USEFUL DRUG & DENTAL MANAGEMENT REFERENCES

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I. PROPERTIES OF THE IDEAL DRUG REFERENCE

- **Comprehensive** - index lists brand and generic names of all drugs marketed in the USA
- **Comparative** - includes tables of drug categories vs. side effects, kinetics, interactions, spectrum of action for antimicrobials and clinical characteristics for analgesics
- **Complete** - includes both prescription AND OTC medications in U.S. and Canada

II. GENERAL DRUG REFERENCE SOURCES

A. DRUG FACTS AND COMPARISONS (DFC)-www.factsandcomparisons.com
-pocket edition is $69.95, loose leaf is $429 with renewals at $389, Drug Interactions Facts is $235/$89.95
-2014 annual hardcover edition (no monthly updates) is $215/year/22,000 Rx, 6000 OTC drugs
-2014-available for PDA called A to Z Drug Facts for PDA/Pocket PC,SmartPhone

B. LEXI-COMP DRUG INFORMATION HANDBOOK FOR DENTISTRY – www.lexi.com
-2014 Handbook 19th ed. (May-June) is $59.95, available for one or more office PCs as well
-2014PDA/Blackberry,Android,iPhone,iPad,iTouch,,HP,PocketPC,PalmOS:**Dental Lexi Drugs is $75/year**

III. SPECIFIC DENTAL DRUG RESOURCES

A. GUIDE TO ANTIMICROBIAL THERAPY 2014 (June every year) – www.sanfordguide.com
-desktop, spiral bound, softcover, PDA/Pocket PC versions available
-Spiral is $29.95, softcover is $12.50, PDA/Pocket PC are $29.95

B. PEDIATRIC DRUG DOSAGE HANDBOOKS

1. Harriet Lane Handbook: A Manual for Pediatric House Officers. Mosby.
2. Pediatric Lexi-Drugs for Blackberry by Lexi-Comp
3. Pediatric Dosage Handbook 13th edition, $49.95 by Lexi-Comp

C. CONSCIOUS SEDATION HANDBOOKS

1. **Malamed Stanley. Sedation: A Guide to Patient Management. 5th edition, 2010, C.V. Mosby ($69.95)**
2. **Handbook of Nitrous Oxide and Oxygen Sedation. 3rd edition, 2008. C.V. Mosby ($46.95)**

D. DENTAL MANAGEMENT GUIDES

1. **Malamed Stanley. Medical Emergencies in the Dental Office. 6th edition. 2007 (69.95)**
2. **Little and Falace. Dental Management of the Medically Compromised Patient. 8th edition. April 2012 (72.95)**
3. **Malamed Stanley. Handbook of Local Anesthesia. 6th edition, April 2012. (72.95)**

IV. Herbal and Nutritional Drug Product References

A. Natural Medicines Comprehensive Database – www.naturaldatabase.com
-best resource for health professionals and reasonably priced at $75/year

B. Nutrition Action Health Letter – www.cspinet.org
-published by Center for Science in the Public Interest (CSPI) - $24/10 issues per year

C. Other Useful Websites
-www.consumerlab.com, www.quackwatch.com, www.mskcc.org/mskcc/html/11570.cfm., www.ific.org

DRUGS AND DENTISTRY:
New Issues and Newer Solutions!!

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Table A.1
ANTIHYPERTENSIVE MEDICATIONS – SEE DENTAL MANAGEMENT GUIDE

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
DIURETICS – thiazides are used for hypertension and loops are used mostly for Heart Failure and edema		
<u>Thiazide-Type</u> Chlorothiazide (Diuril,G) Chlorthalidone (Hygroton, G) Hydrochlorothiazide (Microzide 12.5mg,G) Indapamide (Lozol) Methyclothiazide (Enduron, G) Metolazone (Zaroxolyn, Mykrox)	-All agents can cause igh uric acid, low K+, high blood sugar, low sodium, slight xerostomia, oral ulcerations -Chlorthalidone is becoming the diuretic of choice for hypertension due to longer duration and less dependence on renal fx for effect	-Oral lesions possible -NSAIDs decrease effect of diuretic. Prostaglandins enhance renal blood flow so any PG inhibitor can reduce diuretic effectiveness. Minimize effect by limiting duration to 3-5 days.
<u>Loop Diuretics</u> Bumetanide (Bumex,G) Furosemide (Lasix, G) Torsemide (Demadex)	Dehydration, low K+, high blood sugar, high uric acid, oral lichenoid lesions, most severe xerostomia of all diuretics	-Treat xerostomia -Identify oral ulcers -NSAIDs decrease effect of diuretic. Best choice is Diflunisal.
<u>Potassium-Sparing</u> Amiloride (Midamor, G) Spironolactone (Aldactone, G) Triamterene (Dyrenium,G)	High K+, gastrointestinal upset (GI)	-Increased gag reflex -NSAID's decrease amiloride effect -Concomitant indomethacin with triamterene may cause renal failure. Avoid combo
<u>Combination Diuretics</u> Aldactazide (HCTZ + Spironolactone,G) Dyazide (HCTZ 25 + Triam 37.5, G) Maxzide-25 (HCTZ 25 + Triam 37.5, G) Maxzide (HCTZ 50 + Triam 75, G) Moduretic (HCTZ + Amiloride, G)	All of these combination diuretics are intended to minimize potassium depletion while providing good blood pressure reduction	See individual agents above
ANGIOTENSIN-CONVERTING ENZYME (ACE) INHIBITORS-ACE BREAKS DOWN BRADYKININ IN LUNG →COUGH		
Benazepril (Lotensin,G) Captopril (Capoten, G) Enalapril (Vasotec, G) Fosinopril (Monopril,G) Lisinopril (Prinivil,Zestril,G) Moexipril (Univasc,g) Perindopril (Aceon) Quinapril (Accupril) Ramipril (Altace,g) Spirapril (Renormax) Trandolapril (Mavik,g)	HA, dizziness, fatigue,hypotension, loss of taste, oral ulcers, cough(highest with ramipril with 12% incidence) Early in therapy, reactions such as orofacial angioedema and "scalded mouth syndrome" can occur. Both of these reactions require discontinuation of the ACEI with little prospect of successful rechallenge	-Oral lesions possible -NSAIDs decrease effect -Caution with position change -Quinapril reduces Tetracycline absorption by 33% -ACEIs can cause hyperkalemia so patients should avoid salt substitutes which contain potassium and cardiac rate and rhythym changes should be investigated.
ANGIOTENSIN RECEPTOR BLOCKERS (ARBs)		
Azilsartan (Edarbi)	HA,dizziness,cough (1%),	
Candesartan (Atacand,g)	HA, dizziness, cough (1%)	-NSAIDs decrease effect
Eprosartan (Teveten,g)	HA, dizziness, cough (2%)	-Caution with position change
Irbesartan (Avapro,g)	HA, dizziness, cough (2.8%)	-macrolides and azole antifungals may increase losartan levels
Losartan (Cozaar, Hyzaar,g)	HA, dizziness, cough (3.4%)	-Well tolerated but more expensive than ACE Inhibitors
Telmisartan (Micardis)	HA, dizziness, cough (1%)	
Valsartan(Diovan,g)	HA, dizziness, cough (1%)	-not much hypotension

CALCIUM CHANNEL BLOCKERS		
Amlodipine (Norvasc,g).....	...HA, dizziness, peripheral edema	-Diltiazem and Verapamil interact with macrolides resulting in QT interval prolongation and possibly SUDDEN DEATH!
Bepridil (Vascor).....	...Dizziness, nervousness, HA, GI, dry mouth	
Diltiazem (Cardizem/SR/CD,Dilacor XL,G).	...Same as Verapamil	-Caution with position change
Felodipine (Plendil).....	...Peripheral edema, HA dizziness, flushing, respiratory infections, cough	-Strict home care due to increased incidence and severity of gingival overgrowth with plaque build-up
Isradipine (DynaCirc).....	...Like nifedipine,less edema,dizziness	-All CCBs may interact with Fentanyl causing hypotension
Nicardipine (Cardene).....	...Same as Verapamil but more edema and tachycardia	-All CCBs may inhibit platelet function-mainly nifedipine
Nifedipine (Procardia XL, Adalat, G)....	...Peripheral edema, dizziness, HA, nausea, gingival hyperplasia	-Felodipine toxicity increased by erythromycin
Nimodipine (Nimotop,g).....	...Hypotension, rash, HA, GI	-Felodipine interacts with grapefruit juice
Nisiodipine (Sular,g).....	...HA, dizziness, peripheral edema	-"pines"=reflex tachycardia and peripheral edema
Verapamil ..... (Calan/SR, Isoptin/SR, Verelan, G)	...Hypotension, dizziness, HA, bradycardia, gingival hyperplasia	

PERIPHERAL ANTI-ADRENERGIC DRUGS		
Beta-Blockers		
+Acebutolol (Sectral, G).....	...Less bradycardia	-Cause problems in asthma, diabetes
+Atenolol (Tenormin, G).....	...Same as Propranolol	-Increased pressor response to epi worst with non-selectives and epi doses above 0.1mg or 5 carpules. Avoid interaction with selective agent, Labetalol, or Carvedilol.
+Betaxolol (Kerlone,G).....	...Same as Propranolol	-If patient takes a non-selective, limit epi to 0.04mg (++)
+Bisoprolol (Zebeta, Ziac w/HCTZ,G).....	...Same as Atenolol	-Propranolol and Metoprolol can increase Lidocaine and BZDP levels
++Carteolol (Cartrol).....	...Less bradycardia, same as Propranolol	-Treat xerostomia
+++Carvedilol (Coreg)*.....	...Dizziness, fatigue, hyperglycemia	-Carvedilol safer with epi because of alpha blocking effect
+++Labetalol (Trandate, Normodyne, G).....	...Orthostatic hypotension, same as Propranolol	
+Metoprolol (Lopressor, Toprol XL,G)...	...Same as Propranolol	
++Nadolol (Corgard,G).....	...Same as Propranolol	
+Nebivolol (Bystolic).....	...HA, dizziness, nausea, insomnia	
++Penbutolol (Levatol).....	...Less bradycardia, same as Propranolol	
++Pindolol (Visken, G).....	...Less bradycardia, same as Propranolol	
++Propranolol (Inderal, G).....	...Fatigue, bradycardia, GI, masks hypoglycemia, sudden withdrawal can lead to rebound hypertension, xerostomia	
++Sotalol (Betapace,G).....		
++Timolol (Blocadren, G).....	...Same as Propranolol	
+Selective (Primarily blocks beta-1 in the heart)	+++Non-selective beta and alpha-1 blocker	
++Non-selective (Blocks both beta-1 in the heart and beta-2 in the periphery)	* Indicated for mild to moderate CHF	

