CAMA
Coastal Anesthesiology
MEDICAL ASSOCIATES

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The following represents Coastal Anesthesiology Medical Associates (CAMA) Guidelines for Surgical Magnitude and Preoperative Testing Guidelines

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The following information/charts are guidelines for determining the magnitude of surgery for use with prioritizing patients for laboratory/EKG ordering.

If no change in medications or health status, labs drawn within the past 60 days are acceptable

The following patients should have an EKG within 6 months of surgery (including Magnitude 0)

- Confirmed history of coronary artery disease (CAD), i.e. history myocardial infarction (MI), history of percutaneous coronary intervention (coronary artery angioplasty or stents), history of coronary artery bypass grafting (CABG), history of an abnormal cardiac stress test.
- History of congestive heart failure
- History of ischemic or non-ischemic stroke of any magnitude
- History of atrial fibrillation/flutter
- History of a pacemaker or defibrillator

An EKG within 6 months is acceptable with the following exceptions:

- Recent/chronic cocaine/methamphetamine use - EKG within 30 days
- Patients with a cardiac event - EKG following event
- Methadone patients with a change in dosing within a year - EKG following change

AICD (Defibrillator) - Interrogation within 6 months
Pacemaker - Interrogation within 6 months
uHCG - All menstruating females (exception if s/p sterilizing procedure)

These are minimum requirements. Exceptions can be made on a case-by-case basis if approved by the Anesthesiologists.

MAGNITUDE 0 NON-INVASIVE AMBULATORY
CARPAL TUNNEL RELEASE (MAC)
CATARACT
DIAGNOSTIC ESOPHAGOGASTRODUODENOSCOPY (EGD)
SCREENING COLONOSCOPY
TRIGGER FINGER RELEASE (MAC)

Magnitude 0 - No Labs/EKG ordered preoperatively

	MAGNITUDE A MINIMALLY INVASIVE	MAGNITUDE B MODERATELY INVASIVE	MAGNITUDE C HIGHLY INVASIVE
GENERAL/ COLORECTAL/ INTERVENTIONAL GI	ABSCESS INCISION & DRAINAGE (I&D)	ABDOMINAL LAPAROSCOPIC LYSIS OF ADHESIONS	ADRENALECTOMY
	ENDOSCOPIC ULTRASOUND (EUS)	APPENDECTOMY	HEAD/NECK DISSECTION
	ERCP	CHOLECYSTECTOMY (OPEN OR LAPAROSCOPIC)	LIVER RESECTION
	INGUINAL HERNIA REPAIR (*NOT ROBOTIC)*	COLOSTOMY	PELVIC EXONERATION
	LYMPH NODE BIOPSY	DIAGNOSTIC ABDOMINAL LAPAROSCOPY/OTOMY	SPLENECTOMY
	OSTOMY TAKEDOWN/REVISION	DUODENAL RESECTION	WHIPPLE
	TRACHEOSTOMY	OSTOMY PLACEMENT (ILEOSTOMY/JEJUNOSTOMY)	
	UMBILICAL HERNIA REPAIR *(NOT ROBOTIC)*	LARGE BOWEL RESECTION/REANASTOMOSIS	
		SLEEVE GASTRECTOMY/ROUX-EN-Y	
		ROBOTIC HERNIA (ANY) REPAIR	
		SMALL BOWEL RESECTION/REANASTOMOSIS	
		VENTRAL HERNIA REPAIR ± ROBOTIC	
BREAST/PLASTICS	BLEPHAROPLASTY	DEEP INFERIOR EPIGASTRIC PERFORATOR (DIEP) FLAP	
	BREAST AUGMENTATION/REDUCTION	MASTECTOMY	
	BREAST BIOPSY (+/- SENTINEL NODE BIOPSY)	MASTECTOMY WITH LYMPH NODE DISSECTION	
	FACE LIFT	PANNICULECTOMY/ ABDOMINOPLASTY	
	INCISION AND DRAINAGE (I&D)	REDUCTION MAMMOPLASTY	
	LIPOSUCTION		
	LUMPECTOMY		
	NECK LIFT		
	SKIN GRAFTING		
	TISSUE EXPANDER (INSERTION/REMOVAL)		
	WOUND WASHOUT		

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	MAGNITUDE A MINIMALLY INVASIVE	MAGNITUDE B MODERATELY INVASIVE	MAGNITUDE C HIGHLY INVASIVE
CARDIAC / INTERVENTIONAL CARDIOLOGY	PACEMAKER INSERTION	AFIB/SVT ABLATION	CORONARY ARTERY BYPASS GRAFTING (CABG)
			PERICARDECTOMY
			PERICARDIAL WINDOW
			VALVE REPLACEMENT/REPAIR
			WATCHMAN / AMULET
			MITRACLIP
			TAVR
EAR, NOSE & THROAT	ADENOIDECTOMY	THYROIDECTOMY	RADICAL HEAD/NECK DISSECTION
	COCHLEAR IMPLANT		THYROIDECTOMY-SUBSTERNAL
	FUNCTIONAL ENDOSCOPIC SINUS SURGERY		
	GLOSSECTOMY		
	MAXILLARY ANTROSTOMY		
	MICRODIRECT LARYNGOSCOPY/SUBGLOTTOSCOPY		
	MYRINGOTOMY		
	PARATHYROIDECTOMY		
	RHINOPLASTY		
	SEPTOPLASTY (+/- INF TURBINATE REDUCTION)		
	SINUSOTOMY		
	STAPEDECTOMY		
	TONSILLECTOMY +/- ADENOIDECTOMY		
	TRACHEOSTOMY		
	TURBINATE REDUCTION		
	TYMPANOMASTOIDECTOMY		
NEURO/SPINE	DEEP BRAIN (DBS) /RESPONSIVE (RNS) NEUROSTIMULATOR BATTERY CHANGE	ANTERIOR CERVICAL FUSION:ACDF (<3 LEVELS)	ANTERIOR CERVICAL FUSION: ACDF (3 OR MORE LEVELS)
	VNS PLACEMENT	BACLOFEN PUMP PLACEMENT	CRANIOPLASTY
	VP SHUNT	DECOMPRESSION	CRANIOTOMY
		DEEP BRAIN STIMULATOR(DBS) EXTENSION WIRE & IPG PLACEMENT	DEEP BRAIN (DBS)/RESPONSIVE (RNS) NEUROSTIMULATOR PLACEMENT
		DISCECTOMY	INTRACRANIAL TUMOR
		LAMINECTOMY	NEURO EMBOLIZATION
		MICRODISCECTOMY	OSTEOTOMY
		NEURO EMBOLIZATION	POSTERIOR CERVICAL SPINE FUSION (3+ LEVEL)
		POSTERIOR CERVICAL FUSION (<3 LEVELS)	TRANSPHENOIDAL RESECTION PITUITARY TUMOR

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Coastal Anesthesiology
MEDICAL ASSOCIATES

