POLICY TITLE:	**Pre-Procedure Testing and Medication Management Guidelines**		
POLICY NUMBER:	MSHS 123	**POLICY OWNER:**	Perioperative and Procedural Service System Policies
ORIGINAL DATE OF ISSUE:	6/2018	**LAST REVIEWED DATE:**	4/11/2025
EFFECTIVE DATE:			

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I. PURPOSE

This document is a guideline for pre-procedure testing and medication management for patients undergoing elective procedures in the main operating rooms and major procedural areas (e.g. cardiac catheterization, electrophysiology, endoscopy, interventional radiology).

II. POLICY

Mount Sinai Health System clinically optimizes patients for procedures using best practice clinical guidelines such as those provided in this policy. Wherever possible, system policies are intended to replace hospital or other local policies.

III. SCOPE

Adherence to this policy applies to all members of the Mount Sinai Health System workforce including, but not limited to: employees, medical staff, volunteers, students, and other persons performing work for or at Mount Sinai Health System.

IV. PROCEDURE

A. Pre-Procedure Testing Guidelines

- The minimum requirements are as follows:

a. **ßHCG** urine or serum test within 24 hours of the scheduled procedure time if either of the following exists:

- A person of child-bearing potential and age ≥ 12 years old regardless of the onset of menstruation.
- A person with an established menstrual cycle who has menstruated within prior 12 months.

i. Exemptions:

a. This is <u>not</u> required if there is a known pregnancy, or if a bilateral tubal sterilization (e.g., tubal ligation, salpingectomy) or hysterectomy was performed.

ii. A pregnancy test should not be performed before 28 days after a delivery or termination of pregnancy.

b. Refusal of pregnancy testing:

- For persons of child-bearing potential who have capacity and are >/= 18 years old who refuse pregnancy testing, the case should either be cancelled, or the provider should discuss the risks, benefits, and alternatives of proceeding, complete the Refusal of Pregnancy Testing and Release Form (MR-1706) with the patient, and document this conversation in the medical record.
- For a minor or patients who lack capacity who require pregnancy testing as per above, pregnancy testing is required for elective cases thus the pregnancy waiver cannot be used in these situations. If a pregnancy test is not obtained for whatever reason (for instance in emergent cases), the decision to proceed or not is at the discretion of the provider with the patient or health care proxy's agreement. This should be documented in the medical record.

c. **Glucose** on day of procedure if there is a history of diabetes mellitus.

d. **Potassium** within 24 hours of the scheduled procedure time if the patient is on dialysis, or in preparation for dialysis.

e. **ECG** within 6 months of the planned procedure if <u>any</u> of the following exists:

- Age ≥ 65 AND undergoing operations with a higher risk of cardiac morbidity and mortality without known cardiac disease

***Higher risk surgery includes: cardiac, intraperitoneal, thoracic, major vascular, neurosurgery, major ENT, and major orthopedic**

- History of CAD, arrhythmia, PAD, ischemic CVA, structural heart disease, congestive heart failure, or symptoms of cardiac disease, insulin-requiring diabetes (for adults only), ESRD on dialysis

**ECG is <u>not</u> required if the patient is undergoing low risk procedures of relatively short duration and minimal blood loss (e.g. cataract extraction, minor plastic surgery, breast lumpectomy, non-advanced endoscopic procedures)*

f. **Type & Screen and Complete Blood Count** if there is potential for significant blood loss during the procedure, or if the patient has a history of anemia or other hematologic disorder that may require transfusion (please refer to the blood ordering schedule to identify cases with potential for significant blood loss).

Coagulation studies are reasonable to send for patients who meet any of the following criteria: (i) have a known personal history of abnormal or excessive bleeding, (ii) have a family member with a known bleeding disorder or a family member with history of abnormal or excessive bleeding, (iii) are holding warfarin for surgery and require an INR check prior to the procedure or neuraxial anesthetic.

g. **Chest radiograph** if there is a history of significant cardiopulmonary disease with new or worsening signs/symptoms present.

h. Additional testing based on the patient's underlying condition and the risk of surgery should be considered.
-For example, in patients with or at risk for diabetes who are scheduled for elective non-elective cardiac surgery (NCS), preoperative hemoglobin A1c (HbA1C) testing is reasonable if it has not been performed in </=3 months.

i. For patients who refuse testing, providers should discuss the risks, benefits, and alternatives to proceeding without the required testing and document this conversation.

- Commonly suggested practice based on pre-existing conditions:

  - In patients with a history of stroke or transient ischemic attack, it is reasonable to delay elective non-elective surgery for >/= 3 months after the most recent cerebrovascular event to reduce the incidence of recurrent stroke, major adverse cardiac event (MACE), or both.

  - Incorporate frailty assessment (FRAIL scale) for patients >/=65 and patients </=64 with perceived frailty who are having elevated risk surgeries.

B. Pregnant patients undergoing non-obstetrical surgical procedures under anesthesia

Non-emergent cases require pre-operative consultation prior to the day of surgery. Elective surgeries should be postponed until after delivery whenever possible. Surgical candidates with non-obstetrical conditions that could increase risk of poor perinatal outcome for the fetus or mother should be managed surgically when appropriate. Determination of perinatal risks will often require consultation with Maternal-fetal medicine physicians.

Medically necessary surgery should never be delayed regardless of trimester as this can adversely affect perinatal outcomes for the mother and fetus. Given the complexities that arise when caring for a maternal-fetal dyad, the following is recommended preoperatively in the case of a known pregnancy or a patient with a positive pregnancy test (excluding delivery or termination of pregnancy in the previous 28 days, or known current fetal demise):

- Ultrasound determination of gestational age if not previously documented.
- Assessment of fetal viability must be performed pre- and postoperatively (i.e., check fetal heart rate)
- Explanation of fetal risks and benefits of proceeding with surgery documented in the medical record.
- The pregnant patient should be screened for venous thromboembolism risk and should have the appropriate perioperative prophylaxis administered.
- For pregnancies < 22 weeks gestation:
    a. Consultation by a Mount Sinai Health System privileged obstetrician or MFM (maternal fetal medicine) specialist pre-operatively with documentation in the medical record.

- For pregnancies Ill 22 weeks gestation:

    b. The surgery must be performed at a facility with obstetrical services (hospitals with a labor and delivery unit). Note, even in urgent situations, the patient should be transferred to a facility with obstetrical services when possible.
    c. Pregnancies **beyond or equal to 22wks gestational age** require consultation with a Mount Sinai Health System privileged MFM specialist and must be performed at a facility with obstetrical services (hospitals with a labor and delivery unit) at which time the following may be addressed:
        i. Steroid administration to hasten fetal lung maturation
        ii. The option of continuous fetal monitoring intra-operatively in which case a labor and delivery nurse/manager must be notified
        iii. Informed consent for the possibility of urgent cesarean delivery in the setting of non-reassuring fetal heartrate assessment intra/postoperatively
        iv. Need for postoperative contraction monitoring
        v. Pre and post- procedure NST (Non-stress test)
        vi. Possible need for coordination with neonatal services
    d. Confirm immediate availability of a Mount Sinai Health System privileged obstetrician or MFM (maternal fetal medicine specialist) who can intervene if needed during the procedure.
    e. **For emergent/urgent cases recommend pre-operative consultation prior surgery (clinical acuity permitting). OBGYN should be notified intra-op or post-op if pre-op consult could not be obtained.**

i. In the event the patient is not clinically stable enough to be transferred to a facility with OB services or a fetal assessment cannot be performed, proceed with the emergency procedure for the mother and transfer to a facility with OB services when clinically stable.