ALPHA-ADRENERGIC BLOCKERS		
Doxazosin (Cardura,G).....	...Dizziness, HA, weakness, edema	-Oral lichenoid lesion with Prazosin
Prazosin (Minipress, G).....	...Dizziness, Vertigo, palpitations, HA	-NSAIDs reduce effectiveness
Tamsulosin (Flomax,G)*.....	...Dizziness, HA	-Caution with position change
Terazosin (Hytrin, G)).....	...Drowsiness, dry mouth, fluid retention	
*only indication is BPH		

CENTRAL ANTI-ADRENERGIC DRUGS		
Clonidine (Catapres, G)..... (Catapress TTS;transdermal)	...Rebound hypertension, HA, arrhythmias after sudden withdrawal, dry mouth, sedation ...Milder than Clonidine	-Oral lesions with Methyldopa -Xerostomia worst with Clonidine but is common for all four
Guanabenz (Wytensin).....	...Milder than Clonidine	-Increased pressor response to epi with Methyldopa
Guanfacine (Tenex,Intuniv,g).....	...Sedation, orthostatic hypotension,	-NSAIDs reduce effectiveness
Methyldopa (Aldomet, G).....	bradycardia, GI, oral lichenoid lesions, dry mouth, salivary gland pain	-Caution with position change

Table A-2
ANGINA PECTORIS MEDICATIONS [Beta-Blockers, Calcium Channel blockers see table A-1]

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
NITRATES		
Nitroglycerin -sublingual (Nitrostat, Nitroquick, G) -translingual (Nitrolingual) -oral, SR (Nitro-Bid, G) -topical ointment (Nitrol, G) -transdermal(Transderm-Nitro,Nitro-dur, Minitran, Deponit, G) -transmucosal cr, Nitrogard Isosorbide Dinitrate (Isordil, G) Isosorbide Mononitrate (Ismo, Imdur, Monoket)	Dizziness, orthostatic hypotension, flushing, HA, palpitations. -Patients should respond to SL nitro very rapidly and should be seated in an upright position while awaiting effect. -BP should be monitored and oxygen may be supplied to the patient. Give second dose if inadequate response after 5 min.	-Short, midday appointments -Premedication for stress reduction with BZDP or nitrous oxide -Limit epi to 0.04mg/2 hour visit -Keep sublingual nitro or spray in office -Do angina history often -Max office dose of nitro is 2 tabs,do not give third tablet if systolic BP >90mmHg -Call 911 if chest pain not resolving after 10 minutes and 2 nitro tablets sublingually -Halitosis with Isosorbide Dinitrate

Table A-3
HEART FAILURE MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
FIRST LINE - ACE INHIBITOR	-orthostatic hypotension, increased K+	-watch for cough, orthostatic hypotension
FIRST LINE-BETA BLOCKER: carvedilol, bisoprolol, metoprolol succinate approved	-epinephrine dose limitation due to diagnosis of HF and carvedilol or metoprolol	-may need to limit epinephrine due to disease state or noncardioselective BB
FIRST LINE – DIURETIC – loops preferred	Electrolyte abnormalities	-may not resolve peripheral edema
SECOND LINE - ARB	Orthostatic hypotension	-well tolerated
SECOND LINE – ALDOSTERONE ANTAGONIST: Eplerenone or Spironolactone	Possible high potassium levels	-well tolerated
THIRD LINE – hydralazine or isosorbide	-HA, dizziness, orthostasis, halitosis	-indicates more severe heart failure
FOURTH LINE - digoxin	-anoxrexia,GI,HA,bradycardia,vision changes	-indicated more severe HF of arrhythmia

Table A-4
ANTIARRHYTHMIC MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
Amiodarone (Cordarone, Pacerone,G)	...Oral Ulcers, neuralgic pain,Pulmonary tox.	-Amiodarone interacts with Fentanyl causing hypotension, bradycardia
Digoxin (Lanoxin, G).....	...Anorexia, GI, HA, bradycardia	-Amiodarone may increase lidocaine levels
Disopyramide (Norpace, G).....	...Dry mouth, hypotension, GI, hypoglycemia	-Oral ulcers with procainamide
Dofetilide (Tikosyn).....	...HA, chest pain, dizziness, arrhythmias	-Xerostomia- worst with disopyramide
Encainide (Enkaid).....	...Bradycardia, dizziness, HA, GI	-Tikosyn levels increased by eryth/azoles
Flecainide (Tambocor,G).....	...Bradycardia, dizziness, HA, GI, neutropenia	-Oral bleeding due to blood dyscrasias
Mexiletine (Mexitil).....	...GI, fatigue, dizziness, tremor, blood dyscrasias	-Taste disturbances with Propafenone
Procainamide (Pronestyl, G).....	...Lupus-like syndrome, GI, hypotension, blood dyscrasias	-Local anesthetics increase CNS adverse effects of Propafenone
Propafenone (Rythmol,G).....	...Bradycardia, dizziness, GI, metallic taste	-Caution with position change/stress
		-Digoxin levels are increased by BZDP, Erythromycin, Tetracycline, Ibuprofen
Sotalol (Betapace,G).....	...QT,bradycardia,chest pain,fatigue	-Erythromycin increases disopyramide
Tocainide (Tonocard).....	...GI, paresthesias, dizziness, tremor, blood dyscrasias	levels with resultant arrhythmias
		-Mexiletine absorption decr. by narcotics

Table A-5
ANTIHYPERLIPIDEMIC MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
Atorvastatin (Lipitor,G).....	...GI, HA	-Absorption of APAP, Naproxen, Piroxicam
Cholestyramine (Questran).....	...GI, gingival bleeding, abnormal taste	reduced by Questran
Cholestipol (Cholestid).....	...GI, abnormal taste	-Most cause taste disturbances
Clofibrate (Atromid-S, G).....	...GI	
Ezetimibe (Zetia).....	...GI, HA, flatulence	-Gag reflex is increased with all agents
Fenofibrate (Tricor,G).....	...GI, rash	
Fluvastatin (Lescol,G).....	...Upper Resp Infect,HA,GI,arthropathy	-Simvastatin,Pravastatin,Atorvastatin and
Gemfibrozil (Lopid, G).....	...GI, abnormal taste	Fluvastatin interact with macrolides &
Lovastatin (Mevacor,G).....	...HA, GI, Abnormal taste	azole antifungals increasing risk of severe
Nicotinic Acid (Niacin, B_3).....	...Flushing, itching, GI	myopathy. Avoid this combination.
Pitavastatin (Livalo).....	...GI,muscle weakness,hypersensitivity	
Pravastatin (Pravachol,G).....	...GI, local muscle pain	-Colestipol reduces tetracycline levels
Rosuvastatin (Crestor).....	...GI, muscle weaknes, abnormal taste	
Simvastatin (Zocor,G).....	... HA, GI	-Cholestyramine dec. ASA, clinda, TCNs
Simvastatin/Ezetimibe (Vytorin)....	...GI, HA, Abnormal taste	

Table A-6
HEMOSTASIS MODIFIERS [# anti-platelet effect; @ anticoagulation effect] – SEE DENTAL MANAGEMENT GUIDE

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
Apixaban (Eliquis)@.....	...Major bleed 1.5-1.7%,easy bruising	-ASA, antibiotics, Metronidazole, Azole
Aspirin (G)#.....	...GI disturbances, GI bleeding, tinnitus	antifungals inc. bleeding with warfarin
Aspirin 25/Dipyridamole 200 ER (Aggrenox)#...	...GI, bleeding,dizziness,tinnitus	-Clopidogrel levels increased by NSAIDs
Clopidogrel (Plavix,G)#.....	...Dizziness, GI upset	-Ticagrelor/Rivaroxaban toxicity increased
Dabigatran Etexilate (Pradaxa)@.....	...GI bleeding, monitor with ECT or PTT	by 3A4 inhibitors such as macrolides
Prasugrel (Effient)#.....	...Hypertension,nosebleed,major bleed 2.2%	-DC Ticagrelor/Rivaroxaban 5d prior to
Rivaroxaban (Xarelto)@.....	...Major bleed 2-5%,syncope,stroke risk if d/c	major surgery but consult MD for dental
Ticagrelor (Brilinta)#.....	...Perisurgical bleeding may be prolonged	-Warfarin patients with INR 1.5 to 3.5 times
Warfarin (Coumadin,G)@.....	...GI bleeding, monitor with INR,may use Tranexamic 5% mouthrinse 10ml 2min prior to surgery and every 6 hours for 48 hours to promote fibrin clot formation	normal can be managed without dose change but confirm surgery day. -Consult MD before altering warfarin dose -AVOID NSAIDs WITH ANTICOAGULANTS