	MAGNITUDE A MINIMALLY INVASIVE	MAGNITUDE B MODERATELY INVASIVE	MAGNITUDE C HIGHLY INVASIVE
ORTHOPEDICS	ACHILLES TENDON LENGTHENING	BELOW KNEE AMPUTATION	ABOVE KNEE AMPUTATION
	ARTHRODESIS	HIP ARTHROPLASTY	JOINT REVISION(KNEE/HIP/SHOULDER)
	ARTHROSCOPY (ANY JOINT)	HIP REPLACEMENT	MAJOR ORTHOPEDIC RECONSTRUCTION
	BICEPS REPAIR	JOINT REPLACEMENT (KNEE/HIP/SHOULDER)	MAJOR PELVIC SURGERY
	CLAVICLE ORIF	ORIF FEMUR/ HUMERUS	
	DIGIT AMPUTATION	PERIACETABULAR OSTEOTOMY	
	FASCIOTOMY	SHOULDER ARTHROPLASTY	
	FOOT SURGERY (ORIF, NAILING)		
	FOOT SURGERY (PODIATRY)		
	INCISION & DRAINAGE (I&D)		
	LIGAMENT REPAIR (KNEE, ANKLE,WRIST)		
	ORIF PATELLA		
	MENISCECTOMY		
	REMOVAL OF HARDWARE		
	ROTATOR CUFF REPAIR		
	SHOULDER ARTHROSCOPY		
	TOE (DEBRIDEMENT, AMPUTATION)		
	WRIST ARTHROPLASTY		
OPHTHALMOLOGY	VITRECTOMY		
	SCLERAL BUCKLE		
THORACIC		PECTUS EXCAVATUM REMOVAL OF HARDWARE	LOBECTOMY—OPEN OR VATS
		VATS PLEURODESIS	MEDIASTINAL MASS RESECTION
		VATS SYMPATHECTOMY	ESOPHAGECTOMY
		VATS WEDGE RESECTION	STERNOTOMY
			THORACOTOMY
			DECORTICATION
			LUNG VOLUME REDUCTION SURGERY
			LUNG TRANSPLANT
			TRACHEAL RESECTION
			TRACHEOPLASTY
			PNEUMONECTOMY
			PECTUS EXCAVATUM REPAIR

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	MAGNITUDE A MINIMALLY INVASIVE	MAGNITUDE B MODERATELY INVASIVE	MAGNITUDE C HIGHLY INVASIVE
UROLOGY/ GYNECOLOGY	ANTERIOR & POSTERIOR REPAIR (COLPORRHAPHY)	DIAGNOSTIC ABDOMINAL LAPAROSCOPY/OTOMY/LYSIS OF ADHESIONS	CYSTECTOMY (+/-NEOBLADDER)
	BLADDER SLING	DILATION & EVACUATION (D&E)	NEPHRECTOMY-PARTIAL
	BLADDER STIMULATOR IMPLANT/REMOVAL	HYSTERECTOMY(VAGINAL/ABDOMINAL)	OPEN PROSTATECTOMY
	CIRCUMCISION	NEPHRECTOMY-RADICAL	
	CRYOTHERAPY	RETROPERITONEAL LYMPH NODE DISSECTION	
	CYSTOSCOPY (+/- PYELOGRAM)	ROBOTIC PROSTATECTOMY	
	D & C (DILATION AND CURETTAGE)	TAH-BSO (TOTAL ABDOMINAL HYSTERECTOMY AND BILATERAL SALPINGO-OOPHORECTOMY)	
	EXAM UNDER ANESTHESIA	VULVECTOMY SIMPLE/RADICAL	
	HYSTEROSCOPY (+/- MYOMECTOMY/POLYPECTOMY/ SEPTUM RSXN)		
	OOCYTE RETRIEVAL		
	OVARIAN CYSTECTOMY / SALPINGECTOMY		
	RECTOCELE REPAIR / SPERMATOLOCELECTOMY		
	RENAL STENT EXCHANGE		
	TANDEM AND OVOIDS		
	TRANS-VAGINAL TAPING		
	TUBAL LIGATION		
	TURBT		
	TURP		
	URETEROSCOPY (+/- STENT PLACEMENT/REVISION)		
	URETHRAL RECONSTRUCTION		
	VAGINAL SUSPENSION		
	VASECTOMY REVERSAL		
VASCULAR	ANGIOGRAM/ANGIOPLASTY (INFRAINGUINAL)	ANGIOGRAM/ANGIOPLASTY (SUPRAINGUINAL)	AAA REPAIR
	ARTERIOVENOUS FISTULA (AVF) SURGERY	PERITONEAL DIALYSIS (PD) CATHETER PLACEMENT	CAROTID BYPASS
		THROMBECTOMY	CAROTID ENDARTERECTOMY / TCAR
			FEMORAL ENDARTERECTOMY
			FEMORAL ARTERY BYPASS GRAFT

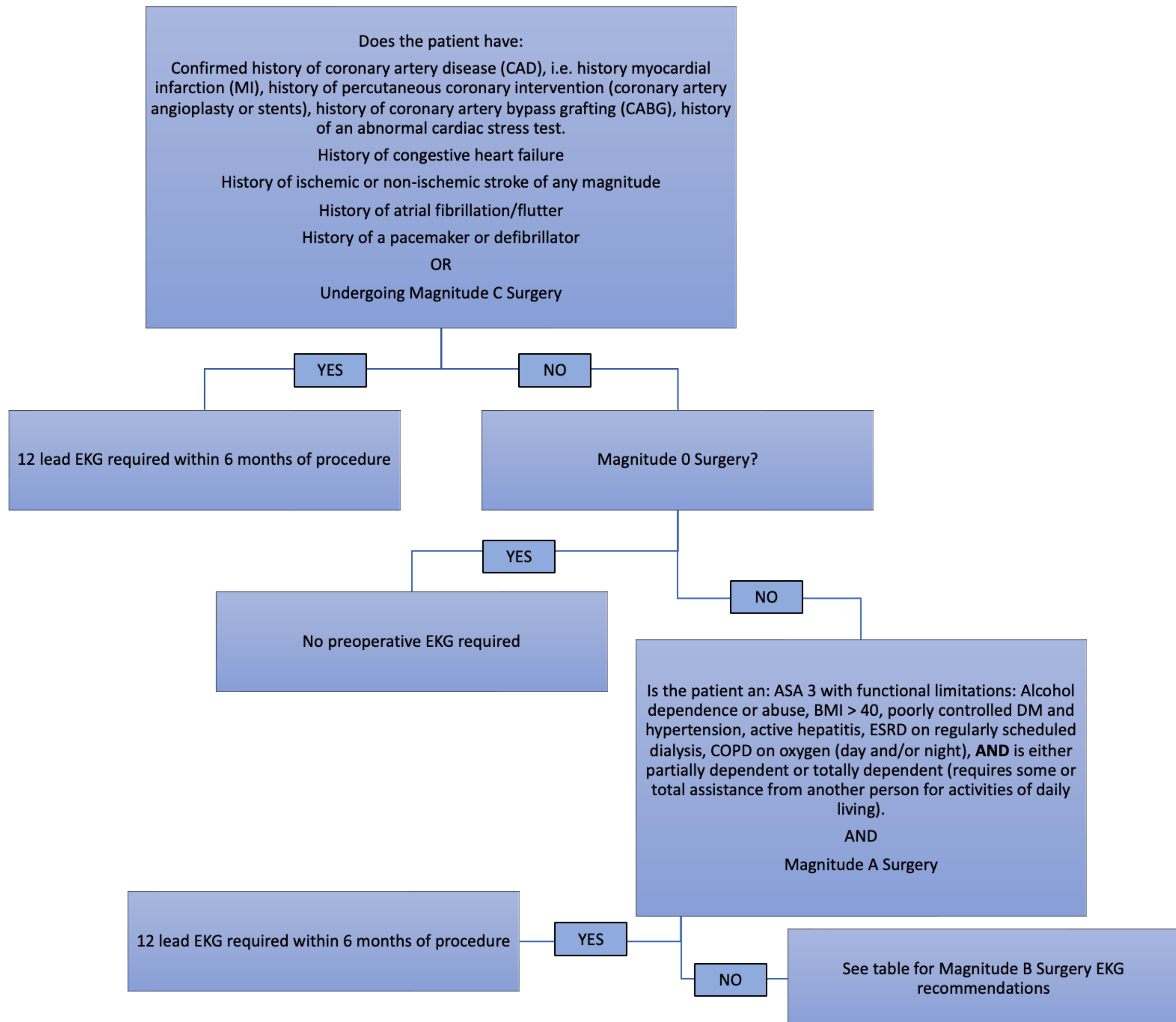
PREOPERATIVE LABORATORY/EKG TESTING PROTOCOL						
	CBC	Chem7	PT/PTT/INR	Hepatic Profile	T&S	EKG
Highly Invasive Surgery (Type C)	C	C	C		C	C
Type B Ortho, Type B Uro-Gyn	B					
D&E	B				B	
History of recent/multiple transfusions, or known antibodies	B				B	
ASA 3 patients WITH functional limitations*						A / B
Age > 55 with 1+ comorbidity**						B
History of renal disease or creatinine > 1.5	B	A / B				
Diabetes		B				B
OSA or COPD	B					B
Liver/pancreatic disease (e.g. carcinoma, cirrhosis, ascites, jaundice)	A / B	A / B	A / B	A / B / C		B
HTN >1yr, on 1+ anti-hypertensive		B				B
Taking diuretics, digoxin or steroids		B				
Cardiovascular/Cerebrovascular disease (e.g. CAD, afib, CHF, pacemaker/AICD, stroke)						A / B
Chemotherapy within 30 days	B	B	B			
Anemia	B					
Coumadin use	A / B		A / B			
Chronic or Recent Cocaine or Methamphetamine use						A / B
Methadone Use						A / B
On anti-coagulation***	B		B			

