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
- SpO2 <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

NSQIP ACS Risk Calculator

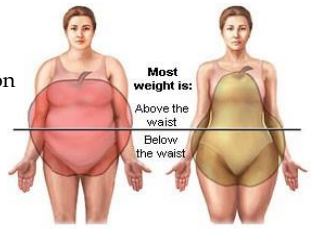
riskcalculator.facs.org/RiskCalculator

STOPBANG Calculator

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)

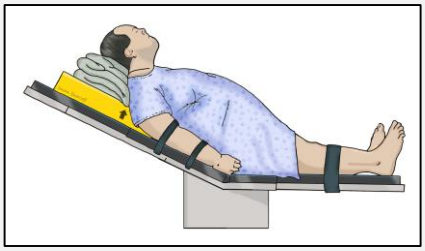
- Less co-morbidity
- Lower risk

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
• **Propofol induction** • **Thiopentone** • **Fentanyl and Alfentanil** • **Morphine** • **Non-depolarising NMBDs** • **Paracetamol** • **Local Anaesthetics**	• **Propofol Infusion** • **Neostigmine** (max 5mg) • **Sugammadex** (read pack insert) • **Antibiotics**	**Suxamethonium** **LMWHs** (titrate dose with Xa levels)

Post-operative Care

PACU discharge:

- Usual discharge criteria should be met
- SpO_2 should be maintained at pre-op levels with minimal O_2 therapy
- No evidence of hypoventilation

General good ward level practice includes:

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

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_2 monitoring and level 2 care must be considered