Table B-1
ANTIDEPRESSANT MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
TRICYCLIC ANTIDEPRESSANTS (TCAs)		
Amitriptyline (Elavil, G) 4+ Clomipramine (Anafranil,G) 3+ Desipramine (Norpramin, G) 1+ Doxepin (Sinequan, G) 2+ Imipramine (Tofranil, G) 2+ Nortriptyline (Pamelor, Aventyl, G)1-2+ Protriptyline (Vivactil) 3+	Sedation, dry mouth, orthostatic hypotension, tachycardia. Greater than 100mg daily of the first five listed TCAs poses an interaction threat with epi so limit to 2.5 carps/2h visit Greater than 50mg daily of nortriptyline poses epi interaction threat so limit to 2.5 carps/2h visit	-Epi interacts with high-dose TCA therapy -Additive CNS depression with opioids and anti-anxiety agents -TCAs cause most severe xerostomia -Record baseline and post-treatment BP if vasoconstrictor is used -Quinolone antibiotics with TCAs may produce arrhythmias
MISCELLANEOUS ANTIDEPRESSANTS		
Nefazodone (Serzone, g) 2-3+..... Trazodone (Desyrel, g) 1+..... Vilazodone (Viibryd) 1+.....	...risk of liver failure limits usefulness ...increases serotonin, used for insomnia ...SSRI/serotonin receptor agonist for MDD	-all increase CNS depression when combined with opioids
SELECTIVE NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs)		
Desvenlafaxine (Pristiq) 0+..... Duloxetine (Cymbalta,g) 0-1+..... Levomilnacipran (Fetzima) 0-1+..... Milnacipran (Savella) 0-1+..... Venlafaxine (Effexor,g) 0-1+.....	...Sedation, dizziness, less BP increase ....Nausea,dry mouth,constipation,fatigue ....Indicated for fibromyalgia only, nausea, fatigue,constipation,dizziness ....Dizziness, anxiety, tremor, BP increases	-Additive CNS depressant effects with Trazodone and opioids -Much less dry mouth than TCAs -Most likely to increase BP of all anti-depressants-dose related -Most likely antidepressant group to be used for neuropathic or chronic pain
SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs)		
Citalopram (Celexa,g) 0-1+..... Escitalopram (Lexapro,G) 0-1+..... Fluoxetine (Prozac, G) 0-1+..... Fluvoxamine (Luvox,g) 0-1+..... Paroxetine (Paxil,G) 0+..... Sertraline(Zoloft,G) 0+..... Vortioxetine (Brintellix) 0-1+.....	...Nausea, dry mouth, sedation, insomnia ...HA, insomnia, irritability ...Insomnia,anxiety,tremor,dry mouth ...Nausea, sedation, dry mouth,dizziness ...Insomnia, dizziness, HA, tremor, dry mouth, GI ...ALL SSRIs CAUSE BRUXISM!!	-macrolides and azole antifungals may increase Citalopram levels -Much less dry mouth than TCAs -Sertraline decreases diazepam clearance by 32% - Fluvoxamine increases BZDP levels,best TO AVOID COMBINATION. -Limit tramadol dosage due to possible serotonin syndrome
ALPHA-2 RECEPTOR ANTAGONIST		
Mirtazapine (Remeron,G) 2+.....	Drowsiness, dizziness, weight gain	BZDPs increase psychomotor impairment Minimal dry mouth, Minimal SSRI-type side effects
AMINOKETONE ANTIDEPRESSANTS		
Bupropion (Wellbutrin, Zyban,G) 2+.....	Seizures, agitation, insomnia, dry mouth	-Phenergan may lower seizure threshold
LITHIUM		
Lithium Carbonate (Eskalith, Lithane, Lithonate, G)	Tremor, GI, thirst, polyuria, edema, taste disturbances, abnormal facial movements	-Lithium levels are increased by NSAIDs Ibuprofen, Naproxen, and Piroxicam. Best to use Diflunisal or Sulindac
MONOAMINE OXIDASE INHIBITORS (MAOIs)		
Isocarboxazid (Marplan) 2+ Phenelzine (Nardil,G) 2+ Selegiline Transdermal (Emsam) 1-2+ Tranylcypromine (Parnate,G) 2+	Orthostatic hypotension, tachycardia, HA, restlessness,insomnia, dizziness, overstimulation including increased anxiety, agitation, and manic symptoms, dry mouth, Paresthesias, diarrhea ASK ABOUT DIETARY RESTRICTIONS	-Limit total epi dose to 0.04mg in MAOI patients and aspirate repeatedly -AVOID Meperidine and Fentanyl -AVOID decongestants (Sudafed, PPA) and amphetamines -Record baseline and post-treatment BP

Table B-2
ANTI-ANXIETY MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
BENZODIAZEPINES (BZDPs)		
Alprazolam (Xanax,G) Chlordiazepoxide (Librium, G) Clorazepate (Tranxene, G) Diazepam (Valium, G) Estazolam (ProSom) Lorazepam (Ativan, G) Oxazepam (Serax, G) Temazepam (Restoril, G) Triazolam (Halcion,G)	Drowsiness, ataxia, rebound insomnia, withdrawal symptoms (difficult with Alprazolam), dizziness	-CNS depressants are additive with BZDPs -BZDP effects increased by Erythromycin, Ketoconazole, OCs, Cimetidine, Propranolol, Metoprolol
OTHER ANTI-ANXIETY AGENTS		
Buspirone (Buspar,G)..... Diphenhydramine (Benadryl, G)..... Eszopiclone (Lunesta,g)..... Hydroxyzine (Atarax, Vistaril, G)..... Ramelteon (Rozerem)..... Zaleplon (Sonata,g)..... Zolpidem (Ambien,g,Intermezzo).....	...Dizziness, nausea, HA, nervousness ...Dry mouth, sedation, tachycardia ...HA, unpleasant taste, drowsiness ...Dry mouth, sedation, tachycardia ...dizziness, HA, sonmolence ...Dizziness, blurred vision, fatigue ...HA, sedation, myalgia, nausea	-Xerostomia can be very pronounced -CNS depressants are additive -Macrolides, azole antifungals and doxycycline increase Lunesta levels -Atropine potentiates anticholinergic effects of antihistamines -Macrolides and azole antifungals increase Sonata and Rozerem levels

Table B-3
ANTIPSYCHOTIC MEDICATIONS

CATEGORY		ADVERSE EFFECTS	TREATMENT IMPACT
PHENOTHIAZINES: ALIPHATIC			
Chlorpromazine (Thorazine, G) Promazine (Sparine)	2+ 3+	Drowsiness, dry mouth, orthostatic hypotension, movement disorders that can be both reversible and irreversible (tardive dyskinesia)	-CNS depressants potentiate these drugs in all cases, meperidine is worst -Epi effect may be decreased due to a weak alpha-blocking effect of some antipsychotics -Dental management of tardive dyskinesia takes pre-planning -Caution with position change -Xerostomia can be severe
PHENOTHIAZINES: PIPERIDINE			
Mesoridazine (Serentil) Thioridazine (Mellaril, G)	3+ 3+	Drowsiness, dry mouth, orthostatic hypotension, movement disorders	-Same as above
PHENOTHIAZINES: PIPERAZINE			
Fluphenazine (Prolixin,Permitil,G) Perphenazine (Trilafon, G) Prochlorperazine (Compazine, G) Trifluoperazine (Stelazine, G)	1+ 1+ 1+ 1+	-Same as above except little or no interaction with epi	
PHENOTHIAZINES: THIOXANTHENES			
Thiothixene (Navane, G)	1+	Movement disorders, dry mouth, drowsiness	-Llittle or no interaction with epi
BUTYROPHENONE			
Haloperidol (Haldol, G)	1+	Movement disorders, orthostatic hypotension, tardive dyskinesia	-Same as above except little or no interaction with epi
ATYPICAL OR SECOND GENERATION			
Aripiprazole (Abilify) Asenapine (Saphris) Clozapine (Clozaril, G) Iloperidone (Fanapt) Lurasidone (Latuda) Olanzepine (Zyprexa,G) Pimozide (Orap) Quetiapine (Seroquel,G) Risperidone (Risperdal,G) Ziprasidone (Geodon,G)	0-1+ 1+ 3+ 0-1+ 1+ 2+ 2+ 0-1+ 0-1+ 1+	..HA,agitation, anxiety, insomnia, weight gain ...sedation, EPS, loss of oral sensation ..Drowsiness, dizziness, salivation, dry mouth, md, aplastic anemia 1.3%, ...dizziness,sedation,weight gain ...nausea, sedation, movement disorders ..Weight gain, sedation good for refractory ..Movement disorders, drowsiness,dry mouth ..HA, drowsiness, dizziness ..HA, insomnia,agitation, weight gain, EPS ..HA, drowsiness, dizziness, weight gain	-Asenapine intx with fluoroquinolones -Clozapine with BZDP can produce resp. depression and hypotension -Lorazepam levels incr. by Quetiapine -Macrolides and azole antifungals intx with aripiprazole, iloperidone, lurasidone, pimozide and Quetiapine-increase antipsychotic levels -Clozapine may reduce effects of codeine, hydrocodone, oxycodone, tramadol

Table B-4
ANTICONVULSANT MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
Carbamazepine (Tegretol, Carbatrol, G).....	...Drowsiness, ataxia, severe blood dyscrasias	-CNS depressants will potentiate all drugs in this category -Possible bleeding with Valproate -Gingival overgrowth with Phenytoin -Erythromycin and propoxyphene increase Carbamazepine levels -Erythromycin increases Depakene levels -Low stress environment-consider sedative premedication (BZDP) -Take seizure control history often -Aspirin increases Depakene levels -Carbamazepine increases APAP liver toxicity, decreases APAP effect -Phenytoin may increase meperidine toxicity and decrease its effectiveness
Clonazepam (Klonopin, G).....	...Drowsiness, ataxia, behavior disorders	
Felbamate (Felbatol,G).....	...Aplastic anemia, liver failure, HA	
Gabapentin (Neurontin,G).....	...Dizziness, ataxia, fatigue, nystagmus	
Lamotrigine (Lamictal,G).....	...Dizziness, ataxia, HA, diplopia, rash	
Levetiracetam (Keppra,G).....	...Drowsiness, dizziness	
Oxcarbazepine (Trileptal).....	...Drowsiness, ataxia	
Phenobarbital (G).....	...Sedation, behavior disorders	
Pregabalin (Lyrica,G).....	...Drowsiness, dry mouth, peripheral edema	
Phenytoin (Dilantin, G).....	...Drowsiness, ataxia, gingival hyperplasia	
Sodium Valproate(Depakene, Depakote, G).	...GI, HA, ataxia, drowsiness, tremor, thrombocytopenia	
Tiagabine (Gabitril,G).....	...dizziness, HA, tremor, nervousness	
Topiramate (Topamax,G).....	...Drowsiness, dizziness, fatigue	
Zonisamide (Zonegran).....	...Drowsiness, dizziness, nausea	