***ASA 3 with functional limitations:** Alcohol dependence or abuse, BMI > 40, poorly controlled DM and hypertension, active hepatitis, ESRD on regularly scheduled dialysis, COPD on oxygen (day and/or night), **AND** is either partially dependent or totally dependent(requires some or total assistance from another person for activities of daily living).

****Comorbidities**: HTN, current smoker, COPD, OSA, CKD/ESRD, BMI>30

*****Anticoagulant Medications:** Apixaban (Eliquis), Betrixaban (Bevyxxa), Cangrelor (Kangreal), Cilotasol(Pletal), Clopidogrel (Plavix), Dabigatran (Pradaxa), Dalteparin (Fragmin), Desirudin (Revasc), Edoxaban (Savaysa), Enoxaparin (Lovenox) Fondaparinux (Arixtra), Prasugrel (Effient), Rivaroxaban (Xarelto), Ticagrelor (Brilinta), Ticlopidine (Ticlid)

Preoperative EKG Algorithm



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The following information represents general guidance for the pre-procedural management of outpatient medications based on current, best available evidence. It does not replace the expertise or opinion of an individual physician. Modification of outpatient medications requires knowledge of the patient's condition in the context of the scheduled surgery or procedure.

Perioperative Medication Guidelines

TABLE OF CONTENTS

	Section Title	Pages
A	Anti-Thrombotics	3
B	Arthritis Medications	4
C	Cardiac Medications	5
D	Chronic Pain/Addiction Medications	7
E	Drugs of Abuse	9
F	Endocrine Agents (Non-Diabetic)	10
G	Hypoglycemic Agents	11
H	Neurologic Medications	14
I	Psychotropic Agents	16
J	Other Medications	18

Medication Guidelines

The recommendations below are consistent with consensus recommendations and represent general guidelines for all patients under the care of a CAMA physician.

It should be noted that there is very limited evidence in support of interruption of any medication in the perioperative period. These recommendations, therefore, are general guidelines and exceptions may be made based on patient physiology in the context of a given procedure or surgery.

Medications that are continued on the day of surgery (DOS) should be taken with sips of water at least 2 hours prior to the procedure start time.

Please note: All ACE/ARBS, and Diuretics should be continued for Magnitude 0 cases.

These guidelines are to be implemented at the following hospitals/surgery centers:

Sierra Vista Regional Medical Center, French Hospital Medical Center, Arroyo Grande Community Hospital, Twin Cities Community Hospital, San Luis Obispo Surgery Center, Coastal Surgical Institute (CSI), Posada Surgery Center, Coast Ambulatory Surgery Center, California Medical Surgery Center

Summary of Medications to Hold DOS

- Gout Medication
    - Colchicine
- ACE/ARBS *(continue for Magnitude 0 cases)*
    - Enalapril (Vasotec)
    - Lisinopril (Zestril)
    - Captopril (Capoten)
    - Losartan (Cozaar)
    - Valsartan (Diovan)
    - Benzopril (Lotensin)
- Diuretics *(continue if taken for heart failure and Magnitude 0 case)*
    - Furosemide (Lasix)
    - Hydrochlorothiazide (Microzide)
    - Metolazone (Zytanix)
    - Spironolactone (Aldactone)
    - Eplerenone (Inspra)
- Chronic Pain Medications
    - Naltrexone (hold 24-72 hours)
- Nicotine
- Anti-hyperglycemics:
    - See list below
- Dementia Medications:
    - Galantamine (Razadyne)
    - Rivastigmine (Exelon)
    - Donepezil
- Stimulants:
    - Dextroamphetamine (Adderall)
    - Methylphenidate (Ritalin)
    - Dexmethylphenidate (Focalin)
    - Lisdexamfetamine (Vyvanse)
    - Methylphenidate (Concerta)
- Diet Medications (see below for timing)
    - Phentermine
    - Contrave (naltrexone/bupropion):
    - Semaglutide (Ozempic and Wegovy)
    - Tirzepatide (Mounjaro)
    - Liraglutide (Victoza, Saxenda)
    - Canagliflozin
    - Dapagliflozin
    - Empagliflozin
- Herbal Supplements:
    - See list below
- Urologic Medications:
    - Sildenafil (Viagra)
    - Tadalafil (Cialis

