)

III. AGENTS CAUSING INCREASED GAG REFLEX

- ✓ Statins" used to manage hypercholesterolemia (Mevacor, Zocor, Lipitor, etc)
- ✓ Potassium-sparing diuretics (triamterene, spironolactone, amiloride)
- ✓ Cholestyramine (Questran, g) – resin for hypercholesterolemia
- ✓ Buproprion (Wellbutrin, g) – antidepressant, anti-smoking

IV. DRUGS WITH DIRECT EFFECTS IN THE ORAL CAVITY

TOOTH DISCOLORATION (EXTRINSIC) stannous fluoride chlorhexidine iron preparations
(INTRINSIC) fluoride tetracyclines

BLACK HAIRY TONGUE

amitriptyline (Elavil)	diazepam (Valium)	nitrofurantoin (Macrodantin)	tetracycline (Sumycin)
Amoxicillin (Amoxil)	hydrogen peroxide	nortriptyline (Aventyl)	
cyclobenzaprine (Flexeril)	ketoprofen (Orudis)	PHENOTHIAZINES	
clonazepam (Klonopin)	lorazepam (Ativan)	penicillin VK	

GINGIVAL OVERGROWTH

amiodarone (Cordarone, Pacerone) ORAL CONTRACEPTIVES **PHENYTOIN (DILANTIN,G)**
cyclosporine (Sandimmune, Neoral) **CALCIUMCHANNELBLOCKERS VALPROICACID(Depakene,Depakote**

PIGMENTATION

busulphan (Myleran)	HEAVY METALS (Hg, Pb)	phenytoin (Dilantin)
bismuth (Pepto-Bismol)	methotrexate (Rheumatrex)	PROGESTINS
cyclophosphamide (Cytoxan)	PHENOTHIAZINES	senna
tetracyclines (Minocin, g)	Hydroxychloroquine	

SOFT TISSUE ULCERATION

ACE INHIBITORS	carbamazepine	ipratropium (Atrovent)	potassium chloride
abacavir (Ziagen)	cocaine	iron salts	warfarin (Coumadin)
actinomycin D (Cosmegen)	Echinacea	leflunomide (Arava)	zalcitabine (Hivid)
alendronate (Fosamax)	feverfew	methotrexate (Folex, Rheumatrex)	zidovudine (Retrovir)
ampicillin (Omnipen)	flavoring oils	modafinil (Provigil)	
aspirin	fluorouracil (Adrucil)	NSAIDs	
bleomycin (Blenoxane)	genitian violet	pancrelipase (Creon)	

CONSEQUENCES OF IMMUNOSUPPRESSION – bacterial, viral and fungal proliferation
Antibiotics: extended and broad spectrum antibiotics including cephalosporins and amoxicillin/clavulanate
Biologics: Anakinra(Kineret),Leflunomide(Arava), Methotrexate,Rituximab(Rituxan),Tacrolimus,Tocilizumab
Corticosteroids: systemic prednisone or methylprednisolone. Inhaled flunisolide, betamethasone, or triamcinolone
TNFIs: Adalimumab(Humira),Certilizumab(Cimzia),Etanercept(Enbrel),Golimumab(Simponi),Inflixumab(Remicade)

V. DRUGS AFFECTING TASTE AND SMELL

D= Dysgeusia-Altered taste M=Metallic Dysgeusia B=Bitter Dysgeusia
A=Ageusia-Absence or impairment of taste H=Hypogeusia-decreases sensitivity to taste S=Sweet Dysgeusia