Table B-5
ANTIPARKINSON'S DISEASE MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
DOPAMINERGIC AGENTS		
Amantadine (Symmetrel, G).....	...Nausea, Dizziness, insomnia, dry mouth	-Levodopa can increase effects of epi -Patient management is difficult due to movements and excess saliva -Macrolides increase Ropinirole
Bromocriptine (Parlodel).....	...Nausea, abnormal movements, dizziness, drowsiness	
Carbidopa/Levodopa (Sinemet/CR, G).....	...Movement disorders, GI, altered taste, excessive sallvation, bruxism	
Pergolide (Permax).....	...Nausea, abnormal movements, sedation, rhinitis	
Pramipexole (Mirapex).....	...hallucinations,nausea, dizziness, sedation, sudden sleep attacks	
Ropinirole (Requip,G).....	...syncope, nausea, dissiness, sedation	
ANTICHOLINERGICS		
Benztropine (Cogentin, G) Biperiden (Akineton) Trihexyphenidyl (Artane, G)	Drowsiness, dry mouth, tachycardia, confusion	-Xerostomia can be severe -CNS depressants have additive effect -Confusion is common
MISCELLANEOUS PARKINSON'S DISEASE AGENTS		
Rasagiline (Azilect,g).....	...arthralgias, depression, dyspepsia, falls	-rasagiline is a MAOI (type B) inhibitor so avoid antidepressants, cyclobenzaprine, dextromethorphan, fluoroquinolones, meperidine, pseudoephedrine, and some sympathomimetic amines. Limit epi dose to 0.04mg per 2 hour dental visit.
Selegiline (Eldepryl,G).....	...Nausea, dizziness, confusion, dry mouth	-Selegiline is a MAOI (type B) so avoid Meperidine, limit total epi dose to 0.04mg until this interaction is investigated -Limit epi with Comtan or Tasmar -Erythromycin may increase Comtan levels
Entacapone (Comtan,G).....	...diarrhea, avoid sudden d/c	
Tolcapone (Tasmar).....	...diarrhea, avoid sudden d/c	

Table B-6
ADD/ADHD MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
CNS STIMULANTS		
Atomoxetine (Strattera) Methylphenidate (Concerta, Metadate CR/ED, Ritalin, Ritalin-SR, G) Dexmethylphenidate (Focalin, G) Dextroamphetamine (Dexedrine, G) Lisdexamfetamine (Vyvanse) Amphetamine mixtures (Adderall,G)	GI,anorexia, dizziness, mood swings, no abuse May cause seizures, nervousness, insomnia, dizziness, HA, dyskinesia, tachycardia, anorexia Dex- dry mouth, dysgeusia, no seizure increase Prodrug of dextroamphetamine-less abuse potential but still Schedule II CS Amphet-dry mouth dyskinetic movements, increased BP, pulse	1. Meth, Amphet and Dex interact with MAOIs and furazolidine 2. Dex and Amphet interact with TCAs-decreased dex or amphet effects 3. Low stress environment 4. Monitor BP and pulse 5. Possible caries increased 6. Fluoxetine and Paroxetine will increase levels of atomoxetine (Strattera)

Table C-1
SEX HORMONES

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
ORAL CONTRACEPTIVES (OCs)		
(Lo-Ovral, Ortho Novum, Brevicon, Modicon, Norinyl, Genora, Tri-levlen, etc.) Seasonale is a combination OC with only four menstrual periods per year	...Nausea, HA, edema, weight gain, intraoral soft tissue changes (gingivitis) *[if dental antibiotics are taken for 48 hours or more, advise additional barrer contraception for the remainder of the pill pak.]*	-Progestin causes increased inflammatory response to plaque -Increased dry socket for 21/28 days -OC effect decreased by Ampicillin/Amoxicillin/Tetracyclines -BZDP will have longer activity with OCs -Oral mucosa is more resistant to trauma
HORMONE REPLACEMENT THERAPY (HRT)		
Conjugated Estrogens, equine (Premarin, G) Conjugated Estrogens, synthetic (Cenestin) Esterified Estrogens (Estratab, Menest) Estradiol (Estrace) transdermal (Alora, Climara, Estraderm, Fem Patch, Vivelle-Dot) Estropipate (Ogen, Ortho-est, G) Ethinyl Estradiol (Estinyl) Conjugated Estrogens + Progestin (Prempro) Esterified Estrogens plus methyltestosterone (Estratest, Estratest H.S.)	Edema, HA, melasma, nausea, increased risk of thromboembolic episode Testosterone may suppress production of Clotting factors, hirsutism, hair loss	-Oral mucosa is more resistant to ulceration -Bone density is increased

Table C-2
ORAL ANTIDIABETIC MEDICATIONS – SEE DENTAL MANAGEMENT GUIDE

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
BIGUANIDES		
Metformin (Glucophage, G) ..... Metformin/glipizide (Metaglip) ..... Metformin/glyburide (Glucovance) ..... Metformin/pioglitazone (Actoplus Met) ..... Metformin/rosiglitazone (Avandamet)	-Diarrhea,bloating, Vit B-12 malabsorp, taste -Hypoglycemia, GI -Hypoglycemia, GI -GI, URI, HA, sinusitis, bloating, taste -GI, URI, HA, edema, bloating, taste disturb. -Hypoglycemia, HA	- Metformin with prednisone may cause lactic acidosis -possible hypoglycemia with Metaglip and Glucovance combination drugs
SECOND GENERATION SULFONYLUREAS (SU)		
Glimepride (Amaryl, g) Glipizide (Glucotrol,XL,G) Glyburide Micronase,Glynase PresTab, G)	Hypoglycemia, GI, weight gain	-NSAIDs and high-dose Salicylates (aspirin) increase hypoglycemia with all agents -Precautions about preventing hypoglycemia -Altered host resistance in poor control
ALPHA-GLUCOSIDASE INHIBITORS		
Acarbose (Precose) Miglitol (Glyset)	GI, flatulence, diarrhea Flatulence, diarrhea	-no hypoglycemia as single agents
THIAZOLIDINEDIONES ("GLITAZONES")		
Pioglitazone (Actos,G) Rosiglitazone (Avandia)	URI, HA, sinusitis URI, HA, edema	-macrolides and azole antifungals inc. levels -no hypoglycemia as single agent
DIPEPTIDYL PEPTIDASE (DPP-4) INHIBITORS		
Alogliptin (Nesina)..... Linagliptin (Tradjenta)..... Saxagliptin (Onglyza)..... Sitagliptin (Januvia)	-nasopharyngitis,HA,URI -hypoglycemia, nasopharyngitis, GI -hypoglycemia, HA, peripheral edema -hypoglycemia, GI	-acute pancreatitis and hepatic toxicity have been seen with all DPP-4 inhibitors -DPP-4 inhibitors may cause hypersensitivity reactions including rash and angioedema
INCRETIN MIMETICS		
Exenatide (Byetta) ..... Liraglutide (Victoza).....	-acute pancreatitis, nausea, hypoglycemia -possible thyroid C-cell tumor risk, GI,HA, hypoglycemia	-Both reduce APAP levels so give APAP 1 hour prior to injection; Also, Give oral antibiotics 1 hour prior to either injection
MEGLITINIDES		
Nateglinide (Starlix,g)..... Repaglinide (Prandin,g).....	-low risk of hypoglycemia with both agents -HA, URI	-macrolides and azoles may increase Repaglinide levels.

Table C-3
INSULINS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
RAPID AND SHORT-ACTING		
Humalog,Novolog,Apidra – rapid acting Humulin R,Novolin R – short acting regular	-onset 15-30 minutes, duration 3-5 hours -onset 30-60minutes, duration 6-10 hours	-peak effect 30min to 1 hour -peak effect 1-4 hours
INTERMEDIATE ACTING		
Humulin N, Novolin N (i.e. NPH)	-onset 1-2 hours -duration is up to 24 hours	-peak effect 6-14 hours -peak effect 4-12 hours
LONG-ACTING		
Lantus (insulin glargine) Levemir (insulin detemir)	-onset 1.1 hours, duration 24 hours -onset 1.1-2 hours, duration 24 hours	-NO SIGNIFICANT PEAK -NO SIGNIFICANT PEAK

Table C-4
CORTICOSTEROID MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
SHORT-ACTING		
Hydrocortisone (Cortef, G)	Fluid retention (can be significant), insomnia, weight gain, adrenal suppression, increased risk of infection, poor wound healing, hypertension, K+ loss, osteoporosis, peptic ulcer formation, growth suppression in children, increased friability of oral soft tissue Diabetes may be unmasked and predominant patient mood will be intensified. Insomnia, nervousness, tachycardia and tremor can be seen with moderate to high daily doses.	-"Window of vulnerability" is hydrocortisone 20mg-60mg daily or prednisone 5-15mg/day for greater than 21 continuous days. Additional steroids may be needed to supplement the adrenal suppressed patient during acute periods of stress -Take extra precautions against viral or bacterial infection -Watch for signs or symptoms of oral yeast infections -Avoid Salicylates such as aspirin
INTERMEDIATE-ACTING		
Prednisone (Deltasone, G) Prednisolone (Delta-Cortef, G) Triamcinolone (Kenalog, G) Methylprednisolone (Medrol, G)	Same as above, but fluid retention only with high doses of these synthetic agents	-Same as above -Erythromycin inhibits metabolism of Methylprednisolone
LONG-ACTING		
Dexamethasone (Decadron, G) Betamethasone (Celestone, G)	Same as above, but fluid retention only with high doses of these synthetic agents	-acute perioperative use in oral surgery doesn't increase post-op complications

Table C-5
OSTEOPOROSIS MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
Calcitonin-salmon nasal spray (Miacalcin)	Rhinitis, nausea, salty taste, dry mouth	-local irritation or oropharynx is possible
BISPHOSPHONATES (oral and/or injectable) -Alendronate (Fosamax oral,G-daily,weekly) -Ibandronate (Boniva ,G-also by injection q 3mo but injection is not generic yet) -Pamidronate (Aredia) – injection only -Risedronate (Actonel oral -daily, weekly) -Zoledronic Acid (Zometa, Reclast)-injection only-once yearly for osteoporosis is Reclast	Pain, GI, HA,possibility of osteonecrosis of the jaw (ONJ), Zometa and Aredia are injectable bisphosphonates for cancer chemo hypercalcemia with much higher risk of ONJ than oral agents. Reclast is a once yearly dose of zoledronic acid and is also associated with increased risk of ONJ post alveolar bone trauma.	Must be taken with 8oz. of water first thing in the AM. No other medications within 30 minutes of all "dronates". ONJ- Minimize trauma, possibly avoid implants, early recognition of painful extraction site lesions, AVOID DEBRIDEMENT!!! -Print patient information sheet from the ADA website "For the Dental Patient" under the title "Bisphosphonate Medications"
-Denosumab (Prolia Injection).....	..Likely to have same risk of ONJ!	..Indicates intolerance to bisphosphonates
Raloxifene (Evista) selective estrogen receptor modulator which decreases breast Cancer risk	..Hot flashes, leg cramps	Increased raloxifene with NSAID's and BZDPs
Teriparatide (Forteo) biosynthetic human parathyroid hormone by SC injection only	..Orthostatic hypotension, dizziness	Increased risk of osteosarcoma in rats using 3-20x human dosages, increased serum calcium levels possible