A. ANTI-THROMBOTICS

Guidelines for Anticoagulation Cessation during the Preoperative Period

Agent (trade name)	Creatinine Clearance (mL/min)	Typical Dosing	Surgical Bleeding Risk		Neuraxial Anesthesia	NOTES
			Low	High		
Apixaban (Eliquis)	>25	5-10 mg bid	1 d	2 d	3 d	**No bridging necessary Consider longer cessation if on a higher dose for CrCl Consider shorter cessation if CrCl >25 & ppx dosing[1]
	<25	2.5 mg bid	1 d	2 d	3 d	
Aspirin	n/a	81-325 mg daily	0 d	7-10 d	0 d	For most surgeries, continue 81mg
Betrixaban (Bevyxxa)	>30	80 mg daily	2 d	3-4 d	5d	**No bridging necessary Consider longer cessation if on a higher dose for CrCl
	15-30	40 mg daily	2 d	3-4 d	5d	
Cangrelor (Kangreal)	n/a	4 mcg/kg/min	1 hr	2 hrs	3 hrs	No renal clearance. Rapid return of platelet function
Cilostazol (Pletal)	n/a	100 mg bid	2 d	4 d	5 d	
Clopidogrel (Plavix)	n/a	75 mg daily	5-7 d	7 d	5-7 d	For high thrombotic risk patients, 5 day cessation may be recommended even if high bleeding risk surgery
Dabigatran (Pradaxa)	>50	150 mg bid	1 d	2 d	3-5 d	**No bridging necessary Consider longer cessation if on a higher dose for CrCl Consider shorter cessation if CrCl >30 & ppx dosing[1]
	30-50	150 mg bid	2 d	3-4 d	5 d	
	15 - 30	75 mg bid	3 d	4 d	5 d	
Dalteparin (Fragmin)	>30	120IU/kg up to 10,000IU bid	24 hr	24 hr	24-36 hr	Consider longer cessation if CrCL<30 (typically not used). Consider shorter cessation if ppx dosing[1]
Edoxaban (Savaysa)	>30	60 mg daily	1 d	2 d	2-3d	**No bridging necessary Consider longer cessation if on a higher dose for CrCl
	15 - 30	30 mg daily	1 d	2 d	2-3d	
Enoxaparin (Lovenox)	>30	1.5 mg/kg daily or 1 mg/kg bid	12-24 hr	12-24 hr	24 hr	Consider longer cessation if on a higher dose for CrCl Consider shorter cessation if CrCl >30 & ppx dosing[1]
	<30	30 mg bid or 1 mg/kg daily	12-24 hr	12-24 hr	24 hr	
Fondaparinux (Arixtra)	>30	7.5-10 mg daily	3 d	5 d	No Block	Contraindicated if CrCl<30.
NSAIDS	n/a	n/a	0 d	5 d	0 d	
Prasugrel (Effient)	n/a	10 mg daily	7 d	7d	7-10 d	
Rivaroxaban (Xarelto)	>30	20 mg daily	1 d	2 d	3 d	**No bridging necessary Consider longer cessation if on a higher dose for CrCl Consider shorter cessation if CrCl>30 & ppx dosing[1]
	15 - 30	15 mg daily	1 d	2 d	3 d	
Ticagrelor (Brilinta)	n/a	10 mg daily	5 d	5-7 d	5-7 d	
Ticlopidine (Ticlid)	n/a	250 mg bid	14 d	14d	14 d	

Warfarin (Coumadin)	n/a	variable	5d	5d + nl INR	5d + nl INR	Consideration of bridging must be made

B. ARTHRITIS MEDICATIONS

a. RHEUMATOID ARTHRITIS:

i. Glucocorticoids: Continue DOS. Patients on >10mg/day prednisone presenting for elective surgery may need postponement for optimization.

ii. NSAIDs: See NSAID section below.

iii. DMARDS:

iv. Non-biologic:

1. Examples: **Methotrexate, Leflunomide (Arava), Sulfasalazine (Azulfidine), Hydroxychloroquine (Plaquenil)**
2. Continue up to and including DOS

v. Biologics:

1. Examples: **Infliximab (Remicade), Abatacept (Orencia), Anakinra (Kineret), Rituximab (Rituxan), Etanercept (Enbrel), Tofacitinib (Xeljanz)**
2. These medications may impair wound healing and may need to be held 1-2 weeks prior to surgery. This decision would need to be made by the Rheumatologist in consultation with the surgeon.

b. SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

i. Glucocorticoids: Continue DOS

ii. Other Medications: **Azathioprine (Imuran), Cyclosporine, Cyclophosphamide (Cytoxan), Hydroxychloroquine (Plaquenil), Methotrexate (Rheumatrex), Mycophenolate (CellCept), Tacrolimus (Prograf)**

1. For mild SLE, these medications may be held for 1 week prior to surgery as determined by an NP or MD.
2. For moderate-severe SLE, cessation of medications needs to be determined by the treating rheumatologist.

c. **GOUT**:

i. **Colchicine**: Hold DOS. Can lead to muscle weakness, neuropathy and has multiple interactions with other medications

ii. **Allopurinol**: Continue DOS

C. **CARDIAC MEDICATIONS:**

a. We seek to have patients present for surgery as close to their baseline status as possible. Therefore, continuation of cardiac medications is preferred except in specific circumstances outlined below. The low volume state in fasting patients combined with the blood pressure lowering effects of anesthesia can lead to hypotension in the perioperative period, an effect which can be exaggerated by the patient's antihypertensive regimen. However, the cessation of medications in certain patients can place them at a high risk for severe hypertension or decompensated CHF.

b. **ACE-I/ARBS:**
   - i. Examples: **Enalapril (Vasotec), Lisinopril (Zestril), Captopril (Capoten), Losartan (Cozaar), Valsartan (Diovan), Benzopril (Lotensin)**
     1. Generally: hold for 24 hours prior to surgery (skip dose morning of and evening before).
     2. *Exceptions:*
        - ***a. Continue these medications for all Magnitude 0 cases***
        - *b. BP > 160/100 and on monotherapy*
        - *c. Poorly controlled/resistant hypertensives (BP >160/100 on multiple medications) - consult anesthesiologist*

c. **ANTI-ARRHYTHMICS:**
   - i. Examples: **Amiodarone (Nexterone), Digoxin (Lanoxin), Flecainide (Tamobocor), Propefenone (Rhythmol), beta-blockers, calcium-channel blockers**
     1. All Patients: Take up to and including the DOS

d. **BETA-BLOCKERS:**
   - i. Examples: **Atenolol (Tenormin) , Metoprolol (Lopressor), Labetalol, Carvedilol (Coreg)**
   - ii. All Patients: Take up to and including the DOS.
   - iii. Cessation of beta-blockers perioperatively results in an increased risk of perioperative myocardial infarction.

e. **CALCIUM CHANNEL BLOCKERS:**
   - i. Examples: **Amlodipine (Norvasc), Nicardipine (Cardene), Diltiazem (Cardizem), Verapamil (Verelan)**
   - ii. All Patients: Take up to and including the DOS

f. **CLONIDINE:**
   - i. All Patients: Take up to and including the DOS.
   - ii. Cessation of clonidine results in rebound hypertension. These patients can become dangerously hypertensive if they interrupt therapy.

g. **DIURETICS**:
   - i. Examples: **Furosemide (Lasix), Hydrochlorothiazide (Microzide), Metolazone (Zytanix), Spironolactone (Aldactone), Eplerenone (Inspra)**
   - ii. Generally: Hold DOS
   - *iii. Exception:*
     1. *For patients with Congestive Heart Failure: continue*
     2. ***Continue these medications for all Magnitude 0 cases***

h. **HEART FAILURE MEDICATIONS**
   - i. Examples: **Diuretics, Digoxin**
   - ii. All Patients: Consult an MD, most patients with CHF should continue DOS

i. HYDRALAZINE:
  i. All Patients: Take up to and including the DOS.