Medication Management Guidelines

***Below medications should NOT be stopped without a good reason and/or in consultation with prescribing provider:**
-Immunosuppression drugs in a transplant patient
-Antiretroviral drugs in a HIV patient
-Any drugs with risk of withdrawal (including suboxone Appendix2)
-Parkinson's medications
-Seizure medications
-Inhalers
-Beta-blockers

***Unless indicated otherwise, medications can be given AM of surgery with a small sip of clear liquid**

Part 1: Cardiac Medications

CARDIAC MEDICATIONS	Recommendation	Considerations	References
Beta-blockers	• Continue therapy up to and including day of surgery	• Patients who take beta blockers are at risk for ischemia with abrupt withdrawal • Discontinuing beta blockers immediately after surgery may increase the risk of postoperative cardiovascular morbidity and mortality therefore consider substituting via IV • Perioperative beta blockade is associated with a reduction in 30-day and 1-year mortality • Do not start within 24 hours of surgery and in patients scheduled for elective non-cardiac surgery who has a new indication for beta blockade, beta blockers should be initiated before surgery optimally >7 days to permit assessments of tolerability and drug titration (as there is an increased risk of stroke and mortality) • Consider holding only if large blood loss is anticipated	*Am Heart J* 2001;141:148 *Anesthesiology* 2010;113:794-805 *British Journal of Anaesthesia* 2019Aug; 123(2):97-100 *Circulation: ACC/AHA* 2024
Alpha 2 Agonists (i.e. clonidine, tizanidine)	• Continue therapy up to and including day of surgery • Substitute transdermal clonidine if impaired absorption • Recommend continuing therapy if already on an agent, but	• Large studies have found that preoperative initiation of low dose clonidine resulted in increased harm • For patients already taking these agents, abrupt withdrawal can precipitate rebound hypertension	*N Engl J Med* 2014;370:1504 *Arch Intern Med* 1981;141:1125-1127

	not initiating preoperatively		
Calcium Channel Blockers	• Continue therapy up to and including day of surgery	• It is not generally advisable to start calcium channel blockers (CCBs) de novo prior to surgery unless there is a specific indication for their use	*Circulation: ACC/AHA* 2024
ACE Inhibitors Angiotensin Receptor Blockers (ARBs) Angiotensin Receptor Neprilysin Inhibitors (ARNI)	• In patients with well-controlled BP having elevated-risk surgery, omission 24 hours before surgery may help limit intraoperative hypotension. The approach to managing the perioperative use of these medications can be individualized • Resume by postoperative day 2 unless hemodynamically unstable or acute kidney injury present	• In patients with HFREF on chronic RAASi, peri-operative continuation is reasonable	*JAMA Cardiol.* 2017;2:181-187 *JAMA* 2024Sept24;332(12):970-978 *Circulation: ACC/AHA* 2024
Diuretics	• Consider holding AM of surgery	• If patients require diuretics for heart failure, decision should be individualized	*Heart Lung 1996; 25:31*
Statins	• Continue statins up to and including	• Systematic review of observational studies found an association between perioperative statin use and a reduction in	*BMJ* 2006;333:1149 *N Engl J Med*

	day of surgery for patients already on statin therapy	postoperative acute coronary syndrome and mortality • Randomized trials have also supported use of statins for patients undergoing vascular surgery and patients at risk of cardiovascular complications	2009;361:980 *Ann Surg.* 2009;249:921 *Ann Intensive Care* 8, 95 (2018)

Part 2: Antithrombotic Medications

May also reference MSHS Periprocedural Management of Antithrombotics Guidelines for recommendations on management of anticoagulant and antiplatelet medications.

For patients planned for neuraxial anesthesia, please refer to the Neuraxial Anesthesia of this document

I. PROCESS

1. Assess bleeding risk of procedure
2. Assess risk of thrombosis
3. Determine whether bridging with a short-acting anticoagulant is required
4. Determine the timing of the anticoagulant interruption preoperatively
5. Determine the timing of resumption of anticoagulant postoperatively

II. BLEEDING RISK ASSESSMENT

- Consider procedural bleeding risk along with patient-specific bleeding risk factors
- Higher bleeding risk may require more conservative perioperative management
- For minimal bleeding risk procedures, anticoagulation may be continued without interruption based on clinician's discretion

Table 1: Procedural Bleed Risk	
Bleeding Risk	**Procedure**
High (30-day risk of major bleed greater than 2%)	• Major surgery with extensive tissue injury • Cancer surgery, especially solid tumor resection (lung, esophagus, • gastric, colon, hepatobiliary, pancreatic) • Major orthopedic surgery, including shoulder replacement surgery • Reconstructive plastic surgery • Major thoracic surgery • Urologic or GI surgery, especially anastomosis surgery • Transurethral prostate resection, bladder resection, or tumor ablation • Nephrectomy, kidney biopsy • Colonic polyp resection • Bowel resection • Percutaneous endoscopic gastrostomy placement, endoscopic • retrograde cholangiopancreatography • Surgery in highly vascular organs (kidneys, liver, spleen) • Cardiac, intracranial, or spinal surgery • Any major operation (procedure duration > 45 min) • Neuraxial anesthesia (see separate guideline for recommendations) • Epidural injections
Low-Moderate (30-day risk of major bleed 0 to 2%)	• Arthroscopy • Cutaneous/lymph node biopsies • Foot/hand surgery • Coronary angiography

	• GI endoscopy ± biopsy • Colonoscopy ± biopsy • Abdominal hysterectomy • Laparoscopic cholecystectomy • Abdominal hernia repair • Hemorrhoidal surgery • Bronchoscopy ± biopsy • Pacemaker or cardioverter-defibrillator device implantation
Minimal (30-day risk of major bleed approximately 0%)	• Minor dermatologic procedures (excision of basal and squamous cell skin cancers, actinic keratoses, and premalignant or cancerous skin nevi) • Ophthalmologic (cataract) procedures • Minor dental procedures (dental extractions, restorations, prosthetics, endodontics), dental cleanings, fillings

III. PATIENT THROMBOSIS RISK ASSESSMENT AND STRATIFICATON

Table 2: Thrombosis Risk Stratification

Thrombosis Risk Category	Mechanical Heart Valve	Atrial Fibrillation	Venous Thromboembolism
High **(>10% risk of annual TE)**	• Mitral valve with major risk factors for stroke[a] • Caged ball or tilting-disc valve in mitral/aortic position • Recent (< 3 mo) stroke or TIA or other high-risk stroke situations[b]	• CHADS-VASc score ≥ 7 • Recent (< 3 mo) stroke or TIA • Rheumatic valvular heart disease	• Recent (< 3 mo and especially 1 mo) VTE • Severe thrombophilia such as Antiphospholipid syndrome • Active cancer associated with high VTE risk[c]
Moderate (4-10% risk of annual TE)	Bileaflet AVR with major risk factors for stroke[a]	CHADS-VASc Score 5-6	• VTE within past 3-12 mo • Recurrent VTE • Non-severe thrombophilia (heterozygous factor V Leiden or prothrombin gene G20210A mutation) • Active cancer or recent history of cancer
Low (<4% risk of annual TE)	Bileaflet AVR without major risk factors for stroke[a]	CHADS-VASc=1-4 (and no prior stroke or TIA)	VTE >12 mo ago

TE = Thromboembolism; AVR= Aortic Valve Replacement; CHADS-VASc=congestive heart failure, hypertension, age ≥75 years, diabetes mellitus, prior stroke or transient ischemic attack, vascular disease history, age ≥65 years, female sex; VTE = Venous thromboembolism; TIA= Transient ischemic attack

[a]Multiple prior strokes, prior perioperative stroke, or prior valve thrombosis

[b]Atrial fibrillation, prior stroke or transient ischemic attack/hypertension, diabetes, congestive heart failure, and age >75 years

[c]Pancreatic cancer, myeloproliferative disorders, primary brain cancer, gastric cancer, and esophageal cancer.

IV. MANAGEMENT OF DIRECT ORAL ANTICOAGULANTS (DOACs)

- Perioperative bridging with parenteral agent is not required for patients requiring DOAC interruption for elective surgery/procedure
- Re-initiation of DOAC postop depends on surgical hemostasis. May consider alternative VTE prophylaxis until it is safe to resume therapeutic dose DOAC in the postoperative period

- Duration of withholding and restarting direct oral anticoagulants needs to be decided upon based on patient (i.e. renal dysfunction), surgical, and anesthetic factors (i.e. regional anesthesia).
- If DOACs are being used for anticoagulation after a percutaneous coronary intervention (PCI), please refer to the section on anticoagulation management of the PCI patient having a non-cardiac procedure.