5-flourouracil (Adrucil) D,S
Acebutolol (Sectral) D
acetazolamide (Diamox) D,B
allopurinol (Zyloprim)
amiloride (Midaamor)-to salt H
amiodarone (Cordarone) D
AMPHETAMINES
amphotericin B (Fungizone) D,H
amrinone (Inocor) D,H
atenolol (Tenormin) D
auranofin (Ridaura) D,M
aurothioglucose (Solganal) D
azathioprine (Imuran) D
azelastine (Astelin) D,B
baclofen (Lioresal) D
BENZODIAZEPINES B, M
benzphetamine (Didrex) D
BETA LACTAM ANTIBIOTICS M
betaxolol (Kerlone) D
bisoprolol (Zebeta) D
bleomycin (Blenoxane) D,A
bretylium (Bretylol) D,H
brinzolamide (Azopt) B
bromocriptine (Parlodel) M
calcifediol (Calderol) M
captopril (Capoten) D,M
carbamazepine (Tegretol) D,H
carboplatin (Paraplatin) M,H
cartcolol (Cartrol) D
cefamandol (Mandol) D
chlorhexidine (Peridex) D,M,B,H
chloestyramine (Questran) D
chloline magnesuim trisalicylate (Trilisate,Tricosal)A
cisplatin (Platinol) M,A,H
clarithromycin (Biaxin) D
cloffibrate (Atromid-S) D
cromolyn sodium (Intal, Nasalcrom) D
dextroamphetamine (Dexedrine) D
diazoxide (Proglycem) D
dicyclomine (Bentyl, Di-Spaz) A
diethylopropion (Tenuate) D
diltiazem (Cardizem) D,B,H
dipyridamole (Persantine) D
dolasetron (Anzemet)
EDTA (Chealamide, Disotate, Endrate) D
enalapril (Vasotec) D,A
encinide (Enkaid)D
ethambutol (Myambutol) M
ethionamide (Trecator-SC) M
etidronate (Didronel) M,A
flecainide (Tambocor) D
flunisolide (AeroBid, Nasalide) A
flurazepam (Dalmane) M
fomepizole (Antizol) M
glycopyrrolate (Robinol) A
granisetron (Kytril) D
griseofulvin (Fulvicin) D
hydrochlorothiazide (Esidrix, Microzide, Oretic) A
hyoscyamine (Anaspaz) A
interferon-gamma A
iodine M
iron (various vitamins) D
iron dextran (Dexferrum) M
isotretinoin (Accutane) A
levamisole (Ergamisol) M
levobupivacaine M
levoldopa (Dopar) D,H
lincomycin (Lincocin) D
lisinopril (Prinvil, Zestril) D
lithium (Eskalith, Lithane) D,M
lomefloxacin A
lovastatin (Mevacor) A
mazindol (Sanorex, Mazanor) D
mechlorethamine (Mustargen) M
metformin (Glucophage) D,M
methimazole (Tapazole) D,A
methocarbamol (Delaxin) M
methotrexate (Folex) D
metronidazole (Flagyl) D,M,H
mexiletine (Mexitil) D
midazolam (Versed) D
moricizine (Ethmozine) D
nadolol (Corgard) D
nicotine polacrilex (Nicorette) D
nifedipine (Procardia) D,A,H
nitroglycerin (Nitrostat) D
ofloxacin (Floxin) A
ondansetron (Zofran) D
OPIATES A
penbutolol (Levatol) D
penicillamine (Cuprimine) D,M
pentamidine (NebuPent) M
phendimetrazine (Anorex, Bontril) D
pergolide (Permax) D
phentermine (Ionamin) D
phenylbutazone (Butazoldin) D,A
pindolol (Visken) D
plicamycin (Mithracin) M
potassium iodide (Pima, Thyro-Block) M
procaine penicillin (Wycillin) D,M
procainimide (Pronestyl) D
propafenone (Rythomol) D,M
propranolol (Inderal) D,A
propylthiouracil (PTU) D,B,H
rifabutin (Mycobutin) A
selegiline (Elderpryl) D
selenium (Sclepen) M
spironolactone (Aldactone) D,B
sulfasalazine (PTU) H
terbinafine (Daskil,Lamisil) A
tetracycline (Achomycin) D,M
timolol (Blocadren) D
tocainide (Tonocard) M
tolbutamide (Orinase) D
troazolam (Halcion) A
vincristine (Oncovin) D
venlafaxine (Effexor) 2% D

VI. DRUGS CAUSING HALITOSIS

AMPHETAMINES	DIURETICS	lithium (Eskalith, Lithane)
ANTIHISTAMINES	DMSO	penicillamine (Cuprimine)
ANTINEOPLASTICS	ethyl alcohol	PHENOTHIAZINES
amyl nitrite	garlic (non-dessicated)	selenium
chloral hydrate (Noctec)	griseolfulvin (Fulvicin)	TRANQUILIZERS
disulfuram (Antabuse)	isosorbide dinitrate (Isordil)	xerogenic drugs