Table D
RESPIRATORY SYSTEM MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
ANTIHISTAMINES		
Azatadine (Optimine, Trinalin) Azelastine (Inhaled) (Astelin,G) Brompheniramine (Dimetane, G) Carbinoxamine (Clistin) Cetirizine (Zyrtec, OTC, G) Chlorpheniramine (Chlor-Trimeton, G) Clemastine (Tavist, G) Cyproheptadine (Periactin, G) Desloratidine (Clarinex,G) Diphenhydramine (Benadryl, G) Fexofenadine (Allegra, Allegra OTC,G) Hydroxyzine (Atarax, Vistaril, G) Loratidine (Claritin, G, OTC) Triprolidine (Actifed, G)	Drowsiness, dry mouth, palpitations, thickening of bronchial secretions with traditional antihistamines such as chlorpheniramine,diphenhydramine, hydroxyzine and triprolidine (Cetirizine, Fexofenadine and Loratidine have limited anticholinergic side effects.)	-Dry mouth can be significant with diphenhydramine and hydroxyzine -CNS depressants have additive effects with diphenhydramine and hydroxyzine -Oral lesions with Triprolidine
SYMPATHOMIMETIC BRONCHODILATORS		
<u>INHALERS</u> Albuterol (Proventil, Ventolin, G) Arformoterol (Brovana) - LA Bitolterol (Tornalate) Formoterol (Foradil) - LA Indacaterol (Arcapta Neohaler - LA Levalbuterol (Xopenex) Metaproterenol (Metaprel, Alupent, G) Pirbuterol (Maxair) Salmeterol (Serevent,Advair Diskus) - LA Terbutaline (Brethaire)	Tremor, tachycardia, bad taste, oral irritation -long acting (LA) beta agonist for COPD and can exacerbate acute bronchospasm during an asthma attack Headache due to its long action	-Inhaler use just prior to dental treatment may prevent asthma during the appointment. (Don't use LA beta agonist inhaler or corticosteroid inhaler.) -Dental office should have Albuterol inhaler available for patients
<u>SYSTEMIC TABLETS</u> Albuterol (Proventil, Ventolin, G) Metaproterenol (Metaprel, Alupent) Terbutaline (Brethine)	Tremor,tachycardia, insomnia, irritability, dry mouth	-Dry mouth can be significant
XANTHINE BRONCHODILATORS		
Theophylline Bead-filled caps (Slo-Bid, Slo-Phylline, etc.) Theophylline SR tablets (Theolair-SR, Constant-T, G, etc.)	Nausea, HA, tachycardia, insomnia, tremor, irritability because caffeine derivative	-Used mostly as chronic medication -Ketoconazole decreases Theophylline l -Erythromycin increases Theophylline
CORTICOSTEROID RESPIRATORY AGENTS		
<u>INHALERS</u> Beclomethasone (Vanceril, Vancenase/AQ DS, Beclovent, Beconase/AQ) Budesonide (Rhinocort, Pulmicort,g) Flunisolide (AeroBid, Nasalide, Naserel) Fluticasone (Flonase, Flovent,Advair Diskus) Triamcinolone (Azmacort, Nasacort/AQ)	Soft palate irritation, atrophic candida on the soft palate or buccal mucosa	-Check often for palatal candida infection -Recommend an inhaler adapter to prevent atrophic candida -Rinse with water after each use.
<u>SYSTEMIC TABLETS</u> (see Corticosteroid Table C-4)		
MISCELLANEOUS RESPIRATORY AGENTS		
Cromolyn (Intal, Nasalcrom, Gastrocom)..... Ipratropium (Atrovent,G)..... Ipratropium/Albuterol (Combivent)..... Nedocromil (Tilade).....	...Throat irritation, cough ...HA, dry oropharynx ...Tremor, throat irritation ...Bad taste, cough	-All are for chronic therapy only -Ipratropium is used for COPD -Ipratropium now for short-term rhinitis in 5yo and up
LEUKOTRIENE RECEPTOR ANTAGONISTS		
Montelukast (Singulair,G) Zafirlukast (Accolate) Zileuton (Zyflo)	-HA, pharyngitis, cough -HA, lethargy, rare vasculitis -rare hepatic toxicity	-Phenobarb dec. montelukast levels -Zafirlukast levels dec. by 40% with erythromycin -Zafirlukast levels inc. by 45% with Aspirin

Table E
GASTROINTESTINAL MEDICATIONS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
ANTICHOLINERGICS/ANTISPASMODICS		
Clidinium Br (Quarzan) Dicyclomine (Bentyl, G) Glycopyrrolate (Robinul) Oxybutynin (Ditropan) Propantheline Br (Pro-Banthine, G)	Dry mouth, altered taste, dysphagia, palpitations, drowsiness, excitement	-Dry mouth can be very significant -CNS drugs can have additive effects -Some are used to decrease saliva flow during dental visits
H_2 ANTAGONISTS		
Cimetidine (Tagamet,HB=OTC,G) Famotidine (Mylanta AR, Pepcid,AC=OTC) Nizatidine (Axid,AC=OTC) Ranitidine (Zantac,EFFER,GEL, 75mg and 150mg =OTC)	HA, fatigue, thrombocytopenia, rarely erythema multiforme	-Cimetidine decreases clearance of BZDPs, Lidocaine, Carbamazepine, Metronidazole -All H_2 agents decrease absorption of Ketoconazole, but not Fluconazole
PROSTAGLANDIN E-2 ANALOGUE		
MISOPROSTOL (Cytotec)	Abortifacient, diarrhea	-Patient at high risk for GI ulcers so avoid aspirin and NSAIDs
PROTON PUMP INHIBITORS		
Dexlansoprazole (Dexilant) Esomeprazole (Nexium) Lansoprazole (Prevacid,G) Omeprazole (Prilosec, G, OTC) Pantoprazole (Protonix) Rabeprazole (Aciphex)	Diarrhea, abdominal pain, nausea HA, GI including diarrhea HA, GI including diarrhea HA, GI, myalgias HA, GI, hyperglycemia HA, dizziness, infection	-BZDP levels increased,fluconazole increases dexlansoprazole levels -Clarithromycin increases omeprazole -Omeprazole & rabeprazole increase half-life of diazepam and triazolam -All decrease ketoconazole absorption
GASTROINTESTINAL PROKINETIC AGENTS		
Metoclopramide (Reglan,G)	..Fatigue,drowsiness,movement disorders ..HA, diarrhea, abdominal pain	-Narcotics antagonize metoclopramide -CNS depressants can add to drowsiness with Metoclopramide

Table F
IMMUNOMODULATORS AND BIOLOGICS

CATEGORY	ADVERSE EFFECTS	TREATMENT IMPACT
HYDROXYCHLOROQUINE (Plaquenil, G)	Eye toxicity, oral lichenoid lesions, pigmentation or oral mucosa	Oral melanosis or ulcerative lesions
SULFASALAZINE (Azulfidine, G)	GI, HA, fever, blood dyscrasias	-Antibiotics may interfere with effects
TISSUE NECROSIS FACTOR INHIBITORS AND BIOLOGICS		
Adalimumab (Humira) TNF	..URI, UTI, oral thrush, ulcerative stomatitis	-All drugs in this category cause oral ulcerations and increased infections -Compromised host defense mechanisms indicate need to minimize infection risk -Cyclosporine gingival overgrowth is dose related and occurs in 5-16% -Cyclosporine levels increased with Erythro, Ketoconazole, Fluconazole -NSAIDs increase renal toxicity of Cyc -NSAID levels increased by Arava -NSAIDs increase Methotrexate levels
Anakinra (Kineret) IL-1 inhibitor	..Neutropenia, URI, UTI, Oral Thrush	
Azathioprine(Azasan,Imuran,g)	...Nausea, vomiting, bone marrow suppression	
Certilizumab (Cimzia) TNF	...URI,UTI, arthralgia,rash,increased CA risk?	
Cyclophosphamide (Cytoxan,g)	...Alopecia, bone marrow suppression, sterility	
Cyclosporine (Sandimmune, Neoral,g)	...Renal dysfunction, hypertension, hirsutism, tremor, gingival overgrowth	
Etanercept (Enbrel) TNF	...URI, HA, other infections, increase CA risk?	
Golimumab (Simponi) TNF	...URI,Herpes, blood dyscrasias	
Infliximab (Remicade) TNF	...URI, UTI, Oral Thrush, increased cancers	
Leflunomide (Arava)	...diarrhea, alopecia, URI	
Methotrexate (Rheumatrex, G)	...GI ulceration, bone marrow suppression	

Rituximab (Rituxan) B cell depleter	...URI, nasopharyngitis, bronchitis	
Tacrolimus (Prograf,G).....	...CNS Stimulation, Renal Dysfunction, blood dyscrasias, metabolic disorders	-Macrolides and azole antifungals may increase tacrolimus levels
Tocilizumab (Actemra) IL-6 inhibitor	...URI,nasopharyngitis,HA,hypertension	

Table G

CANCER CHEMOTHERAPY AGENTS

Markedly mucotoxic agents		
Actinomycin D	Daunorubicin	Methotrexate
Amasacrin	Docetaxel	Mitoxantrone
Bleomycin	Doxorubicin	Pilcamycin
Chlorambucil	Etoposide	Thioguanine
Cisplatin	Floxuridine	Vinblastine
Cytarabine	5-Flourouracil	Vindesine
Mucotoxic agents		
Carboplatin	Idarubicin	Paclitaxel
Carmustine	Ifosfamide	Procarbazine
Cyclophosphamide	Irinotecan	Dacarbazine
Lomustine	Thiotepa	Dactinomycin
Mechlorethamine	Topotecan	Interferons
Epirubicin	Melphalan	Vincristine
Mercaptopurine	Vinorelbine	Hydroxyurea
Fludarabine	Mithramycin	Interleukin-2
Gemcitabine	Mitomycin	

Reference Card From the

Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7)

EVALUATION

Classification of Blood Pressure (BP)*

Category	SBP mmHg		DBP mmHg
Normal	<120	and	<80
Prehypertension	120–139	or	80–89
Hypertension, Stage 1	140–159	or	90–99
Hypertension, Stage 2	≥160	or	≥100

* See *Blood Pressure Measurement Techniques* (reverse side)
Key: SBP = systolic blood pressure DBP = diastolic blood pressure

Diagnostic Workup of Hypertension

- Assess risk factors and comorbidities.
- Reveal identifiable causes of hypertension.
- Assess presence of target organ damage.
- Conduct history and physical examination.
- Obtain laboratory tests: urinalysis, blood glucose, hematocrit and lipid panel, serum potassium, creatinine, and calcium. Optional: urinary albumin/creatinine ratio.
- Obtain electrocardiogram.