Table 3. Periprocedural Cessation/Re-Initiation of DOACs				
Renal Function	**Pre-Operative Period**		**Post-Operative Period**	
	Low Bleed Risk	**High Bleed Risk**	**Low Bleed Risk**	**High Bleed Risk**
Apixaban/Rivaroxaban				
CrCl ≥ 30	Hold 1 day preop	Hold 2 days preop	Resume 1 day postop	Resume 2 – 3 days postop
CrCl < 30	Hold 2 days preop	Hold 3 days preop		
Dabigatran				
CrCl ≥ 50	Hold 1 day preop	Hold 2 days preop	Resume 1 day postop	Resume 2 – 3 days postop
CrCl < 30-50	Hold 2 days preop	Hold 4 days preop		
CrCl <30	Seek specialist advice*			
Edoxaban				
CrCl ≥ 30	Hold 1 day preop	Hold 2 days preop	Resume 1 day postop	Resume 2 – 3 days postop
CrCl <30	Seek specialist advice*			

V. MANAGEMENT OF WARFARIN

- If warfarin interruption is necessary based on procedural bleed risk assessment, consider the thrombosis risk to determine whether perioperative bridging is indicated.
- Each patient should be assessed for their risk of peri- operative thromboembolism and bleeding and whether to bridge based on these competing risks and benefits. Refer to above and 2022 Chest guidelines on perioperative management of antithrombotic therapy
- An INR in the normal range is especially important in patients undergoing surgery associated with a high bleeding risk (e.g., intracranial, spinal) or if neuraxial anesthesia is to be used (see below)

Table 4. Perioperative Cessation/Re-initiation of Warfarin			
Preoperative Cessation			
Risk of Thrombosis[a]	Bridging with LMWH/UFH[b]	Pre-Operative Monitoring and Bridging Instructions[c]	Surgery Day
High	Recommended	Hold 5 daily doses of warfarin before procedure Consider 6-7 days with advanced age or higher INR goals Start bridge therapy 3 days before surgery or as guided by an INR. • Consider checking INR 3-4 days before surgery and every 1-2 days until INR is subtherapeutic • See tables 5 and 6 for bridging management Check INR within 24 hours prior to surgery to assure INR goal has been attained. If INR is not at goal, consider giving Vitamin K PO 1-2.5mg	Consult proceduralist if INR >1.5
Moderate	May be considered on case-by-case basis	If bridging is required, refer to instructions for "High" risk of thrombosis If bridging therapy is NOT required, refer to instructions for "Low" risk of thrombosis.	
Low	Not Recommended	Withhold 5 daily doses of warfarin before procedure Check INR within 24 hours prior to surgery to assure INR goal	

		has been attained. If INR is not at goal, consider giving Vitamin K PO 1-2.5mg	
Postoperative Re-initiation			
Warfarin may be resumed at patient's maintenance dose within 24 hours after procedure if hemostasis is achieved • Additional loading or boost doses of warfarin are not recommended. Postprocedural bridging with LMWH or UFH may be considered in patients with moderate or high risk of thrombosis • Low bleed risk: start therapeutic parenteral anticoagulation 24h postop • High bleed risk: start therapeutic parenteral anticoagulation at least 48-72h postop			
[a]See Table 2 [b]Therapeutic dosing (enoxaparin SQ 1 mg/kg BID or 1.5 mg QD; UFH per institutional protocol) [c]Hold bridging therapy before procedure LMWH table 6minimum 24 hours; or UFH table 5)			

VI. MANAGEMENT OF HEPARIN

Table 5. Periprocedural Cessation/Re-initiation of Heparin		
	Cessation	**Re-initiation [a,b]**
Prophylactic UFH	Hold 8-12h preop (1 dose depending on dosing frequency) if high bleed risk	Resume after hemostasis
Treatment UFH	Hold 4-6h preop	Low bleed risk: Resume 24h postop [c] High bleed risk: Resume 48-72h postop [c]
[a]Once hemostasis is achieved [c]Resume at same infusion rate (without bolus) if therapeutic prior to cessation		

VII. MANAGEMENT OF LMWH

Table 6. Periprocedural Cessation/Re-initiation of Enoxaparin		
	Cessation	**Re-initiation [a]**
Prophylactic Enoxaparin	Hold 12-24h preop	Low bleed risk: Resume ≥6-12h postop High bleed risk: Resume 24-48h postop
Treatment Enoxaparin	Daily dosing: administer half the daily dose in the morning of the day prior to surgery Q12H dosing: hold evening dose the day prior to surgery	Low bleed risk: Resume 12-24h postop High bleed risk: Resume 48-72h postop
[a]Once hemostasis is achieved		

VIII. MANAGEMENT OF FONDAPARINUX

Table 7. Periprocedural Cessation/Re-initiation of Fondaparinux		
	Cessation	**Re-initiation [a,]**
Prophylactic Fondaparinux	Normal renal function: Hold 24-48h preop Renal impairment (CrCl 30-50 mL/min): Hold 72 – 96 h preop	Prophylaxis dose: ≥6-8h postop
Treatment Fondaparinux	Normal renal function: Hold 72h preop Renal impairment (CrCl 30-50 mL/min): Hold 5- 7 days preop	CAUTION has a long half-life (17-21h) Consider shorter-acting agent until patient demonstrates tolerance of anticoagulation.
[a]Once hemostasis is achieved		

IX. MANAGEMENT OF PATIENTS ON ANTICOAGULANTS WHO REQUIRE *URGENT* SURGERY

- Stop anticoagulant
- Consider delaying surgery until adequate time has lapsed for drug clearance or coagulation screen is normal

In life-threatening situations, consider a reversal agent (see Guidelines for Reversal of Antithrombotic)

X. MANAGEMENT OF ANTIPLATELETS

Table 8. Periprocedural Cessation of Antiplatelets

	Recommendation	Considerations	References
Aspirin (ASA)	• Hold ASA for 1 week prior to elective non-cardiac surgery when being given for primary and secondary prevention for CAD • ASA may be continued in patients scheduled to undergo CABG surgery at surgeon's discretion, considering patient's other bleeding risk factors. For patients with coronary stents who are only on ASA (not dual antiplatelet therapy [DAPT]), ASA should be continued except for neurosurgical, spine or non-cataract ophthalmologic surgery	• In cases where the surgeon feels there is a high bleeding risk on ASA, a consensus regarding whether to hold the medication should be reached by the surgeon and anesthesiologist	Devereaux PJ, et al. N Engl J Med 2014; 370(16):1494-1503 Myles PS *et al.* N Engl J Med 2016;374:728-737 CHEST 2022; 162(5):e207-e243 Sousa-Uva M et al. Eur J Cardiothorac Surg. 2018;53:5-33
P2Y12 Inhibitors	If necessary to hold and there is no contraindication to holding: • Ticagrelor: hold 3 days • Clopidogrel: hold 5 days • Prasugrel: hold 7 days	• In cases where the surgeon feels there is a high bleeding risk on P2Y12 receptor antagonist, a consensus regarding whether to hold the medication should be reached by the surgeon, anesthesiologist, PCP, and cardiologist as needed.	2016 ACC/AHA Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients with Coronary Artery Disease. JACC. 2016. Sousa-Uva M et al. Eur J Cardiothorac Surg. 2018;53:5-33 Valgimigli M et al. Eur J Cardiothorac Surg. 2018;53:34-78
Dual Antiplatelet Therapy (DAPT)	See below		

Part 3: Perioperative Management of Patients Undergoing Non-Cardiac Surgery with Prior Percutaneous Coronary Intervention

- **Duration of Dual Antiplatelet Therapy**
    a. In patients status post percutaneous coronary intervention (PCI), for either stable ischemic heart disease or acute coronary syndrome, dual antiplatelet therapy (DAPT) consisting of aspirin plus a $P2Y_{12}$ receptor antagonist such as clopidogrel, ticagrelor, or prasugrel should be continued uninterrupted for at least **1 month for bare metal stents (BMS) and ideally 6 months for drug eluting stents (DES).**
        i. It is reasonable to reduce the delay to 1 - 3 months based on a multidisciplinary evaluation of the risks of delaying surgery versus early discontinuation of DAPT.