VII. IDIOSYNCRATIC DRUG ERUPTIONS

LICHENOID ERUPTIONS

ACE INHIBITORS	chlorprompamide (Diabinese)	PHENOTHIAZINES	quinine (Formula Q)
acyclovir (Zovirax)	furosemide (Lasix,g)	SULFONYLUREAS	tolbutamide (Orinase)
BETA BLOCKERS	gold salts	TETRACYCLINES	tripolidine (Actagen-C)
carbamazepine	HMG CoA "Statins"	**THIAZIDE DIURETICS**	
chloroquine (Aralen)	NSAIDS	quinidine (Duraquin, Cardioquin)	

FIXED DRUG ERUPTIONS

BARBITURATES (Amytal, Seconal)
chlordiazepoxide (Librium)
SULFONAMIDES (Gantrisin, Gantanol, Bactrim, Septra)
TETRACYCLINES (Doxycycline, Minocycline, Tetracycline)

ERYTHEMA MULTIFORME

aspirin	clomiphene (Cloimid)	meropenem (Meronem)	ranitidine (Tritec)
acyclovir (Zovirax)	danazol (Danocrine)	methazolamide (GlaucTabs)	sulfacytine (Renoquid)
ampho B (Amphocin)	diltiazem (Cardizem)	methotrexate (Folex, Rheumatrex)	sulfadiazine (Microsulfon)
BARBITURATES	Echinacea	methylphenidate (Ritalin)	**SULFONAMIDES**
bupropion (Wellbutrin, Zyban)	efavirenz (Sustiva)	midodrine (ProAmatine)	tamoxifin (Nolvadex)
carbamazepine (Tegretol)	enalapril (Vasotec)	nifedipine (Procardia)	tetanus toxoid

DISSEMINATED LUPUS ERYTHEMATOSUS

hydralazine (Apresoline)	**isoniazid(INH)**	methyldopa (Aldomet)	phenytoin (Dilantin)

VIII. DRUG-INDUCED MOVEMENT DISORDERS

Add/Adhd Drugs – atomoxetine (Straterra), Methylphenidate (Concerta, Metadate, Ritalin)

Antidepressants – SSRIs (Prozac, Paxil, Zoloft, Celexa, Lexapro), TCAs (amitriptyline,nortriptyline), Lithium

Metoclopramide (Reglan), First and Second Generation Antipsychotics – tardive dyskinesia

IX. OSTEONECROSIS OF THE JAW (ONJ) FROM BISPHOSPHONATES

Commonly Used Agents – IV: pamidronate (Aredia), zoledronate (Zometa)-used for bone mets/hypercalcemia
ORAL:alendronate (Fosamax), Ibandronate (Boniva), Risedronate (Actonel)
IV: zoledronate (Reclast) – once a year 5mg infusion for treatment of osteoporosis
SQ: denosumab (Prolia) is a 60mg every six months RANKL inhibitor. Effects on bone are reversible on d/c.

MOA-Bisphosphonates inhibit osteoclast precursors from attaching to the mineralized matrix which blocks transformation into mature osteoclasts (bone-eroding cells). This allows osteoblasts (bone-building cells) to work.

ONJ Etiology – Osteoclast formation is the first step in bone healing so this process is inhibited by bisphosphonates

ONJ Signs and Sx-undiagnosed pain, jaw numbness or heaviness, mucosa fails to heal, soft tissue swelling or infection

ONJ Risk Factors-dental extraction, dental infection or other trauma, drug therapy with corticosteroids, cancer chemotherapy, intravenous bisphosphonates such as Zometa or Aredia, oral bisphosphonates (Fosamax, Actonel, Boniva)

ONJ Characteristics-exposed bone is very painful, swelling and loosening of teeth may be seen, debridement and surgical correction exacerbate lesions, many cases are complicated by infection, primary risk is cancer patients on IV bisphosphonates

ONJ Prevention-avoid elective osseous surgery, recommend panoramic radiograph prior to tx., remove abscessed and diseased tissue, dental prophylaxis and stabilization appropriate, ensure proper denture fit, oral hygiene self-care education

