# pre-operative assessment

The **pre-operative assessment** is an opportunity to identify co- morbidities that may lead to **patient complications** due to **anesthesia or surgical procedure, during the operative or post- operative periods.**

Patients scheduled for elective procedures will generally attend a pre-operative assessment *2-4 weeks* before the date of their surgery.

***Premedication*** is using of medications in order to prepare the patient for anesthesia and to help provide optimal conditions for surgery. Specific needs will depend on the individual patient and procedure.

## Goals of preoperative assessment:

1) Screen for and manage co-morbid disease.
2) To assess and minimize risks of anesthesia.
3) To identify need for specialized techniques.
4) To identify need for advanced post-op care.
5) To educate about anesthesia.
6) To obtain informed consent.
7) To avoid unnecessary delays/cancellations.
8) To motivate patients to improve pre-op.

## Minimum preoperative visit components (according to ASA):

1) Medical, anesthesia and medication history.
2) Appropriate physical examination.
3) Review of diagnostic data (ECG, labs, x-rays).
4) Assessment of ASA physical status.
5) Formulation and discussion of anesthesia plan.

Note : ASA American society of anesthesia

## The ASA physical classification:

ASA1: normal healthy patient.
ASA2: Mild systemic disease - no impact on daily life.
ASA3: Severe systemic disease - significant impact on daily life.
ASA4: Severe systemic disease that is a constant threat to life.
ASA5: Moribund, not expected to survive without the operation.
ASA6: Declared brain-dead patient - organ donor.
E: Emergency surgery.

| ASA Classification | Definition | Examples |
|---|---|---|
| **ASA I** | A normal healthy patient | Healthy, non-smoking, no or minimal alcohol use |
| **ASA II** | A patient with mild systemic disease | Mild diseases only without substantive functional limitations. Current smoker, social alcohol drinker, pregnancy, obesity (30<BMI<40), well-controlled DM/HTN, mild lung disease |
| **ASA III** | A patient with severe systemic disease | Substantive functional limitations; One or more moderate to severe diseases. Poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, ESRD undergoing regularly scheduled dialysis, history (>3 months) of MI, CVA, TIA, or CAD/stents. |
| **ASA IV** | A patient with severe systemic disease that is a constant threat to life | Recent (<3 months) MI, CVA, TIA or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, shock, sepsis, DIC, ARD or ESRD not undergoing regularly scheduled dialysis |
| **ASA V** | A moribund patient who is not expected to survive without the operation | Ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction |
| **ASA VI** | A declared brain-dead patient whose organs are being removed for donor purposes | |

## History

**1) Medical problems (current & past).**

- DM, HTN,COPD,CAD,thyroid disorder..
- Regular medications
- Previous surgeries; date:
- 5.Family anesthesia history:
- Problems with anesthesia in family
- type of anesthesia:
- (Pseudocholinesterase deficiency and malignant hyperpyrexia)

**2) Previous anesthesia & related problems.**

- Allergy to drugs
- PONV
- Anesthesia awareness
- Difficult intubation
- Delayed emergence
- Allergies and drug intolerances.
- Medications, alcohol & tobacco.
- Review of systems (include snoring and fatigue).
- Exercise tolerance and physical activity level.

## Physical examine

Minimum requirements:

1) Airway.
2) Heart and lungs.
3) Vital signs including O2 saturation.
4) Height and weight
5) Other Specific examinations depending on the individual patient and procedure.

# Airway Assessment

## Predictors of difficult intubation

- Mallampati classification
- ULBT (upper lip bite test)
- Inter-incisors gap (IID)
- Thyromental distance (TMD)
- Forward movement of mandible
- Document loose or chipped teeth
- Tracheal deviation
- Movement of the Neck

**Modified Mallampati score**:

Used to predict the ease of endotracheal intubation, the score is assessed by asking the patient, in a sitting posture, to open his or her mouth and to protrude the tongue as much as possible.

Class 1 : soft palate , uvula, fauces ,pillar visible .

Class II: Soft palate, major part of uvula, fauces visible.

Class III: Soft palate, base of uvula visible.

Class IV: Only hard palate visible.

A high Mallampati score (class 3 or 4) is associated with more difficult intubation as well as a higher incidence of sleep apnea.



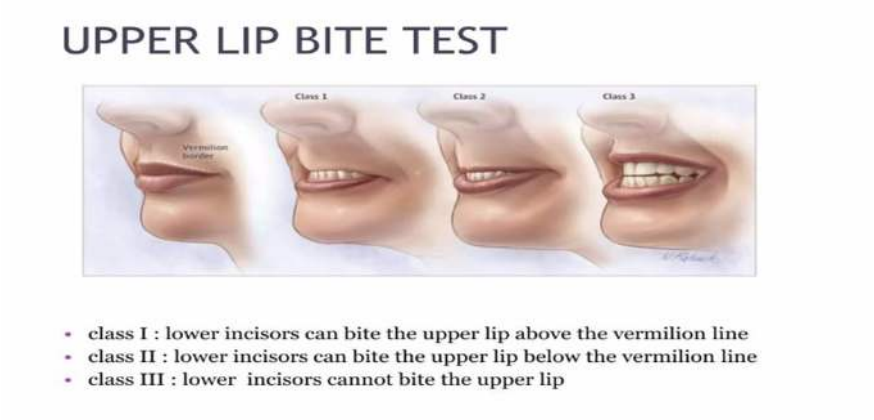

## Thyromental distance (TMD)

Distance from the thyroid cartilage to the mental prominence when the neck is extended fully. Should be 7 cm.