    b. If elective surgery/procedure requires interruption of DAPT under most circumstances, it should be delayed for at least 6 months following PCI. The delay can be reduced to 3 months for time sensitive NCS based on a multidisciplinary evaluation of the risks of delaying surgery versus early discontinuation of DAPT.

    c. If an emergent or urgent/time-sensitive surgery/procedure is required within 1 month of a percutaneous coronary intervention and DAPT needs to be interrupted, the use of intravenous Cangrelor should be considered, in consultation with an interventional cardiologist who holds Clinical Privileges at one of the Mount Sinai Health System hospitals. Of note, the most recent 2024 AHA/ACC/ACS/ASNC/HRS/SCA/SCCT/SCMR/SVM Guidelines for Perioperative Cardiovascular Management for Noncardiac Surgery do not provide specific recommendations on Cangrelor bridging. In contrast, the 2022 ESC Guidelines on cardiovascular assessment and management of patients undergoing noncardiac surgery suggest that bridging with Cangrelor might be appropriate in high-risk cases where DAPT cannot be interrupted before surgery (e.g., in patients with a very high risk of stent thrombosis, recent PCI, or acute coronary syndrome), particularly within one month of PCI. Given that evidence from the literature and expert opinion consistently emphasize the highest ischemic risk occurs within the first month after PCI, it is reasonable to consider the use of an intravenous platelet inhibitor for bridging in such cases.

    d. If elective surgery/procedure requires interruption of DAPT under most circumstances it should be delayed for at least **6 months** following PCI. If the surgery/procedure is required before this time has elapsed, then a consensus should be reached among the consulting cardiologist, anesthesiologist, and surgeon about the strategy for interruption of DAPT. Generally, $P2Y_{12}$ receptor antagonist therapy may be held temporarily while aspirin is continued with a minor risk of stent thrombosis and myocardial infarction.

    e. If a surgery/procedure is required after **6 months** have elapsed following a PCI, DAPT can be interrupted under most circumstances with less risk, but ideally aspirin should be continued. Ticagrelor should be held 3-5 days prior to the intended surgery/procedure, clopidogrel, 5 days, and prasugrel, 7 days.

    f. There are certain particularly high risk scenarios that deserve extra attention to detail. Acute coronary syndromes treated with PCI should be treated with DAPT for at least **12 months** and truly elective surgery/procedures should ideally be delayed until after that period of time. Patients with left main or complex interventions (e.g. proximal LAD, bifurcation, chronic total occlusion, >3 stents) should have minimal cessation of the DAPT duration under careful medical/cardiology supervision.

        i. It is reasonable to abbreviate this delay to 6 months based on a multidisciplinary evaluation of the risks of delaying surgery versus early discontinuation of DAPT.

    g. If the patient is status post percutaneous coronary intervention (PCI) for >6 months, and is on P2Y12 monotherapy or another anticoagulants such as warfarin or a direct acting oral anticoagulant (DOAC) (e.g. apixaban, dabigatran, rivaroxaban) for treatment of patients with

certain medical conditions (e.g. atrial fibrillation, deep vein thromboembolism, or mechanical heart valve), consensus should be reached among the consulting cardiologist (preferably a cardiologist who holds Clinical Privileges at one of the Mount Sinai Health System hospitals), anesthesiologist, and surgeon about the anticoagulation strategy.

- **Cardiology Consultation for Patients with Intracoronary Stent in Preceding 6 month period**:

  All patients undergoing **urgent surgery/procedure** AND status-post PCI **anytime in the 6 months preceding surgery** should be seen by a **cardiologist who holds Clinical Privileges at one of the Mount Sinai Health System** for consultation. **The consultation should be arranged by the surgeon.**

  a. If an emergent or urgent/time-sensitive surgery or procedure is required within 3 months after PCI with stent implantation performed in the setting of acute coronary syndrome, and DAPT needs to be interrupted, the use of intravenous cangrelor should be considered in consultation with an interventional cardiologist holding Clinical Privileges at one of the Mount Sinai Health System hospitals.

  b. For patients who have undergone coronary stent placement within the **past six months**, and where the risks of discontinuing dual antiplatelet therapy (DAPT) outweigh the benefits—particularly in the presence of **high-risk features for stent thrombosis** (e.g., prior stent thrombosis, complex PCI involving the left main artery, bifurcation treated with two stents, multivessel or multisession PCI, long/diffuse calcific disease, residual stent malposition or dissection, or poorly controlled diabetes)—**Cangrelor** may be considered as bridging therapy. This decision should be made in consultation with an interventional cardiologist holding Clinical Privileges at a Mount Sinai Health System hospital.

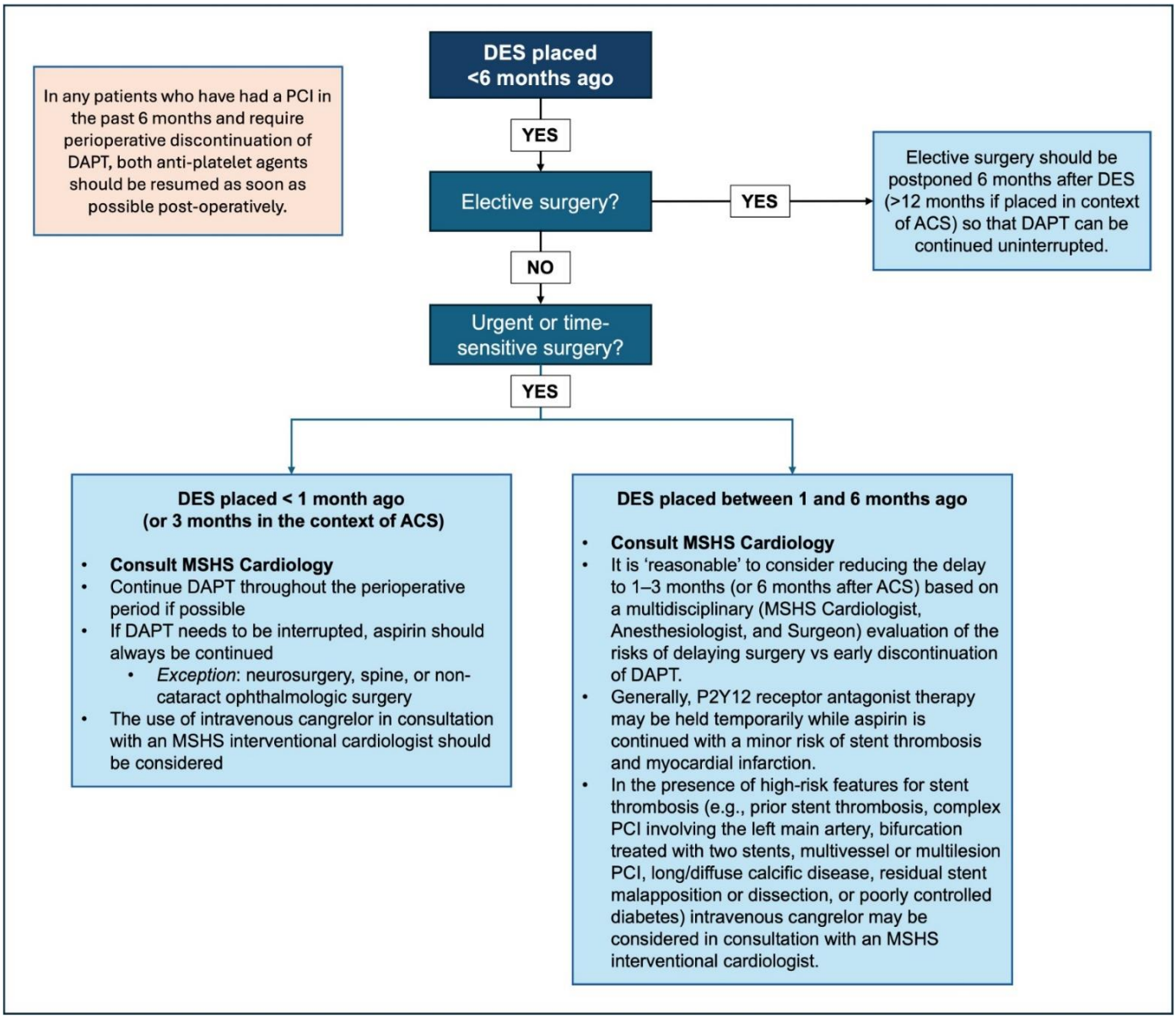
  c. Aspirin should always be continued unless the procedure is a neurosurgical, spine, or non-cataract ophthalmologic surgery. In patients who have had a PCI in the past 6 months, completed 1 month of DAPT and require perioperative discontinuation of DAPT, both anti-platelet agents should be resumed as soon as possible post-operatively with an appropriate loading dose.