Assess for Major Cardiovascular Disease (CVD) Risk Factors

- Hypertension
- Obesity (body mass index ≥30 kg/m^2)
- Dyslipidemia
- Diabetes mellitus
- Cigarette smoking
- Physical inactivity
- Microalbuminuria, estimated glomerular filtration rate <60 mL/min
- Age (>55 for men, >65 for women)
- Family history of premature CVD (men age <55, women age <65)

Assess for Identifiable Causes of Hypertension

- Sleep apnea
- Drug induced/related
- Chronic kidney disease
- Primary aldosteronism
- Renovascular disease
- Cushing's syndrome or steroid therapy
- Pheochromocytoma
- Coarctation of aorta
- Thyroid/parathyroid disease

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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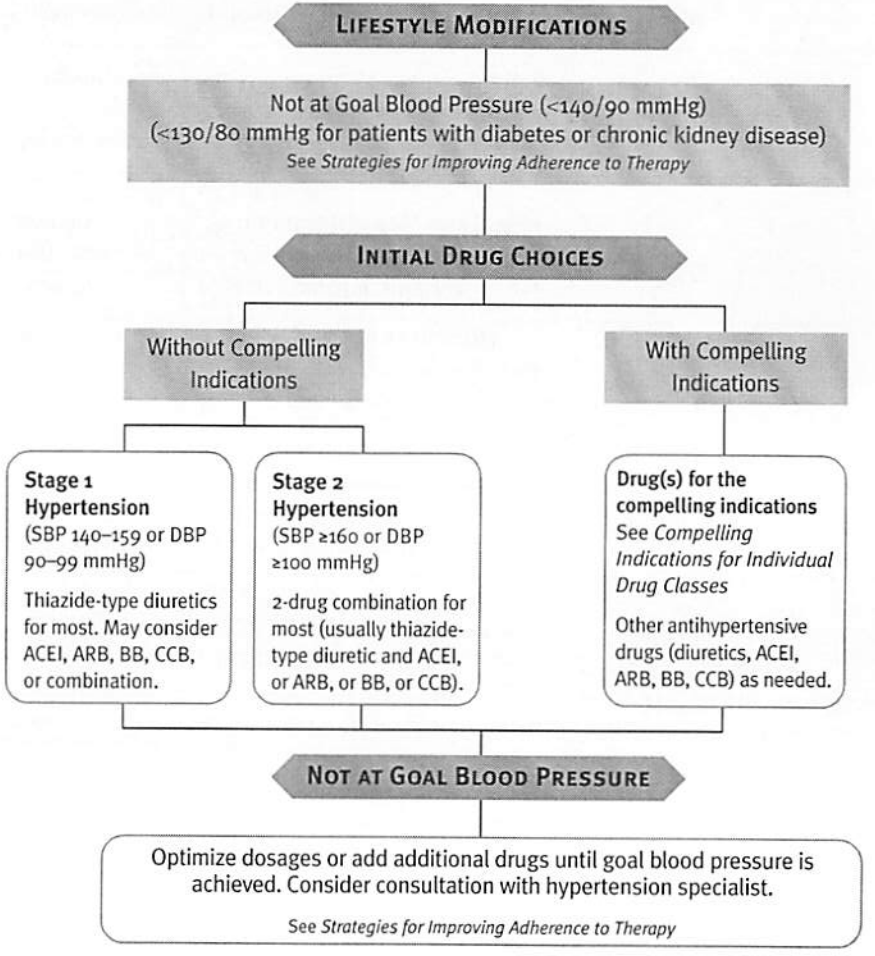
TREATMENT

Principles of Hypertension Treatment

- Treat to BP <140/90 mmHg or BP <130/80 mmHg in patients with diabetes or chronic kidney disease.
- Majority of patients will require two medications to reach goal.

Algorithm for Treatment of Hypertension



Blood Pressure Measurement Techniques

Method	Notes
In-office	Two readings, 5 minutes apart, sitting in chair. Confirm elevated reading in contralateral arm.
Ambulatory BP monitoring	Indicated for evaluation of "white coat hypertension." Absence of 10–20 percent BP decrease during sleep may indicate increased CVD risk.
Patient self-check	Provides information on response to therapy. May help improve adherence to therapy and is useful for evaluating "white coat hypertension."

Causes of Resistant Hypertension

- Improper BP measurement
- Excess sodium intake
- Inadequate diuretic therapy
- Medication
  - Inadequate doses
  - Drug actions and interactions (e.g., nonsteroidal anti-inflammatory drugs (NSAIDs), illicit drugs, sympathomimetics, oral contraceptives)
  - Over-the-counter (OTC) drugs and herbal supplements
- Excess alcohol intake
- Identifiable causes of hypertension (see reverse side)

Compelling Indications for Individual Drug Classes

Compelling Indication	Initial Therapy Options
• Heart failure	THIAZ, BB, ACEI, ARB, ALDO ANT
• Post myocardial infarction	BB, ACEI, ALDO ANT
• High CVD risk	THIAZ, BB, ACEI, CCB
• Diabetes	THIAZ, BB, ACEI, ARB, CCB
• Chronic kidney disease	ACEI, ARB
• Recurrent stroke prevention	THIAZ, ACEI

Key: THIAZ = thiazide diuretic, ACEI= angiotensin converting enzyme inhibitor, ARB = angiotensin receptor blocker, BB = beta blocker, CCB = calcium channel blocker, ALDO ANT = aldosterone antagonist

Strategies for Improving Adherence to Therapy

- Clinician empathy increases patient trust, motivation, and adherence to therapy.
- Physicians should consider their patients' cultural beliefs and individual attitudes in formulating therapy.

The National High Blood Pressure Education Program is coordinated by the National Heart, Lung, and Blood Institute (NHLBI) at the National Institutes of Health. Copies of the JNC 7 Report are available on the NHLBI Web site at **http://www.nhlbi.nih.gov** or from the NHLBI Health Information Center, P.O. Box 30105, Bethesda, MD 20824-0105; Phone: 301-592-8573 or 240-629-3255 (TTY); Fax: 301-592-8563.

Principles of Lifestyle Modification

- Encourage healthy lifestyles for all individuals.
- Prescribe lifestyle modifications for all patients with prehypertension and hypertension.
- Components of lifestyle modifications include weight reduction, DASH eating plan, dietary sodium reduction, aerobic physical activity, and moderation of alcohol consumption.

Lifestyle Modification Recommendations

Modification	Recommendation	Avg. SBP Reduction Range†
Weight reduction	Maintain normal body weight (body mass index 18.5–24.9 kg/m^2).	5–20 mmHg/10 kg
DASH eating plan	Adopt a diet rich in fruits, vegetables, and lowfat dairy products with reduced content of saturated and total fat.	8–14 mmHg
Dietary sodium reduction	Reduce dietary sodium intake to ≤100 mmol per day (2.4 g sodium or 6 g sodium chloride).	2–8 mmHg
Aerobic physical activity	Regular aerobic physical activity (e.g., brisk walking) at least 30 minutes per day, most days of the week.	4–9 mmHg
Moderation of alcohol consumption	Men: limit to ≤2 drinks* per day. Women and lighter weight persons: limit to ≤1 drink* per day.	2–4 mmHg

* 1 drink = 1/2 oz or 15 mL ethanol (e.g., 12 oz beer, 5 oz wine, 1.5 oz 80-proof whiskey).

† Effects are dose and time dependent.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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DENTAL MANAGEMENT GUIDE FOR HYPERTENSION

TABLE 4 – DENTAL TREATMENT RECOMMENDATIONS ACCORDING TO THE MEASUREMENT OF HIGH BLOOD PRESSURE

Dental treatment Recommendations According to the Measurement of High Blood Pressure			
SBP	DBP	ORF	Recommendations
120-139	80-89	Yes/No	Routine dental care OK; discuss BP guidelines
140-159	90-99	Yes/No	Routine dental care OK; consider stress reduction, refer for medical consult
160-179	100-109	No	Routine dental care OK; consider stress reduction, refer for medical consult
160-179	100-109	Yes	Urgent dental care OK; consider stress reduction, refer for medical consult
180-209	110-119	No	No dental treatment without medical consult; refer for prompt medical consult
180-209	110-119	Yes	No dental treatment; refer for emergency medical treatment
>210	>120	Yes/No	No dental treatment; refer for emergency medical treatment
Other Risk Factors: History of myocardial infarction, angina pectoris, high coronary disease risk, recurrent stroke, diabetes mellitus, renal disease			
(Adapted from Yagiela et al[10]; Merin et al[11]; Herman et al)[12]			

DENTAL MANAGEMENT GUIDE FOR ANTICOAGULANTS

Table II. Summary of the management of dental patients taking oral anticoagulants

	Warfarin	*Dabigatran*	*Rivaroxaban*
Best laboratory test(s) to assess drug's effect on hemostasis	PT/INR	ECT, TT, aPTT	Anti-factor Xa assay (preferred) PT/INR and/or aPTT*
Guidelines for the management of dental procedures that involve bleeding, (including most uncomplicated tooth extractions)	Patients who require oral surgery or dental treatment likely to cause bleeding (including uncomplicated tooth extractions) typically do not require alteration of their warfarin therapy regimen unless their INR is greater than an upper limit range of 3.5-4.0, provided that adjunctive local hemostatic measures† are used when indicated[33-40]	It does not appear that it is necessary to discontinue the use of dabigatran in patients with normal renal function and without other risks for impaired hemostasis, especially if adjunctive local hemostatic measures† are used when indicated	It does not appear that it is necessary to discontinue the use of rivaroxaban in patients with normal renal function and without other risks for impaired hemostasis, especially if adjunctive local hemostatic measures† are used when indicated
Guidelines for the management of oral/maxillofacial surgery procedures with concerns of possible complications resulting from excessive bleeding and/or impaired hemostasis	Discontinue warfarin typically 2-3 d before surgery~	Discontinue dabigatran ≥24 h before surgery, or longer depending on the presence and degree of renal impairment and bleeding risk (see Table III)	Discontinue rivaroxaban ≥24 h prior to surgery, or longer depending on the presence and degree of renal impairment and bleeding risk
Antidote/reversal agent available	Yes (vitamin K)	No	No

aPTT, activated partial thromboplastin time; *ECT*, ecarin clotting time; *PT/INR*, prothrombin time/international normalized ratio; *TT*, thrombin time.

