

## Routine Preoperative Lab Tests for Adult Patients (age ≥ 16 years) Undergoing Elective Surgery

- The grid does not apply to patients undergoing cardiac or cataract surgery.
- For **cataract surgery**, no preoperative lab tests are routinely indicated, but if the patient's condition has deteriorated within the last 6 months, submit lab test results obtained in addressing this deterioration.
- For patients with complex or uncommon surgical or medical conditions, tests beyond what is suggested in this grid may be appropriate.
- Tests are valid for **6 months** provided there has been no interim change in the patient's condition.

<i>Order all indicated tests, based on the type of Surgery, the Patient's Age, Exercise Tolerance, Medical Comorbidities and Drug Therapies</i>	CBC	ECG	Elec	Cr and eGFR	Glc	I N R	P T T	L F T	C X R	Iron Indices
<b>Age, Surgery and Exercise Tolerance (E.T.)</b>										
Minor surgery, age < 50, any E.T.	No routinely indicated tests if patient is otherwise healthy									
Minor surgery, age ≥ 50, E.T. ≥ 4 METs	No routinely indicated tests if patient is otherwise healthy									
Minor surgery, age ≥ 50, E.T. < 4 METs	•	•								
Major surgery, age < 50	•									
Major surgery, age ≥ 50	•	•	•	•						
Vascular surgery	•	•	•	•		•	•			
<b>Medical Comorbidities</b>										
Hypertension		•		•						
Cardiac disease, E.T. ≥ 4 METs		•								
Cardiac disease, E.T. < 4 METs	•	•								
Respiratory disease, E.T. ≥ 4 METs	No routinely indicated tests for this comorbidity									
Respiratory disease, E.T. < 4 METs	•	•								
Stroke/ TIA/ Peripheral Vascular Disease		•								
Renal disease	•	•	•	•						
Liver disease	•		•	•		•		•		
Diabetes mellitus		•	•	•	•					
BMI > 40					•	•		•		
High risk for malnutrition	•		•			•		•		
Thyroid disease			•	Also obtain TSH						
Malignancy (except basal cell ca.)	•								•	
High risk for anemia	•									
High risk for iron deficiency										•
<b>Drug Therapies</b>										
Diuretic, ACE inhibitor, or ARB			•	•						
Coumadin	•					•				
Oral Corticosteroids			•		•					
Digoxin		•	•	Also obtain serum digoxin level						

### Other Preoperative Tests with Specific Indications

**Sickle cell screen:** With appropriate pre and post test counseling, preoperative sickle cell screen should be offered to patients of high risk ethnicity unless it has been previously performed, in which case it should be documented. *High risk ethnicity groups* include: African, Caribbean, Saudi Arabia, Northern Greece, Southern Italy, Southern Turkey and South Central India.

**Antiepileptic drug (AED) levels:** Should be obtained only for patients on Carbamazepine, Phenobarbital, Phenytoin, or Valproic acid who meet at least one of the following criteria: (1) a history of unstable AED levels, (2) a seizure within the last 6 months, or (3) undergoing major gastrointestinal surgery.

## Legend- Tests

<b>Elec</b>	Electrolytes (sodium, potassium, chloride and bicarbonate)
<b>Cr and eGFR</b>	Plasma Creatinine and if available, eGFR
<b>Glc</b>	Fasting plasma glucose
<b>LFT</b>	AST, ALT, Alk Phos, GGT, albumin, total and direct bilirubin
<b>CXR</b>	Chest X-Ray
<b>Iron indices</b>	Serum iron, TIBC and ferritin

## Legend- Patient Characteristics

<b>Major Surgery</b>	Resection of organs (laparoscopic or open incision) in the neck, thorax, pelvis or abdomen, (except laparoscopic cholecystectomy); open vascular surgery (except varicose vein stripping); endovascular procedures; intracranial surgery, head and neck surgery for malignancy (except basal cell carcinoma), spine surgery (except for discectomy), major joint replacement or fusion, surgery involving free flap reconstruction, panniculectomy.
<b>Minor Surgery</b>	Defined by not meeting criteria for major surgery. Includes: eye surgery (except cataract removal), tonsillectomy, nasal septoplasty, breast surgery without free flap reconstruction, direct or laparoscopic inguinal or umbilical hernia repair, diagnostic laparoscopy, tubal ligation, laparoscopic cholecystectomy, uterine D and C, hysteroscopy, endometrial ablation, carpal tunnel repair, dupuytren's contracture release, basal cell ca resection with local reconstruction, arthroscopy, discectomy, endoscopic urology and electroconvulsive therapy (ECT).
<b>E.T. in METs</b>	Exercise tolerance in <b>metabolic equivalents (METs)</b> , as reported by the patient
<b>≥ 4 METs:</b>	Able to complete one or more of the following activities, or a more strenuous activity, without having chest pain or dyspnea: walk up a hill, run a short distance, or climb a flight of stairs.
<b>&lt; 4 METs:</b>	Has chest pain or dyspnea with ≥ 4 METs activities or is unable to complete them for any reason.
<b>Cardiac Disease</b>	MI, Angina, CHF, Valvular heart disease, Atrial fibrillation or other Arrhythmia
<b>Renal Disease</b>	Gross proteinuria or elevated creatinine
<b>Liver Disease</b>	Includes jaundice, hepatitis, cirrhosis, hepatic metastases and ethanol abuse (defined as average intake > 2 standard drinks per day).
<b>High Risk for Malnutrition</b>	Includes BMI < 19, unintentional ≥ 10% body weight loss over previous 6 months, inflammatory bowel disease, oral, esophageal, gastric, and pancreatic malignancy.
<b>High Risk for Anemia</b>	Includes patients with a history of anemia, connective tissue disease (i.e. lupus, rheumatoid arthritis), inflammatory bowel disease, menorrhagia, gross hematuria or gastrointestinal bleeding.
<b>High Risk for Iron Deficiency</b>	Anemic patients with low MCV or high RDW on CBC.
<b>ARB</b>	Angiotensin receptor blocker

## Notes

- Preoperative **pregnancy testing** will be carried out by preoperative staff using existing procedures.
- Preoperative **type and screen** and **group and hold** will be carried out by surgeons and preadmission clinic staff using existing procedures.
- There are no routine indications for preoperative pulmonary function tests, spirometry or arterial blood gases.
- There are no routine indications for preoperative urinalysis, save for specific surgeries, at the surgeon's discretion.
- **Preoperative histories and physicals are also valid for 6 months**, provided there has been no interim change in the patient's condition.