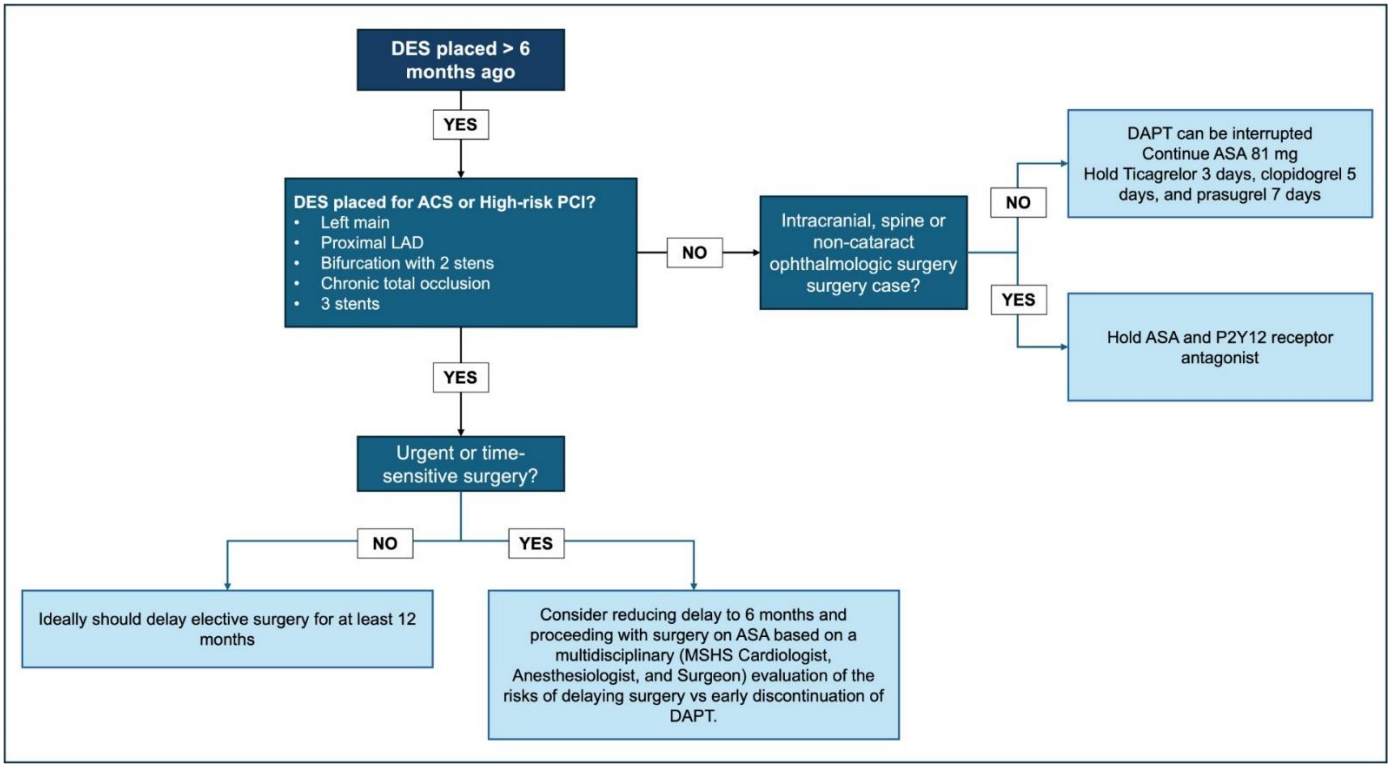
- **Guidelines for Patients with Intracoronary Stent Remotely (>6 months prior):**

  a. If more than 6 months has elapsed since intracoronary stent placement, the patient does not need to be seen by a cardiologist who holds Clinical Privileges at one of the Mount Sinai Health System hospitals or in a Pre-operative testing clinic (unless the patient would have needed to do so independent of his/her coronary artery disease or has one of the 3 conditions noted in # 5 above). However, in all such patients, Aspirin should always be continued except for the following circumstances:
     a. Neurosurgical or spine surgery
     b. In the rare circumstance where the surgeon feels the risk of bleeding even with aspirin monotherapy in the perioperative period exceeds anticipated benefits and the treating providers (patient's cardiologist, anesthesiologist, and surgeon) have reached a consensus to temporarily stop aspirin

  b. For any surgery (**non-elective or elective),** if a patient with a history of an intracoronary stent placed more than 6 months prior appears on the day of their surgery or procedure having erroneously stopped aspirin, a consultation must occur between the surgeon, anesthesiologist, cardiologist, and patient to decide whether the case needs to be rescheduled. **Depending on the time-sensitivity of the surgery/procedure balanced against the cardiovascular risks related to the patient having had discontinued aspirin**, the patient may either be rescheduled or be given aspirin prior to proceeding. If the latter strategy is chosen, the patient should be given aspirin (325 mg, chewed, with sips of water if needed) and the case should proceed after 30-60 minutes after administration.

c. At all times, the patient should be informed of the risks and benefits of proceeding with the surgery or procedure especially if there was a deviation in optimal management


In any patients who have had a PCI in the past 6 months and require perioperative discontinuation of DAPT, both anti-platelet agents should be resumed as soon as possible post-operatively.
DES placed <6 months ago
YES
Elective surgery?
YES
Elective surgery should be postponed 6 months after DES (>12 months if placed in context of ACS) so that DAPT can be continued uninterrupted.
NO
Urgent or time-sensitive surgery?
YES
DES placed < 1 month ago (or 3 months in the context of ACS)
• Consult MSHS Cardiology
• Continue DAPT throughout the perioperative period if possible
• If DAPT needs to be interrupted, aspirin should always be continued
• Exception: neurosurgery, spine, or non-cataract ophthalmologic surgery
• The use of intravenous cangrelor in consultation with an MSHS interventional cardiologist should be considered
DES placed between 1 and 6 months ago
• Consult MSHS Cardiology
• It is 'reasonable' to consider reducing the delay to 1–3 months (or 6 months after ACS) based on a multidisciplinary (MSHS Cardiologist, Anesthesiologist, and Surgeon) evaluation of the risks of delaying surgery vs early discontinuation of DAPT.
• Generally, P2Y12 receptor antagonist therapy may be held temporarily while aspirin is continued with a minor risk of stent thrombosis and myocardial infarction.
• In the presence of high-risk features for stent thrombosis (e.g., prior stent thrombosis, complex PCI involving the left main artery, bifurcation treated with two stents, multivessel or multilesion PCI, long/diffuse calcific disease, residual stent malapposition or dissection, or poorly controlled diabetes) intravenous cangrelor may be considered in consultation with an MSHS interventional cardiologist.


DES placed > 6 months ago
YES
DES placed for ACS or High-risk PCI?
• Left main
• Proximal LAD
• Bifurcation with 2 stens
• Chronic total occlusion
• 3 stents
NO
Intracranial, spine or non-cataract ophthalmologic surgery surgery case?
NO
DAPT can be interrupted
Continue ASA 81 mg
Hold Ticagrelor 3 days, clopidogrel 5 days, and prasugrel 7 days
YES
Hold ASA and P2Y12 receptor antagonist
YES
Urgent or time-sensitive surgery?
NO
YES
Ideally should delay elective surgery for at least 12 months
Consider reducing delay to 6 months and proceeding with surgery on ASA based on a multidisciplinary (MSHS Cardiologist, Anesthesiologist, and Surgeon) evaluation of the risks of delaying surgery vs early discontinuation of DAPT.