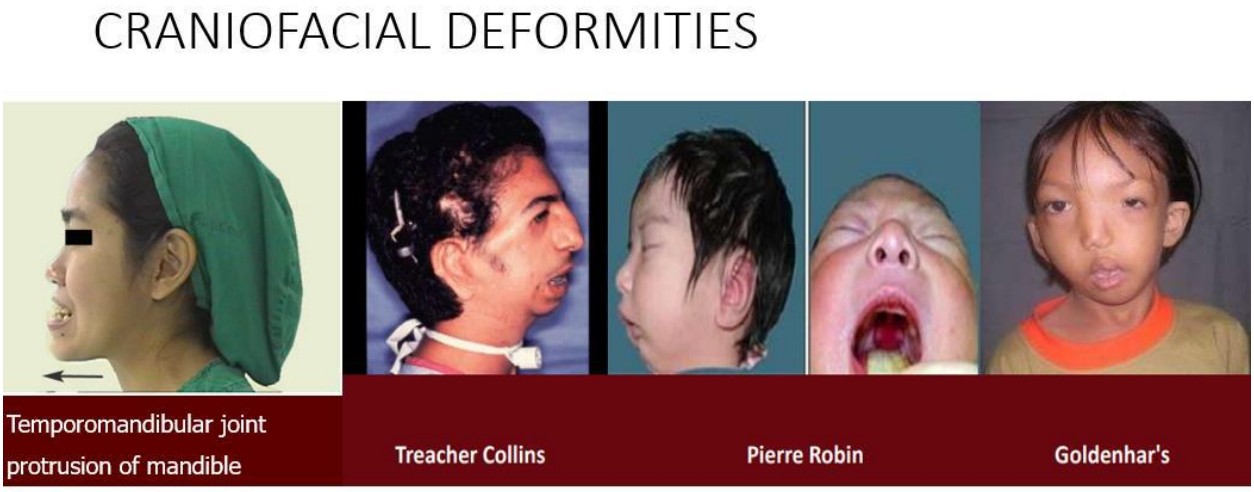

## Sternomental distance (SMD)

Distance from the upper border of the manubrium sterni to the tip of the chin, with the mouth closed and the head fully extended. Should be > 12.5 cm




## Also Look for:

Body: obese? If female: large pendulous breast?
Neck anatomy: short? thick? webbed?
Mouth: limitations (opening)?
Teeth? (number & health) Enlarged tongue? (hypothyroidism, acromegaly & obesity)
Mandible (+TMJ): micrognathia,receding mandible (ask patient to sublux their lower incisor beyond upper incisor) Maxilla: protruding? (buck teeth) |
Face: beard? Facial trauma? |
Nose: nasal passage patency, Head size: Children (ex. hydrocephalus or rickets) | Adults (ex. acromegaly)



## Smoking

• Increased carboxyhemoglobin levels.

• Decrease ciliary function.

• Increase sputum production.

• Nicotine adverse effects on cardiovascular system.

• Preoperative advices:

❖ 2 days cessation can decreases nicotinic effect, improve mucus clearance and decrease carboxyhemoglobin levels

❖ 4-8 weeks of cessation are believed to be needed for postoperative complication reduction

## Asthma

• Obtain information about irritating factors, severity and current disease status.

• Frequents use of bronchodilators, recurrent hospitalization and requirements for systemic steroids are all indicators of severe disease.

• Those who received more than a (burst and taper) of steroids in the previous 6 months should be considered for stress dose perioperatively.

## Respiratory Tract Infection

• Patients presenting on the day of surgery with symptoms and signs of a lower respiratory tract infection should be treated appropriately and postponed to such time that they are symptom free.

• Viral upper respiratory tract infection can cause bronchial reactivity which may persist for 3-4 weeks.
• Unless surgery is urgent, such patients should be postponed for 4 weeks to minimize the risk of postoperative respiratory infection.

Prolonged fasting should be avoided as this is associated with dehydration, increased postoperative nausea and vomiting, electrolyte imbalance and patient distress.
Optimal fasting hours decreases volume and acidity of stomach contents and reduce aspiration and regurgitation risk.

| Ingested material | Minimum fasting hours |
|---|---|
| Clear liquid (water, clear tea, black coffee, fruit juice without pulp) | 2 |
| Breast milk | 4 |
| Formula milk, non huma milk, light meal | 6 |
| Regular or heavy meal | 8 |

**Premedication**: Is the administration of medication before the induction of anesthesia.

## The goal of the premedication was to:

- Relief anxiety
- Sedation
- Amnesia
- Analgesia
- Drying of the airways
- Preventing the autonomic reflex response
- Reduction in the gastric fluid volume and acidity
- Antiemetic activity
- Reduction of anesthesia requirement
- Facilitate smooth induction of anesthesia
- Prophylaxis against allergic reaction.

## Chronic drug used by patients:

- **Drugs to be continued till the day of operation:**

1- Antihypertensive .
2- Diuretics .
3- Cardiac medication .
4- Antidepressants .
5- Anxiolytics .
6- Thyroid medications .
7- Steroids .

- **Drugs to be stopped before the operation:**

1-Aspirin and Plavix 7 day s .
2- NSAID 48 hours **.**
3-Oral hypoglycemic agents – on the day of operation .
4-Insulin decrease or stop the dose of the morning .
5-Warfarin 4 days before the surgery .
6- Heparin 6 hours before operation **.**