j. NITRATES:
  i. Examples: **Isosorbide Dinitrate, Nitroglycerin**
  ii. All Patients: Take up to and including the DOS

k. PULMONARY HYPERTENSION MEDICATIONS:
  i. Examples: **Bosentan (Tracleer), Sildenafil (Revatio), Ambrisentan (Letairis)**
  ii. All Patients: Take up to and including the DOS.
  iii. These patients should be consulted by an anesthesiologist prior to the DOS

l. **STATINS**:
  i. Examples: **Atorvastatin (Lipitor), Rosuvastatin (Crestor)**
  ii. All Patients: Take up to and including the DOS

D. CHRONIC PAIN/ADDICTION MEDICATIONS

a. Patients may be on these medications for chronic pain, substance use disorder, or both. Recommendations for when to interrupt therapy should be individualized. Patients on medications such as buprenorphine or naltrexone should **never be told to discontinue the medication without consultation with the prescribing provider**, especially if the medication is prescribed for addiction. Coordination with the prescribing provider is often necessary, as they may be required to prescribe bridging with alternative medications if needed.

b. **ANTI-EPILEPTICS:**
   i. For chronic pain
   ii. Examples: **Gabapentin (Neurontin), Pregabalin (Lyrica), Carbamazepine (Tegretol)**
   iii. Continue up to and including DOS

c. **BUPRENORPHINE +/- NALOXONE:**
   i. For opioid use disorder or chronic pain
   ii. Confirm patient still taking, why taking (addiction or pain), record total daily dose and obtain contact information for prescribing provider
   iii. **Patch (Butrans), Buccal (Belbuca)**: Continue to DOS
   iv. Implant (**Probuphine**): Continue to DOS
   v. Sublingual (Suboxone, Subutex):
      1. Continue DOS

d. **METHADONE:**
   i. For opioid use disorder or chronic pain
   ii. Continue up to and including the DOS
   iii. EKG for QTc measurement should be obtained within:
      1. One year: If methadone dosing has not been changed within a year
      2. One month: If methadone dosing has changed within the year

e. **NALTREXONE**:
   i. For alcohol/opioid use disorders
   ii. Recommend preoperative evaluation with prescribing provider
   iii. Oral Tablets: Hold 24-72 hours—pt should notify prescribing provider for guidance
   iv. Extended release IM injection: Elective surgeries should be scheduled at least 30 days after the last injection.

f. **NSAIDS**:
   i. Examples: **Ibuprofen, Naproxen, Aspirin, Celecoxib (Celebrex)**
   ii. COX inhibitors increase bleeding risk while selective COX-2 inhibitors can impair renal function. Both may increase myocardial infarction risk.
   iii. Patients with Coronary stents: **continue ASA 81** up to and including the DOS
   iv. Other patients: Discontinue for 1 week prior to surgery, if possible

g. **OPIOIDS**:
   i. For chronic pain
   ii. Examples: **Codeine, Hydromorphone, Morphine, Oxycodone, Oxymorphone, Tramadol, Transdermal Fentanyl, Tapentadol**
   iii. Patients should continue taking their usual medications up to and on the DOS.
   iv. For procedures/surgeries scheduled later in the day, patients may consider bringing adequate medication with them in the event of a surgical delay.
   v. Fentanyl Patches: Patient should be instructed to inform their anesthesiologist about the dose, time placed and location of the patch. These are typically replaced every 3 days.

Fentanyl patches may need to be removed if a warming device is being used nearby, as heat increases the absorption of medication

E. DRUGS OF ABUSE

a. **ALCOHOL**:
   i. Should not be consumed on the DOS
   ii. It is preferable not to consume alcohol the day prior to surgery in order to avoid dehydration
   iii. An accurate assessment of daily alcohol use is important to identify patients at risk for withdrawal during their hospital stay

b. **CANNABIS**:
   i. Cannabis:
      1. Smoking/Vaping: Cessation is recommended as far ahead of surgery as is possible but at a minimum on the DOS.
      2. Edibles: Cessation is encouraged. Continued consumption must meet the NPO guidelines.
      3. CBD oil: Continue up to and including DOS. Do not use oil on or near the surgical site

c. **NICOTINE**:
   i. Nicotine patches: may be continued until DOS. They should not be located on or near the operative site. Patients should inform their anesthesiologist where the patch is located.
   ii. Nicotine gum: hold on DOS. In order to comply with NPO guidelines, nicotine gum should not be used after midnight on the DOS.

d. OTHER DRUGS OF ABUSE:
   i. Patients should be encouraged to be forthright with their anesthesiologist about which drugs they are using and when they last used. Some drugs, in the setting of general anesthesia, can result in arrhythmia, MI or severe hypertension which can be fatal. Therefore, honesty with the anesthesia provider is crucial for their safe care.
   ii. **Methamphetamines**: Stop using 1 weeko prior to surgery. Methamphetamines consumed 1-2 days prior can result in case cancellation.
   iii. **Cocaine**: Stop using 1 week prior to surgery. Cocaine consumed 1-2 days prior can result in case cancellation.
   iv. **Heroin**: Stop using 1 week prior to surgery. Use 1-2 days prior to surgery may result in case cancellation.
   v. **Opiates**: Chronic opiate abuse can result in severe, uncontrolled pain after surgery. Patients should be counseled to taper opiate use prior to surgery. Opiate abuse on the day of surgery may result in case cancellation.
   vi. **Herbal Drugs of Abuse**: Patients should stop using 1-2 weeks prior to surgery.
      1. **Kava**: Can cause liver dysfunction, sedation, muscle weakness.
      2. **Khat**: Illegal in the US. A stimulant similar to cocaine. Patients can develop arrhythmias, MI, stroke, seizures.
      3. **Kratom**: Taper to the lowest possible dose prior to surgery. Acts on the opioid and serotonin receptors. It is used as a drug of abuse and as a substitute for opioids for people with addiction. Patients are at risk for severe, uncontrolled pain postoperatively.

F. **ENDOCRINE AGENTS (NON-DIABETIC)**

a. **THYROID MEDICATIONS:**
   i. Continue medications up to and including the DOS

b. **HORMONE THERAPY**
   i. All of the following hormone modifying agents increase the risk of DVT/PE and consideration for discontinuation prior to surgery should be made. The relative risks of discontinuation vs continuation should be determined by the prescribing provider in consultation with the surgeon and may be coordinated during a PPS visit. The risk of continuation is lowest for surgeries with a low risk of perioperative VTE (Magnitude A or outpatient surgeries).

c. **ORAL CONTRACEPTIVES:**
   i. Examples: **Estrogen, Progestin**
   ii. OCPs increase the risk of DVT/PE significantly.
   iii. The risk of DVT/PE needs to be weighed by the benefit of preventing unwanted pregnancy.
   iv. Four weeks of discontinuation is ideal for VTE risk reduction.