*Although rivaroxaban may slightly prolong PT/INR and aPTT, it does not appear that these tests would be clinically useful in assessing the anticoagulant effect produced by the drug.

†Adjunctive local hemostatic measures include absorbable gelatin or oxidized cellulose sponges, sutures, local pressure (with sterile gauze pads moistened with water, normal saline, or 5% tranexamic acid solution).

Drug Interactions Important in Clinical Dentistry

DENTAL DRUG	INTERACTING DRUG	RESULT/MANAGEMENT
ANTIBIOTICS		
Penicillins		
All Penicillins	Bacteriostatic antibiotics (clindamycin, erythromycin, tetracyclines)	Static agent may impair action of penicillins. Consult with other prescriber for modification.
Rare decrease in OC effectiveness with >48 hour s of antibiotic therapy. Recommend additional barrier contraception for the remainder of the Pill pak.	Methotrexate (Rheumatrex, g)	High dose penicillins may decease MTX secretion. Monitor MTX.
	Oral contraceptives	Rare decrease in estrogen effect. Use barrier contraception for duration of pill cycle.
	Probenecid (Benemid, g)	Tubular secretion of penicillins may be decreased. Usually not problematic.
Ampicillin	Allopurinol (Zyloprim, g)	Doubling in rate of ampicillin rash with concurrent administration (14-22%)
	Atenolol (Tenormin, g)	Atenolol bioavailability may be reduced.
Cephalosporins		
All Agents	Anticoagulants (Coumadin, g)	Risk of bleeding disorders might be increased in anticoagulated patients. Use cautiously.
	Bacteriostatic antibiotics (clindamycin, erythromycin, tetracyclines)	Static agent may impair action of cephalosporins. Consult with other practitioner for modification.
	Probenecid (Benemid, g)	Tubular secretion of penicillins may be decreased. Usually not problematic.
Cefdinir (Omnicef) Cefpodoxime (Vantin) Cefuroxime (Ceftin)	Increased gastric Ph. (Antacids, Axid, Pepcid, Prilosec, Tagamet, Zantac)	Reduced absorption of the cephalosporins. AVOID CONCURRENT USE.
Lincomycins		
Clindamycin (Cleocin, g)	Erythromycin	Possibility of antagonism. AVOID CONCURRENT USE.
	Kaolin-Pectin	Delay in clindamycin absorption with concurrent use.
	Succinylcholine (Anectine)	Possibility of prolonged respiratory depression. Monitor patient.
Macrolides	Alfentanil	Alfentanil actions increased. Use caution.
dirithromycin (Dynabac)	Anticoagulants (Coumadin, g)	Risk of bleeding disorders is increased in anticoagulated patients. Monitor pt.
clarithromycin (Biaxin, Biaxin XL, g) erythromycin (base, EC, EES, PCE)	Benzodiazepines (alprazolam, diazepam, triazolam)	Increased benzodiazepine levels resulting in CNS depression. Avoid combination in elderly.
	Bromocriptine (Parlodel)	Increase in bromocriptine toxic effects. Consult MD.
	CCBs (diltiazem (Cardizem,g) and verapamil (Isoptin, Calan, Verelan,g)	QT interval prolongation, sudden death, AVOID CONCURRENT USE
	Carbamazepine (Tegretol, g)	Increased carbamazepine levels. Avoid concurrent use. Azithromycin is okay.
	Clindamycin	Possible antagonism. AVOID COMBINATION.
	Cyclosporine (Sandimmune, Neoral)	Increased cyclosporine renal toxicity. Consult MD.
	Digoxin	Increased digoxin levels in 10% of patients. May use cautiously.
	Disopyramide (Norpace, g)	Increased disopyramide levels may cause arrhythmias. Use cautiously.

Macrolides All Agents (cont.)	Ergotamine	Acute ergotamine toxicity. Use cautiously
	Methylprednisolone	Steroid clearance may be decreased. Caution.
	Omeprazole (Prilosec)	Avoid Clarithromycin with Prilosec
	Penicillins	possible antagonism. Avoid static with cidal
	Pimozide (Orap)	Avoid all macrolides-risk of sudden death
	Terfenadine (not available in the U.S. but still available in other countries)	Increased terfenadine levels resulting in serious cardiac arrhythmias. AVOID CONCURRENT USE.
	"Statins" (Lipitor,Zocor, Mevacor)	Increased statin levels with possible muscle toxicity. AVOID CONCURRENT USE
	Theophyllines	Increased theophylline levels (20-25%). Decreased erythromycin levels may also occur. AVOID CONCURRENT USE if possible. SBE prophylaxis should not cause problems.
	Tolterodine (Detrol)	Increased Detrol effects causing arrhythmias
Metronidazole (Flagyl, Flagyl ER, Prostat, g)	Anticoagulants (Coumadin)	Risk of bleeding disorders is increased in anticoagulated patients. Consult MD.
	Barbiturates	Decreased metro. Levels. Increase dose.
	Cholestyramine (Questran, g)	Reduced absorption of metronidazole
	Cimetidine (Tagamet, g)	Metronidazole levels may increase. Not sig.
	Disulfuram (Antabuse)	Concurrent use may result in acute psychosis or confusion.
	Ethanol (IV diazepam, IV TMP-SMZ)	Risk of disulfuram-type reaction. AVOID CONCURRENT USE.
	Lithium	Increased lithium levels with possible toxicity. Consult MD.
	Phenytoin (Dilantin)	Eff. of phenytoin may be incr. Monitor closely.
	Quinidine	Increased Quinidine levels. Monitor closely.
	Tacrolimus (Prograf)	Metronidazole doubles Prograf levels
Tetracyclines		
All Agents (doxycycline, minocycline, tetracycline)	Antacids containing Al, calcium, magnesium	Reduced serum concentrations of tets. Space administration by 1-2 hours.
	Bismuth (Pepto-Bismol)	Inhibition of tetracycline absorption. Avoid concomitant administration.
	Iron Salts	Decreased absorption of tets. Space use by 2-3h.Doxy always affected.
	Oral Contraceptives	Slightly increased risk of ovulation. Use additional method during cycle.
Doxycycline (Vibramycin, Periostat??)	Carbamazepine (Tegretol)	Metabolism of doxy increased. Monitor response to doxycycline.
	Methotrexate (highdose IV)	AVOID DOXYCYCLINE WITH IV METHOTREXATE
	Phenobarbital	Decreased serum levels and effect of doxy. Monitor clinical response.
	Phenytoin (Dilantin, g)	Phenytoin stimulates doxy metabolism. Increase doxy dose or use other tet.
Tetracycline (Sumycin, Panmycin)	Colestipol (Colestid)	Colestipol binds tet in intestine. Do not administer concomitantly.
	Food (Milk and Dairy)	Decreased absorption of tet. Space use by 2-3 hours.
	Zinc sulfate	Tetracycline absorption is decreased. Space use by 2-3 hours.
Quinolones		
All Agents:	Antacids	Decreased quinolone absorption. AVOID
Ciprofloxacin (Cipro,g)	(iron, sucralfate, zinc)	CONCURRENT USE.
Gatifloxacin (Tequin)	Anticoagulants (Coumadin, g)	Increased risk of bleeding disorders. Monitor
Levofloxacin (Levaquin)		INR.
Moxafloxacin (Avelox)	Antineoplastics	Quinolone serum levels may be decreased.
Ofloxacin (Floxin)	Cimetidine (Tagamet, g)	Quinolone serum levels may be increased.
Sparfloxacin (Zagam)	Cyclosporine (Sandimmune, Neoral)	Cyclosporine renal toxicity may be enhanced.
Trovafloxacin (Trovan)	NSAIDs	Enhanced CNS stimulation
	Probenecid (Benemid, g)	Quinolone serum level may be increased50%.
	Theophylline	Increased theophylline toxicity possible with
	Caffeine	Cipro and other. Consult MD
Ciprofloxacin		Increased caffeine effects are possible.