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Part 3: Other Medications

ENDOCRINE	Recommendation	Considerations	References
Insulin	• Hold prandial short- acting insulin while the patient is NPO • Basal (intermediate- or long-acting) insulins generally should be continued at 60% to 80% of the usual dose on the morning of surgery or the evening before surgery, depending on the patient's usual insulin schedule. • Consider endocrine consult for patients with an insulin pump		*Circulation: ACC/AHA* 2024
Sodium-glucose-cotransporter-2 (SGLT2) inhibitors	• Hold canagliflozin, dapagliflozin, and empagliflozin at least three days before and ertugliflozin at least four days before scheduled surgery.	• These agents increase the risk of urinary tract infections, hypovolemia, AKI, and euglycemic diabetic ketoacidosis • Euglycemic diabetic ketoacidosis may be underrecognized in the post-operative period given its unusual presentation • If not held prior to a low risk procedure after which prompt resumption of oral intake is expected, consider adequate hydration with a dextrose containing solution (e.g., 25-50 grams dextrose/hour).	*Anaesthesia. 2018;73(8):1008* *Endocr Pract. 2016;22(6):753* *Circulation: ACC/AHA* 2024
GLP-1 Receptor Agonists	• See Appendix 1 below	• See Appendix 1 below	*See Appendix 1 below*

Glucocorticoids	• For patients who have been taking exogenous glucocorticoids of any dose for less than 3 weeks, continue same glucocorticoid regimen perioperatively • For patients taking prednisone > 5 mg/day for three weeks or more, consider additional perioperative steroid dosing. • Minor procedures: Take usual morning steroid dose. No supplement. • Moderate surgical stress: Take usual morning steroid dose. Give hydrocortisone 50mg IV immediately prior to the procedure and hydrocortisone 25mg every 8 hours for 24 hours, then resume usual dose. • Major surgical stress: Take usual morning steroid dose. Give hydrocortisone 100mg immediately prior to procedure and 50mg every 8 hours for 24 hours, then taper dose by half per day to maintenance dose. • If another steroid equivalent to 100 mg hydrocortisone is given prior to incision (e.g., dexamethasone 4 mg, methylprednisolone 20 mg), hydrocortisone does not need to be given as well.)	• Chronic glucocorticoid therapy can suppress the hypothalamic- pituitary-adrenal (HPA) axis • During times of stress, such as surgery, the adrenal glands may not respond appropriately. • Consult with Endocrinology if the patient has known adrenal insufficiency	*Anesthesiology 2017; 127:1: 166-172* *Ann Surg 1994;219:416* *Eur J Intern Med* 2008;19:461-7 *Med Clin North Am* 2001;85:1311-7 *J Clin Endocrinol Metab* 1987;64:986

Part 4: Neuraxial Anesthesia

Anticoagulants for VTE prophylaxis			
Medication	Prior to neuraxial anesthesia	With Neuraxial catheter in place	After spinal or epidural catheter removal
Enoxaparin (Lovenox®) 30mg SQ Q12 hours 40mg SQ daily	12 hours	Only with enoxaparin 40mg once daily	4 hours after catheter removal or 12 hours after placement, whichever is at a later time
Fondaparinux (Arixtra®) 2.5mg SQ daily	120 hours	Contraindicated	6 hours
Heparin, Unfractionated 5000 units Q8-12 hours	4 hours	Monitor platelets if >4 days of therapy	1 hour
Heparin, Unfractionated 7500-10000 units Q8-12 hours	See algorithm at for OB patients at the bottom of the tables		
Apixaban (Eliquis®) 2.5mg Q12 hours	72 hours*	Contraindicated	6 hours
Rivaroxaban (Xarelto®) 10mg daily	72 hours*	Contraindicated	6 hours
Betrixaban (Bevyxxa®) 40-80mg daily (Prophylactic dosing)	72 Hours*	Contraindicated	6 hours
Anticoagulants at Therapeutic doses			
Medication	Prior to neuraxial anesthesia	With Neuraxial catheter in place	After spinal or epidural catheter removal
Apixaban (Eliquis®) 2.5-10mg Q12 hours	72 hours*	Contraindicated	6 hours
Rivaroxaban (Xarelto®) 15-20mg daily or Q12 hours	72 hours*	Contraindicated	6 hours
Edoxaban (Savaysa®) 30-60mg daily	72 hours*	Contraindicated	6 hours
Dabigatran (Pradaxa®) 75-150mg Q12 hours	120 hours*	Contraindicated	6 hours
Enoxaparin (Lovenox®) 1mg/kg BID or 1.5mg/kg daily	24 hours	Contraindicated	4 hours after catheter removal or 24 hours after placement, whichever is at a later timer
Fondaparinux (Arixtra®) 5-10mg daily	120 hours	Contraindicated	6 hours
Heparin IV infusion	When PTT <40	Heparinization should be delayed >1hour after catheter placement	1 hour
Warfarin	Initiation of therapy: INR<1.5. Discontinuation of therapy: 5 days and INR normal	Daily INR check, should be removed when INR <1.5	No Delay

*Patients with significant renal disease may require waiting 5 days

GP2b3A Inhibitors			
Medication	Prior to neuraxial anesthesia	With Neuraxial catheter in place	After spinal or epidural catheter removal
Abcixamab (Reopro®)	48 hours	Contraindicated	12 hours
Eptifibatide (Integrellin®)	8 hours	Contraindicated	12 hours
Tirofiban (Aggrostat®)	8 hours	Contraindicated	12 hours

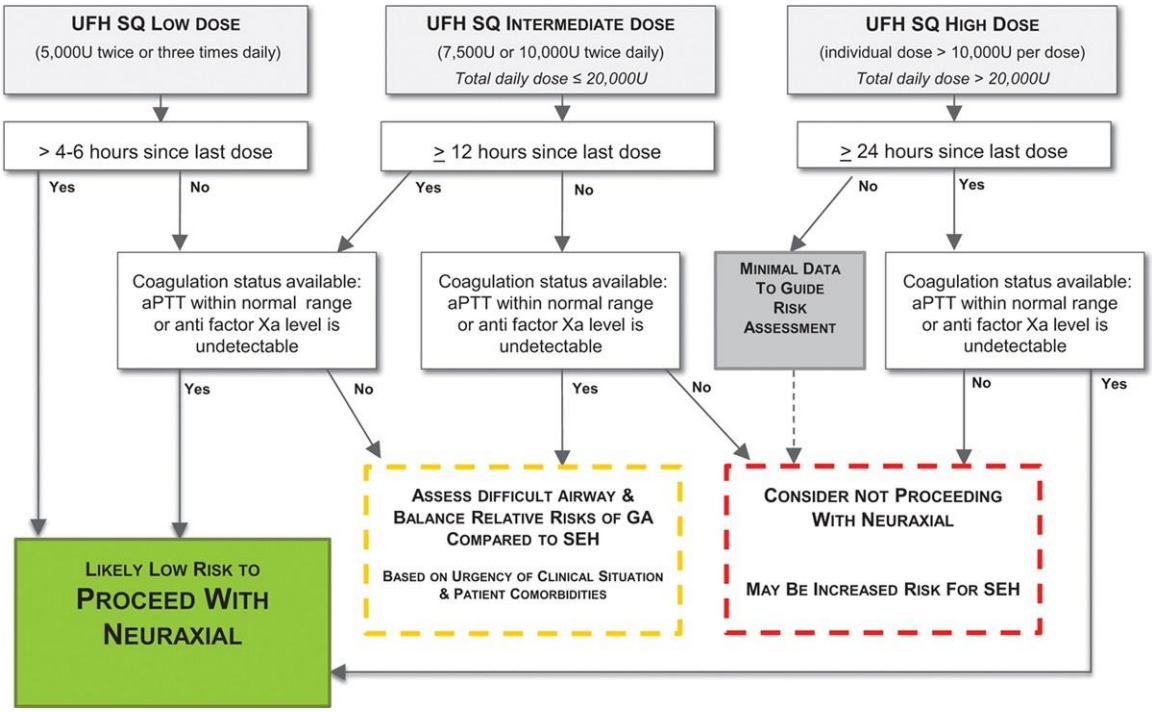
Direct Thrombin Inhibitors			
Medication	Prior to neuraxial anesthesia	With Neuraxial catheter in place	After spinal or epidural catheter removal
Argatroban	When PTT <40	Contraindicated	4 hours
Bivalrudin (Angiomax®)	When PTT <40	Contraindicated	4 hours