d. **POSTMENOPAUSAL THERAPY:**
   i. Systemic Examples: **estrogen +/- progestin pill, transdermal, gel, cream or foam**
   ii. Increases the risk of thromboembolism modestly
   iii. For low VTE risk surgeries: continue up to and including DOS
   iv. For mod-high VTE risk surgeries:
      1. Discontinue 1-2 weeks if acceptable to patient
      2. Continue if discomfort of discontinuation is severe or distressing to patient
   v. **Vaginal Preparations**: are low dose with minimal systemic absorption and can be continued up to and including the DOS

e. **SELECTIVE ESTROGEN RECEPTOR MODULATORS:**
   i. Examples: **Tamoxifen and Raloxifene**
   ii. These medications increase the risk of VTE.
   iii. For low VTE risk surgeries: continue up to and including DOS
   iv. For mod-high VTE risk surgeries:
      1. Consult an oncologist if patient is being treated for cancer
      2. Discontinue 1-2 weeks if patient is on prophylaxis only (consult with MD/DO)

f. **AROMATASE INHIBITORS:**
   i. Examples: **Anastrozole (Arimidex), Letrozole (Femara), Exemestane (Aromasin)**
   ii. Continue up to and including DOS
   iii. These medications are used in the prevention or treatment of estrogen receptive cancers. They have a relatively low risk of VTE when compaired to SERMs.

g. **TESTOSTERONE**
   i. Continue up to and including DOS. Preoperative testosterone is not associated with an increased incidence of postoperative morbidity or mortality

h. **OSTEOPOROSIS MEDICATIONS:** These medications can be continued up to and including the DOS. However, due to an increased risk of osteonecrosis, some OMFS surgeons may ask patients to discontinue these medications for three months prior to elective surgery.

Coastal Anesthesiology Medical Associates (CAMA)

G. ANTI-HYPERGLYCEMIC AGENTS/GUIDELINES FOR DIABETIC PATIENTS

INSULIN MODIFICATION FOR NPO PATIENTS				
Drug	**Dosing**	**PM before Surgery**	**AM of Surgery**	**Notes**
LONG ACTING and PREMIXED INSULIN FORMULATIONS				
Aspart Premix 70/30 (Novolog 70/30)	BID	Take	½ Dose	Take usual dose in pm, ½ usual dose in am
Degludec (Tresiba)	Daily	80% of Usual	½ Dose	If taken in pm, take 80% of usual dose; if taken in am, take ½ usual dose
Degludec/Aspart (Ryzodeg)	Daily	80% of Usual	½ Dose	If taken in pm, take 80% of usual dose; if taken in am, take ½ usual dose .
Degludec/Liraglutide (Xultophy)	Daily	80% of Usual	½ Dose	If taken in pm, take 80% of usual dose; if taken in am, take ½ usual dose
Detemir (Levemir)	1-2 Daily	80% of Usual	½ Dose	If taken in pm, take 80% of usual dose; if taken in am, take ½ usual dose
Glargine (Lantus)	1-2 Daily	80% of Usual	½ Dose	If taken in pm, take 80% of usual dose; if taken in am, take ½ usual dose
Glargine/Lixisenatide (Soliqua)	Daily	80% of Usual	½ Dose	If taken in pm, take 80% of usual dose; if taken in am, take ½ usual dose
Glargine U-300 (Toujeo)	Daily	80% of Usual	½ Dose	If taken in pm, take 80% of usual dose; if taken in am, take ½ usual dose
Lispro Premix 75/25 or 50/50 (Humalog 75/25 or 50/50)	BID	Take	½ Dose	Take usual dose in pm, ½ usual dose in am
NPH (Humulin N, Novolin N; 70/30)	1-2 Daily	Take	½ Dose	If taken in pm, take usual dose; if taken in am, take ½ usual dose
U500 (Insulin R U-500)	1-2 Daily	Take	½ Dose	If taken in pm, take usual dose; if taken in am, take ½ usual dose
SHORT ACTING INSULIN FORMULATIONS				
Aspart (Novolog, Fiasp)	With Meals	Take	Hold	Take usual dose in pm, hold in am
Glulisine (Apidra)	With Meals	Take	Hold	Take usual dose in pm, hold in am
Inhaled Insulin (Afrezza)	With Meals	Take	Hold	Take usual dose in pm, hold in am
Lispro (Humalog)	With Meals	Take	Hold	Take usual dose in pm, hold in am

Coastal Anesthesiology MEDICAL ASSOCIATES

MODIFICATION OF DIABETES MEDICATIONS IN NPO PATIENTS				
Drug	**Dosing**	**PM before Surgery**	**AM of Surgery**	Notes
ORAL AGENTS				
Acarbose (Precose)	With meals	Take	Hold	Take usual dose in pm; hold in am
Alogliptin (Nesina)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Canagliflozin (Invokana)	Daily	Hold	Hold	Hold two days prior to surgery*
Dapagliflozin (Farxiga)	Daily	Hold	Hold	Hold two days prior to surgery*
Empagliflozin (Jardiance)	Daily	Hold	Hold	Hold two days prior to surgery*
Ertugliflozin (Steglatro)	Daily	Hold	Hold	Hold two days prior to surgery*
Glimepiride (Amaryl)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Glipizide (Glucotrol)	Daily/BID	Take	Hold	If taken in pm, take usual dose; hold in am
Glyburide (Diabeta, Glynase)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Linagliptin (Tradjenta)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Nateglinide (Starlix)	With meals	Take	Hold	Take usual dose in pm, hold in am
Metformin +/- XR (Glucophage)	Daily/BID	Hold	Hold	Hold the pm before and day of surgery
Pioglitazone (Actos)	Daily	Take	Hold	If taken in pm, take usual dose, hold in am
Repaglinide (Prandin)	With meals	Take	Hold	Take usual dose in pm, hold in am
Rosiglitazone (Avandia)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Saxagliptin (Onglyza)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Semaglutide (Rybelsus)	Daily	Hold	Hold	Hold the day of surgery
Sitagliptin (Januvia)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
COMBINATION ORALS				
Alogliptin/Metformin (Kazano)	Daily	Hold	Hold	Hold the pm before and day of surgery
Alogliptin/Pioglitazone (Oseni)	Daily	Take	Hold	Hold the day of surgery
Canagliflozin/Metformin (Invokamet)	Daily	Hold	Hold	Hold two days prior to surgery*
Dapagliflozin/Metformin (Xigduo)	Daily	Hold	Hold	Hold two days prior to surgery*
Empagliflozin/Linagliptin (Tradjenta)	Daily	Hold	Hold	Hold two days prior to surgery*
Empagliflozin/Metformin (Synjardy)	Daily	Hold	Hold	Hold two days prior to surgery*
Ertugliflozin/Metformin (Segluromet)	Daily	Hold	Hold	Hold two days prior to surgery*
Ertugliflozin/Sitagliptin (Steglujan)	Daily	Hold	Hold	Hold two days prior to surgery*
Glimepiride/Pioglitazone (Duetact)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Glimepiride/Rosiglitazone (Avandaryl)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
Glipizide/Metformin (Metaglip)	Daily	Hold	Hold	Hold the pm before and day of surgery
Glyburide/Metformin (Glucovance)	Daily	Hold	Hold	Hold the pm before and day of surgery
Linagliptin/Metformin (Jentadueto)	Daily	Hold	Hold	Hold the pm before and day of surgery
Metformin/Pioglitazone (ActoPlus Met)	Daily	Hold	Hold	Hold the pm before and day of surgery
Metformin/Repaglinide (PrandiMet)	Daily	Hold	Hold	Hold the pm before and day of surgery
Metformin/Rosiglitazone (Avandamet)	Daily	Hold	Hold	Hold the pm before and day of surgery
Metformin/Saxagliptin (Komiglyze)	Daily	Hold	Hold	Hold the pm before and day of surgery
Metformin/Sitagliptin (Janumet)	Daily	Hold	Hold	Hold the pm before and day of surgery
Simvastatin/Sitagliptin (Juvisync)	Daily	Take	Hold	If taken in pm, take usual dose; hold in am
*May not be feasible to hold >1 day for ASCs, please hold at least one day prior to scheduled surgery				