ANTIFUNGALS	Anticoagulants (Coumadin)	Increased risk of bleeding disorders in anticoagulated patient. Consult MD.
Systemic Azole Agents (fluconazole, itraconazole, ketoconazole)		
	Benzodiazepines	Alprazolam, triazolam are contraindicated with itraconazole and ketoconazole. AVOID
	Cyclosporine (Sandimune, Neoral)	Increased cyclosporine levels. Can be used to the patients advantage.
	Rifampin	Decreased levels of the antifungal. AVOID CONCURRENT USE.
	Quinidine	30x increase in Quinidine. AVOID COMBO
	"Statins" (Crestor,Lipitor, Mevacor,Zocor, etc.)	Increased levels and SE of statins.
	Terfenadine (not available in the U.S.)	Increased terfenadine levels resulting in serious cardiac arrhythmias. AVOID CONCURRENT USE.
	Tolterodine (Detrol, Detrol LA)	Increased Detrol-causing arrhythmias.AVOID
	Zolpidem (Ambien)	Increased Ambien effect. Caution.
fluconazole (Diflucan)	Cimetidine (Tagamet, g)	Reduced fluconazole levels. AVOID CONCURRENT USE.
	Hydrochlorothiazide	Increased fluconazole levels.
	Losartan (Cozaar, Hyzaar)	Increased Losartan hypotension effect
	Oral Contraceptives	Decreased estrogen levels. AVOID CONCURRENT USE.
	Phenytoin (Dilantin, g)	Increased phenytoin levels. Monitor carefully.
	Sulfonylureas	Increased hypoglycemic effect. Monitor blood glucose.
itraconazole (Sporonax)	Digoxin	Increased digoxin levels. AVOID COMBINATION.
	Increased gastric pH	Reduced itraconazole levels
	Isoniazid (INH)	Reduced itraconazole levels
	Losartan (Cozaar)	Increased Losartan hypotension effect
	Sulfonylureas	Increased hypoglycemic effects. Monitor blood glucose.
ketoconazole (Nizoral, g)	Corticosteroids	Possible increase in steroid levels.
	Increased gastric pH	Decreased ketoconazole levels. AVOID CONCURRENT USE.
	Isoniazid (INH)	Decreased ketoconazole levels
	Theophyllines	Decreased theophylline levels. Consult with MD.
NON-NARCOTIC ANALGESICS		
NSAIDS		
(including aspirin and COX-2s)	Anticoagulants (warfarin,Coumadin)	Increase risk of bleeding disorders in anticoagulated patient. Consult MD.
	Antihypertensives (all but CCBs) (ACEI,B-blockers, diuretics)	Decreased antihypertensive effect. Monitor Blood Pressure.
	Cimetidine (Tagamet, g)	NSAID levels increased/decreased
	Cyclosporine (Neoral, Sandimmune)	Nephrotoxicity of both agents may be increased. Avoid if possible.
	Fluoroquinolones	Increased CNS stimulation
	Lithium	Increased lithium levels. Use sulindac
	Methotrexate (Rheumatrex, Mexate)	Toxicity of methotrexate may be increased. Monitor.
	Phenytoin (Dilantin, g)	Increased phenytoin levels
	Probenecid (Benemid, g)	Increased toxicity of NSAIDs possible.
	Salicylates	Decreased NSAID levels with increased GI effects. AVOID CONCURRENT USE.
COX-2 SELECTIVE NSAID		
Celecoxib (Celebrex)	$2C_9$ inhibitors (fluconazole)	Increased celecoxib levels

Ibuprofen (Motrin, g)	Digoxin	Possible increase in digoxin levels.
Ketorolac (Toradol,g)	Salicylates	Increased Ketorolac free drug conc.
Sulindac	DMSO	Decreased sulindac effectiveness and severe peripheral neuropathy. Avoid concurrent use.
Sulindac	Lithium	Lithium levels remain constant or decrease.
Acetaminophen only	Barbiturates, Carbamazepine, Phenytoin, Rifampin, Sulfinpyrazone	The hepatotoxicity of APAP may be increased by high dose or long term administration of these drugs.
	Cholestyramine (Questran, g)	Decreased APAP absorption. Do not administer within 2 hours of each other.
	Ethanol	Increased hepatotoxicity of APAP with chronic ethanol ingestion.
Tramadol (Ultram, Ultracet, g)	Any drug that enhances serotonin activity(SSRI antidepressants,"triptans" for acute migraine	Possible serotonin syndrome. AVOID CONCURRENT USE.
	Carbamazepine (Tegretol,g)	Decreased tramadol levels
	MAOI's (Marplan, Nardil, Parnate)	MAOI toxicity enhanced
	Quinidine	Tramadol increased/metabolite decreased
	Ritonavir (Norvir)	Increased Tramadol effect. AVOID COMBO.
NARCOTIC ANALGESICS		
Opioid analgesics	Alcohol, CNS depressants, local anesthetics, antidepressants, antipsychotics, antihistamines, cimetidine	Increased CNS and respiratory depression may occur. Use cautiously.
	Antimuscarinics and antidiarrheals (e.g. atropine), antihypertensives (e.g. guanadrel)	Opioids increase the effects of these drugs. Use cautiously.
	Buprenorphine, nalbuphine, naltrexone	These drugs block the analgesic effects of opioids. Substitute with NSAIDs.
Codeine	$2D_6$ Inhibitors, Amiodarone, Cimetidine, Desipramine, Fluoxetine, Paroxetine, Propafenone, Quinidine, Ritonavir	Inhibition of biotransformation of Codeine to active analgesic form. Use different narcotic on $2D_6$ Inhibitor patients.
Meperidine (Demerol, g)	MAOIs (Marplan, Nardil, Parnate, Furoxone) selegiline (Eldepryl)	Hypertension/hyperpyrexia or coma and hypotension.AVOID CONCURRENT USE if MAOI taken within 14 days.
	Protease inhibitors	Increased CNS/resp. depression- AVOID
	Ritonavir (Norvir)	Large increase in meperidine. AVOID COMBO.
Propoxyphene (Darvon, Darvocet, g)	Carbamazepine (Tegretol)	Carbamazepine metabolism is decreased.
	Protease inhibitors	Increased CNS/resp. depression- AVOID
LOCAL ANESTHETICS	Alcohol,CNS depressants,opioids, antide-pressants,antipsychotics, antihistamines	Increased CNS and resp. depression may occur. Use caution.
	Antiarrhythmic drugs	Increased cardiac depression.
Amides (e.g. lidocaine)	Beta Blockers, cimetidine	Metabolism of lidocaine is reduced. Use caution
Esters (e.g. procaine)	Anticholinesterases (Neostigmine) Sulfonamides	Metabolism of esters reduced. Inhibit sulfonamide action.
VASOCONSTRICTORS (epinephrine,levo-nordefrin)	Inhalation anesthetics (halothane)	Increased chance of arrhythmia
	Tricyclic antidepressants-high dose (amitriptyline, desipramine, imipramine, nortriptyline, etc)	Increased sympathomimetic effects possible. Limit epi to 0.04mg with high dose TCA's.
	Beta-blockers (nonselective)	Hypertensive and/or cardiac rx possible.
	(e.g. propranolol, nadolol)	Limit epi to 0.04mg/2hr. visit.
	Phenothiazines (e.g. chlorpromazine)	Vasoconstrictor action inhibited,leading to possible hypotensive responses. Use cautiously.
	Monoamine Oxidase Inhibitors (MAOIs)	Slight possibility of hypertensive rx.
	Selegiline (Eldepryl,g)	Slight possibility of hypertensive rx.
	COMT Inhibitors (Comtan, Tasmar)	Slight possibility of hypertensive rx.

AGENTS FOR PARENTERAL ANESTHESIA		
Antihistamines		
diphenhydramine (Benadryl) hydroxyzine (Atarax, Vistaril) Promethazine (Phenergan)	Anticholinergics	Increased dry mouth, tachycardia, urinary retention. Monitor.
	CNS depressants (alcohol, narcotics)	Enhanced duration and intensity of sedation. Reduce dosages.
Barbiturates		
methohexital (Brevital,g)	CNS depressants (alcohol, narcotics)	Additive CNS and resp. depression
	Furosemide (Lasix, g)	Orthostatic hypotension
	Sulfisoxazole IV	Sulfa competes with barb. for binding sites. Smaller and more frequent barb. doses may have to be given.
Benzodiazepines		
diazepam (Valium,G)	CNS depressants (anticonvulsants, alcohol)	Oversedation so may use slower titration.
	Cimetidine,OCs,INH,Ketoconazole, Metoprolol, Omeprazole, Propoxyphene, Propranolol,Valproic Acid	Decreased clearance of diazepam. Can avoid with lorazepam.
	Digoxin	Increased digoxin levels.
midazolam (Versed,g)	Calcium Channel Blockers or CCBs (diltiazem-Cardizem, verapamil-Isoptin,Calan, Verelan)	CCBs inhibit Cyp3A4 which prolongs the actions of midazolam. Evaluate patient factors to determine clinical significance.
	CNS depressants (alcohol, barbs)	Increased risk of underventilation or apnea. May prolong the effect of midazolam.
	Erythromycin	Increased midazolam levels. Monitor.
	Inhalation anesthetics	Midazolam decreases MAC of halothane
	Narcotics (morphine, meperidine, fentanyl)	Increased hypnotic effect of midazolam. More hypotension with Versed and Demerol.
	Saquinavir (Fortovase)	Increased midazolam levels. AVOID COMBO.
	Thiopental	After premed with Versed, decrease dose of thiopental for induction by 15%
Narcotics		
fentanyl (Sublimaze,g)	Barbiturate anesthetics	Additive CNS and resp. depression.
	Chlorpromazine (Thorazine, g)	Increased toxicity of both agents.
	Cimetidine (Tagamet, g)	CNS toxicity case reports only. (confusion, apnea, seizures)
	Diazepam	With high dose fentanyl gives CV depression.
	Droperidol (Inapsine)	Hypotension and decreased pulmonary arterial pressure.
	Nitrous Oxide	With high dose fentanyl may cause CV depress.
	Ritonavir (Norvir)	Increased fentanyl levels with Norvir
meperidine (Demerol, G)	Barbiturate anesthetics	Additive CNS and resp. depression
	Chlorpromazine (Thorazine, g)	Increased toxicity of both agents.
	Cimetidine (Tagamet, g)	CNS toxicity as with fentanyl.
	MAOIs and furazolidone (Furoxone)	Meperidine has predictable and sometimes fatal reactions with use within 14 days. Type1 :coma,resp dep,cyanosis,low BP Type2:seizures,hyperpyrexia,hypertension,tachy-cardia. AVOID CONCURRENT USE!!!!!
	Phenytoin (Dilantin, g)	Decrease meperidine effects by increased hepatic metabolism
Miscellaneous		
etomidate (Amidate)	Verapamil	Possibility of prolonged anesthesia
ketamine (Ketalar,g)	Barbiturates	Prolonged recovery time.
	Halothane	Halothane blocks the CV stimulate effect of ketamine.Closely monitor cardiac function.
	Thyroid Hormone	May produce hypertension/tachycardia
	Tubocurarine and nondepolarizing muscle relaxants	Ketamine may increase neuromuscular effects and result in prolonged resp. depression.
Propofol (Diprivan, G)	CNS depressants (sedative/hypnotic, inhalation anesthetics, narcotics)	Increase CNS depression of propofol. Premed with narcotics may lead to more pronounced decrease in systolic, diastolic, and mean arterial pressures and cardiac output.