Antiplatelet agents			
Medication	Prior to neuraxial anesthesia	With Neuraxial catheter in place	After spinal or epidural catheter removal
Aspirin/NSAIDs	No contraindication	No contraindication	No contraindication
Aspirin/dipyrimadole (Aggrenox®)	2 days	Contraindicated	6 hours
Clopidogrel (Plavix®)	7 days	Contraindicated	6 hours
Prasugrel (Effient®)	10 days	Contraindicated	6 hours
Ticlopidine (Ticlid®)	10 days	Contraindicated	6 hours
Ticagrelor (Brilinta®)	7 days	Contraindicated	6 hours
Cangrelor	3 hours	Contraindicated	24 hours

Thombolytic agents			
Medication	Prior to neuraxial anesthesia	With Neuraxial catheter in place	After spinal or epidural catheter removal
Alteplase 2mg for catheter clearance Max: 4mg/day	No contraindication	Contraindicated	No contraindications
Alteplase Full dose	10 days	Contraindicated	10 days

Other Anticoagulants			
Medication	Prior to neuraxial anesthesia	With Neuraxial catheter in place	After spinal or epidural catheter removal
Cilostazol (Pletal®)	2 days	Contraindicated	N/A
Vorapaxar (Zontivity®)	Contraindicated	Contraindicated	N/A

Figure 1. Algorithm for intermediate and high dose SQ heparin for the Obstetric Patient



Decision aid for urgent or emergent neuraxial procedures in the obstetric patient receiving UFH. *Assume normal renal function, body weight > 40 kg, and no other contraindications to neuraxial anesthesia. aPTT indicates activated partial thromboplastin time; GA, general anesthesia; SEH, spinal epidural hematoma; SQ, subcutaneous; UFH, unfractionated heparin. Note: This SOAP consensus statement is not intended to set out a legal standard of care and does not replace medical care or the judgment of the responsible medical professional considering all the circumstances presented by an individual patient.

Part 5: Special Considerations for Patients Using Substances (alcohol, tobacco, cannabis, opioids, cocaine/methamphetamine, inhalants, and hallucinogens)

Background: Substance use is prevalent and is a risk factor for increased perioperative complications including infection, cardiovascular events, respiratory complications, bleeding, and impaired wound healing.

What to do before the day of surgery:

- Recent substance use should **not** lead to immediate cancellation of non-urgent surgery.
- If a patient has had recent use of a substance, there should be a patient-centered discussion regarding the benefits and risks of continuing with the planned elective surgery.
- An interdisciplinary discussion with addiction specialists may help optimize safety and clinical care for the perioperative patient with substance use disorder.
    - Assess for the presence of a substance use disorder (e.g. addiction) and offer referral to treatment if not already engaged.
    - Toxicology testing can be considered to provide more information perioperatively. Discuss results with addiction, toxicology, and/or lab specialists if interpretation assistance is needed.

What to do on the day of surgery:

- If there is concern for acute intoxication, refer for assessment by an anesthesiologist. Non-urgent surgeries should be rescheduled.

Additional considerations:

- For elective plastic surgery, breast reconstruction, microvascular and elective orthopedic surgeries, recommend tobacco cessation for at least 4 weeks prior to surgery.
- For all surgeries, recommend cocaine cessation for at least 2 days prior to surgery and inhaled cannabis cessation for at least 2 hours.
- For pain management in patients who use opioids, employ multimodal analgesia, and please refer to the System Guideline for patients taking chronic opioids.

Appendix 1:

Mount Sinai Health System (MSHS) Guidelines for the Management of Patients Taking GLP-1 Receptor Agonists Presenting for Procedures Requiring an Anesthetic (7/24)

Situation:

- GLP-1 receptor agonists are widely prescribed to treat diabetes and to promote weight loss. They may also reduce the risk of cardiac disease in some patients.
- These medications decrease gastric emptying and pose a potentially increased risk of a "full stomach", regurgitation and pulmonary aspiration although the exact significance is unknown.

Background:

There is an increased risk of retained gastric contents (RGC) in patients taking these medications. This is the subject of a recent American Society of Anesthesiology "Consensus-Based Guidance."

Assessment:

The Mount Sinai Health System needs guidance for peri-procedural management of patients taking these medications in order to reduce the risk of serious and life threatening pulmonary aspiration.

Guidance: The following guidance are an attempt to mitigate the potential risk of pulmonary aspiration in these patients and to risk stratify them. The risk of pulmonary aspiration can never be eliminated, even when following best practices, and each case must be evaluated on a case by case basis as follows.

1. Discuss the concerns of potential risk of regurgitation and pulmonary aspiration of gastric contents with the proceduralist/surgeon and the patient as part of the routine consent.

2. When possible, the medication should not be taken for a minimum of 1 dosing interval as follows:

How Long Prior to a Procedure Should a GLP-1 Agonist Be Held?				
Brand Name	**Generic Name**	**Usually Administered**		**Instructions* (do not take)**
Ozempic	semaglutide	SQ	Weekly	> 7 days
Wegovy	semaglutide	SQ	Weekly	> 7 days
Rybelsus	semaglutide	PO	Daily	≥ 2 days
Trulicity	dulaglutide	SQ	Weekly	> 7 days
Saxenda	liraglutide	SQ	Daily	≥ 2 days
Victoza	liraglutide	SQ	Daily	≥ 2 days
Byetta	exanetide	SQ	Twice a day	≥ 2 days

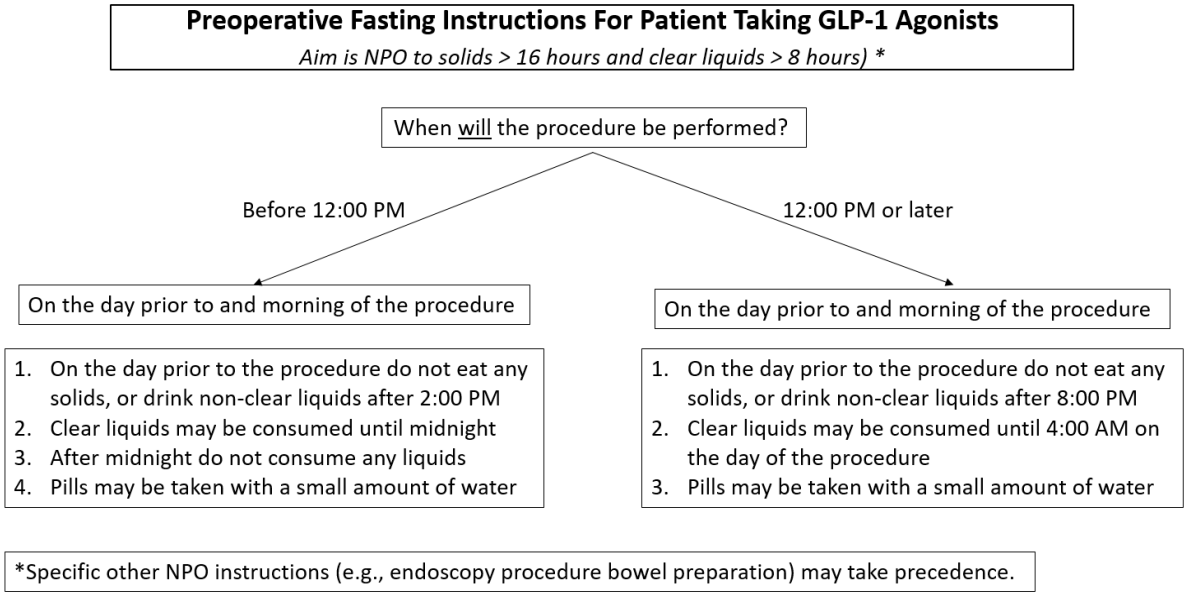
Bydureon	exanetide	SQ	Weekly	> 7 days
Adlyxin	lixisenatide	SQ	Daily	≥ 2 days
Mounjaro	tirzepatide	SQ	Weekly	> 7 days
Zepbound	tirzepatide	SQ	Weekly	> 7 days
**** including day of procedure***				

3. When the medication is not held there may be an increased risk of RGC and a discussion with the patient and proceduralist/surgeon should occur regarding the benefits of proceeding with the procedure versus the risk of pulmonary aspiration. The discussion should be documented in the preoperative note.