NON-INSULIN INJECTABLES - GLP1 Agonists				
Dulaglutide (Trulicity)	Weekly	Hold	Hold	Hold for 7 days prior to surgery *Inform PCP/Endocrinologist of med hold, appreciate recs if bridging necessary
Exenatide (Byetta)	BID	Hold (if possible)	Hold	Hold the day of surgery
Exenatide XR (Bydureon)	Weekly	Hold	Hold	Hold for 7 days prior to surgery *Inform PCP/Endocrinologist of med hold, appreciate recs if bridging necessary
Liraglutide (Victoza/Saxenda)	Daily	Hold (if possible)	Hold	Hold the day of surgery
Lixisenatide (Adlyxin)	Daily	Hold (if possible)	Hold	Hold the day of surgery
Pramlintide (SymlinPen)	With Meals	Hold (if possible)	Hold	Hold the day of surgery
Semaglutide (Rybelsus)	Daily	Hold	Hold	Hold the day of surgery
Semaglutide (Ozempic/Wegovy)	Weekly	Hold	Hold	Hold for 7 days prior to surgery *Inform PCP/Endocrinologist of med hold, appreciate recs if bridging necessary

a. **INSULIN PUMPS:**
   i. Instruct these patients to contact their endocrinologist or diabetes educator for guidance.
   ii. No nutritional insulin bolus after 12 midnight since the patient will not be eating
   iii. Morning of the Procedure
      1. Set a temporary basal rate reduction of ½ of the usual rate, beginning at 6 am
      2. Patient should notify the providers at the procedure:
         a. Current pump rate
         b. Time and amount of most recent correction dose

b. **DISPOSABLE INSULIN PATCH DEVICE (V-GO):**
   i. Instruct these patients to contact their endocrinologist or diabetes educator for additional guidelines and consideration of transition to SQ insulin
   ii. No nutritional insulin bolus after 12 midnight since the patient will not be eating
   iii. Morning of the Procedure
      1. Set a temporary basal rate reduction of ½ of the usual rate, beginning starting at 6 am
      2. Check the blood glucose and correct as per table above
      3. Remove the patch at least 2 hours prior to the procedure

H. NEUROLOGIC MEDICATIONS

a. Most neurologic medications can and **should be continued in the perioperative period**. When discontinuation is necessary for a surgery, consultation with the prescribing provider needs to be undertaken.

b. **ANTI-EPILEPTICS:** Continue up to and including the DOS
   i. Examples: **Carbamazepine (Tegretol), Levetiracetam (Keppra), Gabapentin (Neurontin), Oxcarbazepine (Trileptal), Phenobarbital, Phenytoin, Topiramate (Topamax)**
   ii. Patients should be instructed to take these medications in order to avoid seizures.
   iii. Exception: Felbamate (Felbatol) must be taken with food or milk. Scheduling these patients should take into consideration the risk of delaying a medication dose as patients

may not be able to both take their medication on schedule and conform with the NPO guidelines.

c. **PARKINSON'S DISEASE MEDICATIONS:** Continue up to and including the DOS
   i. Examples: **Carbidopa-levodopa (Sinemet), dopamine agonists (Bromocriptime, Ramipexole, Cabergoline, Ropinirole), Benztropine (Cogentin), MAO-Is (Selegiline, Rasagiline)**

d. Although some of these medications have interactions with medications given in the perioperative period, the risk of a Parkinsonian flare outweighs this risk.

e. However, certain medications should be avoided in the perioperative period:
   i. Patients on MAO-Is: Avoid **Ephedrine which may lead to hypertensive crisis as well as Tramadol (Ultram), Dextromethorphan (Robitussin), Meperidine (Demerol), and Methylene Blue which may cause serotonin syndrome.**
   ii. All patients: Avoid: **Metoclopramide (Reglan), Promethazine (Phenergan), Prochlorperazine (Compazine), Haloperidol (Haldol) and Risperidone (Risperdal)** which can cause a Parkinsonian flare

f. **DEMENTIA MEDICATIONS**
   i. Examples: **Acetylcholinesterase inhibitors (Rivastigmine, Galantamine, Donepezil), NMDA receptor antagonist (Memantine)** See also the section on Antiepileptics and the section on Psychiatric Medications for: SSRIs, Antipsychotics, and Anxiolytics.
   ii. Acetylcholinesterase Inhibitors:
      1. MAC or regional anesthesia: continue up to and on DOS
      2. General anesthesia: may need to be held due to prolonged neuromuscular blockade. Discontinuation would need to be discussed with the prescribing provider. The following are general guidelines:
      3. **Galantamine (Razadyne), Rivastigmine (Exelon)**: Hold the day prior and DOS. Because of the short half-life, two days of withholding rivastigmine or galantamine should result in normal return of acetylcholinesterase function.
      4. **Donepezil** (Aricept): Hold the DOS. Donepezil has a half-life of 70 hr and would need to be discontinued for two weeks prior to surgery. Therefore, it is typically continued. Long term discontinuation can be considered for high risk surgeries in consultation with the prescribing provider.
      5. NMDA Receptor Antagonist: **Memantine** (Namenda) can continue up to and on DOS

g. **MYASTHENIA GRAVIS MEDICATIONS:** Continue up to and including the DOS
   i. Examples: **Anticholinesterases (Pyridostigmine, neostigmine), Steroids, Immunomodulators (rituximab, methotrexate, cyclosporine, cyclophosphamide, azathioprine, tacrolimus)**
   ii. To avoid triggering a myasthenic crisis all anticholinesterases and steroids should be continued and taken on the morning of surgery. For surgeries scheduled in the afternoon in patients taking anticholinesterases three or four times a day, they should be counseled to bring their medication with them in order to take it at the usual time.