Treatment Modifications for Bisphosphonate patients-check and adjust dentures, aggressively manage dental infections nonsurgically with endodontic tx or minimal surgery, endodontic therapy is far preferable to extractions when possible

ONJ Therapy-antibiotics, alcohol free chlorhexidine (Sunstar Butler), conservative debridement of sequestering bone

XEROSTOMIA (Dry Mouth)
PATIENT INFORMATION HANDOUT

Karen A. Baker, R.Ph.,M.S., Associate Professor
The University of Iowa Colleges of Dentistry & Pharmacy

DEFINITION:

Xerostomia (pronounced "zero-sto'me-ah") is the medical word for dry mouth due to decreased or absent saliva. This problem is quite common and is caused by a variety of medical conditions and medications.

HELPFUL HINTS:

- Sip cool water throughout the day, let ice chips melt in mouth (don't chew ice!)
  - most people do not drink enough fluids and this will contribute to a dry mouth
- Try drinking 2% or whole milk with meals
  - milk has moisturizing properties and helps some people to swallow their food
- Restrict caffeine intake – caffeine is a MAJOR cause of dry mouth. Use caffeine-free tea, coffee and sodas
  - eliminating caffeine from your diet will have a significant effect on the symptoms of dry mouth
- Use a cool air humidifier in the bedroom - clean and change water daily
  - start the humidifier an hour or two before bedtime and let it run through the night
- Avoid alcohol and alcohol-containing mouthwashes (read labels of commercial products carefully)
  - alcohol can irritate the tissues and so can foaming agents like sodium lauryl sulfate (SLS)
- Use sugar-free candy, gum and beverages, look for products that contain Xylitol (a sweetener that does not cause cavities-IceBreakers Ice Cubes, Spry, Theragum, Epic are all high quality xylitol products)
  - overuse of acidic candies and foods can cause a sore mouth
  - chewing gum will stimulate saliva flow but look for 6g/.day of xylitol
- For dry lips,use hydrous lanolin USP (Lansinoh),Banana Boat Aloe with Vitamine E lip balm, or Blistex Herbal Answer during the day and especially at bedtime. Chronic use of Vaseline is drying and should be avoided.
- If possible, sleep on your side in order to reduce mouth breathing
- See your dentist frequently
  - people with dry mouth are more prone to oral yeast infections as well as dental cavities
  - excellent oral hygiene is necessary to prevent cavities and gum disease

COMMERCIAL SALIVA SUBSTITUTES, STIMULANTS & MOISTURIZING GELS

The products listed below are available without a prescription and can be found or ordered from many pharmacies. These products are very helpful in alleviating the symptoms of dry mouth. They can be used as often as needed, do not interfere or react with other prescription drugs and do not have side-effects.

TABLETS:

- **SalivaSure® Tablets (formerly called Salix SST® by Scandinavian Formulas, Inc.) – 90 ct. bottle $7.95**
  - to stimulate natural saliva flow, dissolve one tablet slowly under tongue up to every hour as needed
  - highly recommended, will not cause cavities or sore mouth
  - easy to carry, mild mint flavor, no drug interactions
  - may be difficult to obtain but ask your pharmacist to order the product.(Walgreens can't order it)

GEL:

- **Oral Balance® (GSK) - 1.5 oz tube**
  - moisturizing water based gel, especially useful at nighttime
  - spread on tissues and under dentures as needed for long-lasting effects

TOOTHPASTE:

- **Biotene Toothpaste®(GSK) – 4.5 oz tube – only available in the Fresh Mint Gel right now**
  - also available in a gel formulation in a green box, contains MFP fluoride

SALIVA SUBSTITUTE LIQUID:

- **Saliva Substitute® -4oz(Roxane) or Oasis -1oz (GSK) mouthspray**
- **Oral Balance Dry Mouth Moisturizing Liquid-1.5oz(Laclede)**
- **Stoppers4 Dry Mouth Spray -1oz(Woodridge Inc.)**

THE UNIVERSITY OF IOWA
COLLEGE OF DENTISTRY
& DENTAL CLINICS

Health Questionnaire

Patient Name:_____

Date: _____ Date of Birth: _____

The University of Iowa College of Dentistry requests this information for the purpose of providing a complete and comprehensive evaluation of your dental needs. No persons outside the University will be provided this information unless properly authorized by you or required by law. Failure to provide the requested information will limit our ability to assess your needs and may result in the College being unable to accept you as a patient. Thank you.