4. If the patient has other significant risk factors for aspiration including, severe GERD, prior aspiration, partial bowel obstruction, or current GI symptoms (e.g., bloating, sensation of fullness, abdominal distention, retching, nausea, vomiting) consider scheduling the procedure in a hospital setting especially if potential tracheal intubation and gastric ultrasound is desired.

5. NPO guidelines are as follows:

In cases where the NPO guidance has not been followed a risk/benefit assessment should be undertaken with the patient and proceduralist/surgeon about whether or not to proceed with the procedure. This discussion should be documented in the anesthesia preoperative assessment.



6. Consider the risks and benefits of alternative anesthetic plans (e.g., regional anesthesia without sedation or “light sedation” with intact airway reflexes vs. “deep sedation” with blunted airway reflexes vs. GA with tracheal tube and rapid sequence induction).

7. Consider the use of adjuncts to mitigate the chance and risk of aspiration including:
   - Metoclopramide 10 mg intravenous over 1-3 minutes
   - Sodium citrate 30 mL orally immediately before the procedure

- Famotidine 20 mg intravenous > 30 minutes before the procedure, or Pantoprazole 40 mg intravenous > 30 minutes before the procedure

8. Consider the use of gastric ultrasound to provide further information or to aid with risk stratification. Whereas no test is 100% sensitive, the presence of an 'empty stomach' on gastric ultrasound may indicate a decreased risk of RGC and lower the risk of pulmonary aspiration.

9. Patients who have stopped taking a GLP-1 agonist may remain at risk of RGC for an indeterminate time. Routine NPO guidelines should be in effect according to the following schedule:

How Long After Cessation of a GLP-1 Agonist Are Routine NPO Guidelines in Effect?				
Brand Name	**Generic Name**	**Usually Administered**		**Routine NPO Instructions (do not take)**
Ozempic	semaglutide	SQ	Weekly	> 30 days
Wegovy	semaglutide	SQ	Weekly	> 30 days
Rybelsus	semaglutide	PO	Daily	> 7 days
Trulicity	dulaglutide	SQ	Weekly	> 30 days
Saxenda	liraglutide	SQ	Daily	> 7 days
Victoza	liraglutide	SQ	Daily	> 7 days
Byetta	exanetide	SQ	Twice a day	>7 days
Bydureon	exanetide	SQ	Weekly	> 30 days
Adlyxin	lixisenatide	SQ	Daily	> 7 days
Mounjaro	tirzepatide	SQ	Weekly	> 30 days
Zepbound	tirzepatide	SQ	Weekly	> 30 days
**** including day of procedure***				

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Appendix 2: MSHS Perioperative Management of Non-Pregnant Patients on Maintenance Therapy for Opioid Dependence

Buprenorphine, methadone, and naltrexone are pharmacologic therapies indicated for maintenance treatment of opioid use disorder. The appropriate treatment of acute pain in patients on buprenorphine and methadone maintenance includes continuing the patient's baseline opioid requirements to avoid increased pain sensitivity associated with opioid withdrawal. Thus, daily opioid maintenance treatment requirements must be met before attempting to achieve analgesia. These patients have also been shown to have increased pain sensitivity and cross-tolerance to opioid analgesics, therefore adequate pain control will often necessitate higher opioid doses at shorter dosing intervals. All patients on buprenorphine and methadone maintenance should be co-managed with their buprenorphine or methadone provider during the pre- and post-procedure period.

These guidelines are designed for patients maintained on chronic opioids, buprenorphine, methadone or naltrexone therapy undergoing invasive procedures. There is currently a lack of evidence-based studies to direct the management of patients on buprenorphine, methadone, or naltrexone maintenance in the peri-procedural period. Below are guidelines using expert opinion based on pharmacological principles with the intent to avoid subtherapeutic acute pain management while also preventing opioid withdrawal and disruption of opioid use disorder management.

Opioid Dependence Patient Category	Pre-operative Pain Recommendations	Post-operative Pain Recommendations
Chronic Pain on Chronic Opioid Therapy **Inclusion:** Patient on chronic opioids > 2 weeks or with other signs of physical dependence. Does not include patients taking occasional or prn opioids for breakthrough pain.	Continue standing opioid dose the day of surgery. Hold any usual PRN breakthrough opioid doses the day of surgery.	Continue equivalent chronic opioid dose (IV if patient strict NPO) with hold parameters for sedation. For acute postoperative pain, utilize multimodal pain management with non-opioid medications (NSAID, acetaminophen, epidural/spinal analgesia, nerve blocks) as indicated. If opioids are required for breakthrough pain, patients with history of chronic opioid use may require higher than usual doses due to cross tolerance.
Methadone Maintenance Therapy	Confirm methadone dose with patient's opioid treatment program (OTP). Continue usual dose of methadone the day of surgery. The patient may need to arrange home doses of methadone ("medical take home doses") their OTP if they are unable to go to the OTP on the day of surgery. If this is not possible, the patient should receive his or her usual confirmed methadone dose in the pre-operative area.	Continue usual daily methadone dose. If the patient is strict NPO, they should receive 50%-75% of their usual methadone dose given IV, divided into 2-4 doses/day (e.g. if usual dose is 60 mg PO daily, appropriate IV doses would be approximately 15 mg IV BID or 10 mg IV TID). For acute postoperative pain, utilize multimodal pain management with non-opioid medications (NSAID, acetaminophen, epidural/spinal analgesia, nerve blocks) as indicated. If opioids are required for breakthrough pain, patients with history of opioid use disorder may require higher than usual doses due to cross tolerance and increased pain sensitivity.

Buprenorphine Maintenance Therapy	Take AM dose on the day of procedure. Note: Buprenorphine home dose should **not** be routinely discontinued or tapered perioperatively. Decisions must be made in collaboration with patient's buprenorphine prescriber or an addiction specialist. Buprenorphine is typically prescribed as buprenorphine/naloxone sublingual films or tablets and may be referred to by a common brand name Suboxone®.	Continue patient's home dose of buprenorphine post-operatively. Consider splitting patient's totally daily buprenorphine dose into q8h schedule for better pain coverage. If moderate to severe pain anticipated, home dose can be increased to 24mg and split dosed into q8h schedule. For acute postoperative pain, utilize multimodal pain management with non-opioid medications (NSAID, acetaminophen, epidural/spinal analgesia, nerve blocks) as indicated. If opioids are required for breakthrough pain, patients may require higher than usual doses due to cross tolerance and increased pain sensitivity. Select opioids that have relatively high affinity for the receptor (e.g. hydromorphone, fentanyl). If patient requires an opioid agonist in addition to home buprenorphine post-hospitalization, surgeon will prescribe no more than 7 days of this opioid. Communicate with buprenorphine prescriber if changes were made to the buprenorphine total daily dose while admitted.
Naltrexone (oral or depot) Maintenance Therapy	Discontinue oral naltrexone 72 hours before surgery. Discontinue depot naltrexone 1 month prior to elective surgery, if possible. If naltrexone was not discontinued appropriately and anticipated opioid requirements for surgery are high, consider delaying nonurgent procedures.	Utilize multimodal pain management with non-opioid medications (NSAIDs, acetaminophen, epidural/spinal analgesia, nerve blocks) as indicated. If surgery performed emergently or naltrexone was not discontinued prior to surgery, naltrexone should be discontinued postoperatively. If this occurs, higher than usual doses of opioids may be attempted to overcome naltrexone's opioid antagonist effects. This must be done with close observation for respiratory depression.