

## Routine Pre-operative Test Protocol

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- For patients with complex or uncommon surgical or medical conditions, test beyond what is suggested in this grid may be appropriate.
- Tests are valid for **3 months** provided there has been no interim change in the patient's condition which is determined by the Registered Nurse in collaboration with the anaesthetist and surgeon in day surgery.
- Elective Cholecystectomy require an extended hepatic profile: ALT, ALP, GGT, Bilirubin and Albumin within 4 weeks to the Day of Surgery. Then consider all patient comorbidities for further preoperative tests required.

<b>Order all indicated tests, based on the type of Surgery, the Patient's Age, Exercise Tolerance, Medical Comorbidities and Drug Therapies</b>	CBC	ECG	Ele c	Cr and eGFR	Glucos e	INR	PTT	Hepatic	CXR
<b>Age, Surgery and Exercise Tolerance (E.T.)</b>									
Minor surgery, age less than 50	No routinely indicated tests if patient is otherwise healthy								
Minor surgery, age greater than or equal to 50, E.T. greater or equal to 4 METs	No routinely indicated tests if patient is otherwise healthy								
Minor surgery, age greater than or equal to 50, E.T. less than 4 METs	•	•							
Major surgery, age less than 50	•			•					
Major surgery, age greater than or equal to 50	•	•	•	•					
Hip and Knee Arthroplasty, Long bone surgery	•	•	•	•	•	•			
<b>Medical Comorbidities</b>									
Hypertension		•		•					
Cardiac disease, E.T. greater than or equal to 4 METs		•							
Cardiac disease, E.T. less than 4 METs	•	•							
Respiratory disease, E.T. greater than or equal to 4 METs	No routinely indicated tests for this comorbidity								
Respiratory disease, E.T. less than 4 METs	•	•							
Stroke / TIA / Peripheral Vascular Disease	•	•							
Renal disease	•	•	•	•	Obtain BUN				
Liver disease	•		•	•		•		•	
Diabetes mellitus		•	•	•	•				
BMI greater than 40					•				
High risk for malnutrition	•		•			•		•	
Thyroid disease			•	Also obtain TSH					
Malignancy (except basal cell ca.)	•								
High risk for anemia	•								
Symptomatic respiratory or cardiac disease (METS <4 – see table below). History of lung cancer or mass									•
<b>Drug Therapies</b>									
Diuretic, ACE inhibitor, or ARB			•	•					
Coumadin, anticoagulants	•					•	•		
Oral Corticosteroids			•		•				
Digoxin		•	•	•					
<b>Transfusion Medicine Indications</b>									
Preoperative <b>Type and Screen</b> will be carried out using existing “Standard Blood Orders for Elective Surgical Procedures” guideline.									

### 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, Phenobarbitol, 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>CBC</b>	Complete blood cell count
<b>ECG</b>	Electrocardiogram
<b>INR</b>	International normalized ratio
<b>PTT</b>	Partial thromboplastin time
<b>Cr and eGFR</b>	Creatinine and estimated Glomerular Filtration Rate
<b>Hepatic</b>	ALT, Alk Phos, will automatically reflex to AST and total bilirubin if initials tests are abnormal
<b>CXR</b>	Chest X-Ray
<b>ACE</b>	Angiotensin-converting enzyme inhibitors
<b>ARB</b>	Angiotensin II receptor blockers

**Legend – Patient Characteristics**

<b>Major Surgery</b>	Resection of organs (laparoscopic or open incision) in the neck, thorax, pelvis or abdomen, (except laparoscopic cholecystectomy); endovascular procedures; intracranial surgery, and neck surgery for malignancy (except basal cell carcinoma), major joint replacement or fusion, surgery involving free flap reconstruction, panniculectomy.	
<b>Minor Surgery</b>	Surgical procedures that do not meet the criteria for major surgery are deemed to be minor surgical procedures.	
<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 less than 19, unintentional greater than or equal to 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>ARB</b>	Angiotensin receptor blocker.	
<b>E.T. in METs</b>	Exercise tolerance refers to the exercise capacity of an individual as measured by their ability to endure exercise and/or the maximum work load achieved during the exercise period. A MET is defined as the resting metabolic rate, the amount of oxygen the body consumes at rest.	
Exercise Tolerance (E.T.) in Metabolic Equivalents (METs)	<b>Greater than and equal to 4 METs</b>	Exercise tolerance in metabolic equivalents (METs), as reported by the patient's response to completing one or more of the following activities or a more strenuous activity, without having chest pain or dyspnea: <ul style="list-style-type: none"> <li>•walk up a hill</li> <li>•climb a flight of stairs</li> <li>•run a short distance</li> <li>•cycling / biking</li> </ul>
	<b>Less than and equal to 4 METs</b>	If a patient has reported to have chest pain or dyspnea during any of the above activities they have a ET less than 4 METs

**Notes**

- Preoperative **pregnancy testing** will be carried out by preoperative staff for females of childbearing age. If female patient has menses they are considered of childbearing age. Exempt: Pts who have had hysterectomy, TA patients, missed abortion, greater than or equal to 55 years of age, if menses within the last 28 days.
- 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 where the mucosa might be breached (causing cystitis/pyelo).
- **Preoperative histories and physicals are also valid for 1 year**, provided there has been no interim change in the patient's condition.