Medical History

Clinic Use Only

Circle Below

1. Do you have (or have you ever had) any of the following?

Yes No a. allergic reaction to drugs or latex (Circle all that apply)
Latex Penicillin Aspirin Codeine Local Anesthetics Metal Other

Yes No b. heart attack or heart disease
Yes No c. stroke
Yes No d. high blood pressure
Yes No e. congestive heart failure
Yes No f. angina (chest pains)
Yes No g. irregular heart beat
Yes No h. artificial heart valve
Yes No i. rheumatic fever, rheumatic heart disease
Yes No j. bacterial endocarditis (SBE)
Yes No k. congenital heart disease
Yes No l. heart murmur or mitral valve prolapse
Yes No m. Immunosuppressive condition (Circle all that apply)
Steroid Therapy (e.g. prednisone) Radiation Therapy Chemotherapy SLE (Lupus)
Rheumatoid Arthritis HIV Organ Transplant Spleen removed Other

Yes No n. artificial joint(s) (Circle all that apply)

	Hip	Knee	Ankle	Shoulder	Other
Date(s) placed:					

Yes No o. other artificial implants or devices
Yes No p. bleeding problem, anemia, other blood disease
Yes No q. diabetes
Yes No r. thyroid disease
Yes No s. nervous system disease or seizures
Yes No t. stomach or intestinal disease
Yes No u. kidney disease
Yes No v. hepatitis (A, B, C or D)
Yes No w. other liver disease
Yes No x. arthritis (osteo or rheumatoid)
Yes No y. other muscle or joint disease
Yes No z. asthma
Yes No aa. tuberculosis
Yes No bb. other lung disease
Yes No cc. mental health condition - specify: _____
Yes No dd. physical or mental disabilities that may require special care
Yes No ee. Do you have or have you ever been treated for cancer?
Yes No ff. Are you or could you be pregnant?
Yes No gg. Are you nursing

Clinic Use Only

Yes No 2. Do you have any disease, condition, or problem not listed here?
Describe:

Yes No 3. Have you ever been hospitalized or had surgery?
Describe:

Yes No 4. Do you have any undiagnosed symptoms?
Describe:

Yes No 5. Are you, or have you ever been addicted to a chemical substance?
(examples: alcohol, prescription drugs, heroin, meth, cocaine, other)

Yes No 6. Do you smoke or use tobacco products?

Yes No 7. Are you a past user of tobacco products?

Yes No 8. Do you regularly take herbal medicines or dietary supplements?
Specifically, do you take (circle all that apply):

Echinacea Garlic Ginger Kava Valerian Feverfew
Gingko Ginseng St. John's Wort Vitamin E Other: _____

Yes No 9. Have you undergone current or past osteoporosis therapy ?
(Examples are: Fosamax, Actonel, Boniva pill form)

Yes No 10. Have you undergone current or past therapy to reduce high blood calcium (bisphosphonate therapy)? (Examples: intravenous Aredia, Zometa)

Physician List (please list your family physician and any medical specialists you see at least once a year):

Name	Address	City	Phone#	Name of Specialty

Dental History

Chief Complaint: (Why are you seeking dental care?) _____

Yes No 1. Do you have regular dental check-ups?

2. When was your last dental exam? _____

Yes No 3. Have you had any trouble associated with previous dental treatment?
If so, please explain: _____

Yes No 4. Have you noticed any lumps or sores in your mouth?

Yes No 5. Do your gums bleed when you brush your teeth?

Yes No 6. Have you ever injured your face, jaws or teeth?

Yes No 7. Do you suffer from pain in the mouth, face, eyes, neck or throat?

Yes No 8. Are you unhappy with the appearance of your teeth?

Yes No 9. Has fear ever prevented you from seeking dental treatment?

Yes No 10. Are you allergic to any metals or dental materials?

11. Circle the types of dental treatment you have experienced:

Orthodontics (braces) Dentures Root canal treatment Implants
Oral Surgery Periodontal (gum) treatment TMJ treatment Fillings
Crowns Bridges Veneers Bleaching Other: _____