

# Anaesthesia for the Obese Patient

## Society for Obesity and Bariatric Anaesthesia

### Pre-operative Evaluation

#### Red Flags

- Poor functional capacity
- Abnormal ECG
- Uncontrolled BP, CCF or IHD
- SpO<sub>2</sub> <94% on air
- If bicarbonate >27, OHS likely
- Previous DVT/PE
- STOP-BANG ≥ 5
- OS-MRS >3
- Metabolic Syndrome
- High NSQIP ACS Risk

Yes  
→

Consider:

- Preoperative CPAP
- Blood Gases / Sleep Studies
- Echocardiogram
- Cardiorespiratory referral
- Experienced Anaesthetist
- Book HDU Bed

No  
→

- May be suitable for day-case surgery



OS-MRS Calculator

[tools.farmacologiaclinica.info](http://tools.farmacologiaclinica.info)



NSQIP ACS Risk Calculator

[riskcalculator.facs.org/RiskCalculator](http://riskcalculator.facs.org/RiskCalculator)



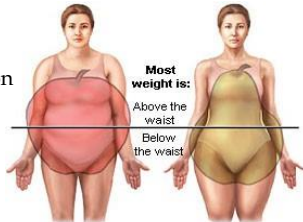
STOPBANG Calculator

[www.stopbang.ca](http://www.stopbang.ca)

#### Central Obesity

(waist > half height)

- Difficult airway/ventilation more likely
- Greater risk of CVS disease/thrombosis
- Higher risk of metabolic syndrome



#### Peripheral Obesity

(Fat outside body cavity)

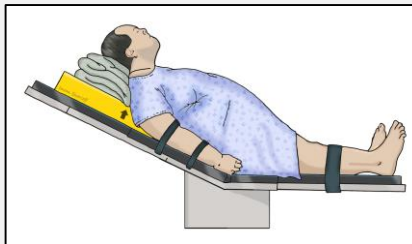
- Less co-morbidity
- Lower risk

### Intra-operative Management

#### Suggested Equipment:

- Suitable bed/trolley and operating table
- Gel padding
- Wide strapping
- Table extensions/arm boards
- Forearm cuff or large BP cuff
- Device or equipment for ramping
- Step for anaesthetist
- Difficult airway equipment
- Videolaryngoscope
- Ventilator capable of PEEP & pressure modes
- Hover mattress or equivalent
- Long spinal, regional and vascular needles
- Ultrasound machine
- Appropriately sized calf compression devices
- Depth of anaesthesia monitoring
- Neuromuscular monitoring
- Sufficient staff to move patient

#### Ramping



- Tragus level with sternum
- Reduces risk of difficult laryngoscopy
- Improves ventilation and pre-oxygenation

#### Anaesthetic Technique:

- Consider premed antacid & analgesia
- Careful glucose control
- DVT prophylaxis
- Self-position on operating table
- Preoxygenate and intubate in ramped/sitting position
- Consider CPAP and HFNO
- Minimal induction to ventilation time
- Commence maintenance promptly
- Tracheal intubation recommended
- Caution with SAD in BMI >40
- Avoid spontaneous ventilation, use PEEP
- Use short-acting inhalationals or TIVA
- Short-acting opioids & multimodal analgesia
- PONV prophylaxis
- Ensure full NMB reversal
- Extubate and recover sitting up

**Lean Body Weight:** This exceeds ideal body weight in the obese and plateaus at:

- ≈100kg for a man
- ≈70kg for a woman

**Ideal Body Weight:** Broca formula

- Men: height (in cm) - 100
- Women: height (in cm) - 105

*If in doubt, titrate and monitor effect*

#### Suggested dosing for anaesthetic drugs

Lean Body Weight (Males Max 100Kg Females Max 70Kg)	Adjusted Body Weight (Ideal plus 40% excess)	Total Body Weight
<ul style="list-style-type: none"> <li>• Propofol induction</li> <li>• Thiopentone</li> <li>• Fentanyl and Alfentanil</li> <li>• Morphine</li> <li>• Non-depolarising NMBDs</li> <li>• Paracetamol</li> <li>• Local Anaesthetics</li> </ul>	<ul style="list-style-type: none"> <li>• Propofol Infusion</li> <li>• Neostigmine (max 5mg)</li> <li>• Sugammadex (read pack insert)</li> <li>• Antibiotics</li> </ul>	<b>Suxamethonium</b> LMWHs (titrate dose with Xa levels)

### Post-operative Care

#### PACU discharge:

- Usual discharge criteria should be met
- SpO<sub>2</sub> should be maintained at pre-op levels with minimal O<sub>2</sub> therapy
- No evidence of hypoventilation

#### OSA or Obesity Hypoventilation Syndrome:

- Sit up and avoid sedatives and post-op opioids
- Reinstate patient's own CPAP if applicable with additional time in recovery until free of apnoeas without stimulation
- Patients untreated, intolerant of CPAP or ineffectively treated (persistent symptoms) are at risk of hypoventilation
- In these cases, IV opioids should be avoided but where necessary, patient should have continuous SpO<sub>2</sub> monitoring and level 2 care must be considered

#### General good ward level practice includes:

- Multimodal analgesia
- Caution with long-acting opioids and sedatives
- Early mobilisation
- Robust thromboprophylaxis regime
- Experienced Consultant Review