I. PSYCHOTROPIC AGENTS

a. Most psychiatric agents can be continued in the perioperative period. However, some agents can have deleterious effects in patients receiving anesthesia. Any cessation or discontinuation of medication needs to be a collaborative decision between the prescribing provider and the anesthesiologist to balance the risk of a medication interaction with the risk of a relapse.

b. ANTI-DEPRESSANTS:

i. Selective Serotonin and Norepinephrine Reuptake Inhibitors (SSRIs and SNRIs):
1. **Examples: Fluoxetine (Prozac), Sertraline (Zoloft), Escitalopram (Lexapro), Venlafaxine (Effexor), Duloxetine (Cymbalta)**
2. Most patients can continue SSRI's up to and including the DOS.
3. However, SSRIs can increase the risk of bleeding and some patients undergoing high risk procedures (e.g. neurosurgery) may need to discontinue the SSRI via a taper over several weeks under consultation with a psychiatrist.
4. *Avoid: Methylene Blue which may cause serotonin syndrome.*

ii. Tri- and tetra-cyclic antidepressants:
1. Examples: **Amitriptyline, Desipramine (Norpramin) Nortriptyline (Pamelor)**
2. Continue TCAs up to and including the DOS
3. TCAs can contribute to serotonin syndrome and patients on these medications should not receive tramadol, meperidine or methylene blue. Additionally, scopolamine or atropine have increased risk of confusion and arrhythmia risk from norepinephrine and epinephrine are increased.

iii. Monoamine Oxidase Inhibitors:
1. Examples: **Isocarboxazid (Marplan), Tranylcypromine (Parnate), Phenlzine (Nardil)**
2. The decision to continue or discontinue must be made by the anesthesiologist and psychiatrist. Patients at high risk for relapse with temporary withdrawal may need to continue. When they are discontinued, a two week taper is necessary. In either case, the prescribing psychiatrist should be consulted

c. MOOD STABILIZERS:

i. Examples: **Lithium and Valproate**
ii. Continue up to and including the DOS
iii. Patients on chronic lithium may have renal and thyroid impairment.

d. ANTI-PSYCHOTICS:

i. Examples: **Haloperidol (Haldol), Olanzapine (Zyprexa), Risperidone (Risperdal), Quetiapine (Seroquel)**
ii. Continue up to and including the DOS
iii. Interactions with medications given in the perioperative period can increase the risk of sedation, neuroleptic malignant syndrome, hypotension or QTc prolongation.

e. ANXIOLYTICS:

i. Examples: **Benzodiazepines (Lorazepam, Diazepam), Buspirone (Buspar)**
ii. Continue up to and including the DOS
1. Abrupt withdrawl of benzodiazepines causes a withdrawal syndrome which may result in seizures

f. STIMULANTS:

i. Examples: **Dextroamphetamine (Adderall) Methylphenidate (Ritalin), Dexmethylphenidate (Focalin), Lisdexamfetamine (Vyvanse), Methylphenidate (Concerta)**
ii. Extended Release formulation: hold for 24 hours (example: Focalin XR, Adderall XR, Etc)
iii. Otherwise, hold the morning of the DOS

J. OTHER MEDICATIONS

a. ANTI-RETROVIRAL/ANTI-VIRALS:

i. Examples: **Tenofovir (Viread), Lamivudine (Epivir), Emtricitabine (Emtriva), Efavirenz (Sustiva), Interferon, Peramivir (Rapivab), Anamivir (Relenza), Oseltamivir (Tamiflu)**

ii. Continue up to and including DOS

iii. For HIV, Hepatitis or Influenza treatment or prevention

b. DIET MEDICATIONS:

i. **Phentermine**: Hold for 2-7 days prior to surgery

ii. **Contrave (naltrexone/bupropion)**: Hold 24-48 hours prior to surgery

iii. GLP1-Agonists (for diabetes and weight loss) - *SEE NON-INSULIN INJECTABLES TABLE ON PAGE 13*

1. Examples: **Semaglutide (Ozempic and Wegovy), Tirzepatide (Mounjaro), Liraglutide (Victoza, Saxenda)**
2. Weekly injections: Hold GLP-1 agonists a week prior to the procedure/surgery
    a. Diabetics: Inform PCP/endocrinologist of medication hold, appreciate recommendations if bridging necessary
3. Daily Injections: Hold GLP-1 agonist DOS and IF POSSIBLE, day prior to surgery

iv. SGLT-2-Inhibitors

1. Examples: **Canagliflozin, Dapagliflozin, Empagliflozin**
2. Hold 2 days prior to surgery if feasible, >24 hours minimum at ACSs

c. GASTROINTESTINAL AGENTS:

i. Examples: **Ranitidine (Zantac), Famotidine (Pepcid), Omeprazole (Prilosec), Lansoprazole (Prevacid)**

ii. Continue up to and including DOS

d. HERBAL SUPPLEMENTS/VITAMINS:

i. Because herbal supplements are unregulated by the FDA, contain varying amounts of medications and often have additives, we recommend cessation of herbal supplements for 1-2 weeks prior to surgery. Vitamins can be continued.

ii. Discontinue the following herbal supplements for the minimum amount of time listed below:

1. Ephedra: hold 24-48 hours: increases MI/CVA risk
2. Fish Oil: hold 7 days: increased bleeding risk
3. Garlic: hold 7 days: increased bleeding risk
4. Ginkgo: hold 36 hours: increased bleeding risk
5. Ginseng: hold 7 days: increased bleeding and hypoglycemia risk
6. Kava: hold 24 hours: increased sedation
7. Kratom: Taper to lowest possible dose before surgery. See “Drugs of Abuse” section.
8. Ma-Huang: hold 24-48 hours: increases MI/CVA risk
9. St. John’s Wort: hold 7 days: inhibits CYP-450 enzymes and effects drug metabolism
10. Valerian: Taper two weeks prior to surgery or continue until DOS: increased sedation. There is a withdrawal syndrome if abruptly discontinued.

iii. Continue: Calcium, Folic Acid, Iron, Melatonin, Multi/Prenatal-vitamin (confirm that it does not include any of the items in the discontinue list), Probiotic, Vitamins A, B, C, etc.

e. **IMMUNOSUPPRESSANTS:**
   i. Examples: **Azathioprine (Imuran), Sirolumus (Rapamune), Etanercept (Enbrel)**
   ii. Patients on immunosuppressants should continue these medications in the perioperative period. If a surgeon recommends interruption of therapy, this should be approved and coordinated by the prescribing providers.

f. **NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS):**
   i. Examples: **Ibuprofen, Naproxen, Aspirin, Celecoxib (Celebrex), Rofecoxib (Vioxx)**
   ii. COX inhibitors increase bleeding risk while selective COX-2 inhibitors can impair renal function. Both may increase myocardial infarction risk.
   iii. Patients with Coronary stents: continue ASA 81 up to and including the DOS
   iv. Other patients: Discontinue for 1 week prior to surgery if possible

g. **OVER THE COUNTER MEDICATIONS:**
   i. Allergy medications: continue DOS
   ii. Cough/Cold medications: Hold for 24 hours prior to surgery. Note: elective surgery may be postponed in patients with an active cough or cold.

h. **PULMONARY AGENTS:**
   i. Examples: **Albuterol (Proventil), Ipratropium Bromide (Atrovent), Levalbuterol (Xopenex) Fluticasone (Flovent), Budesonide (Pulmicort), Fluticasone + Salmeterol (Advair) Budesonide + Formoterol (Symbicort), Cromolyn Sodium (Intal), Monteleukast (Singulair), Theophylline (Elixophyllin)**
   ii. All inhaled and oral medications taken for COPD or Asthma should be continued

i. **UROLOGIC** :
   i. Benign Prostatic Hyperplasia:
      1. Examples: **Doxazosin (Cardura), Tamsulosin (Flomax), Silodosin (Rapaflo)**
      2. Continue up to and including DOS
   ii. Erectile Dysfunction:
      1. Examples: **Sildenafil (Viagra), Tadalafil (Cialis)**
      2. Hold for 24 hours prior to surgery (continue if used for pulmonary hypertension)