



## CLINICAL GUIDELINE

# Peri-Operative Management of the Obese Patient

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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### Important Note:

The Intranet version of this document is the only version that is maintained. Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

### Suggested General Approach

- Consider anaesthetising the patient in the operating theatre
- Self positioning on operating table
- Consider siting 2 IV cannulae
- Consider central regional anaesthesia, although a plan for airway management is mandatory.
- Plan for airway & rescue management
- Preoxygenate and induce in the ramped position (consider nasal cannula 15L/min)
- Minimise induction to ventilation interval to avoid desaturation
- Consider intubation dose of rocuronium, see chart below (with calculated dose of sugammadex reversal readily available) vs. suxamethonium
- Avoid spontaneous ventilation
- Tracheal intubation recommended
- Use short-acting agents e.g. desflurane, propofol TCI
- Short-acting opioids
- PONV prophylaxis
- Multimodal analgesia
- Monitor neuromuscular block and ensure full reversal. Consider sugammadex
- Extubate and recover in head up position (45 degrees)

### Pharmacokinetic principles of anaesthetic agents – What dose should I use? <sup>[1][2]</sup>

For most anaesthetic agents, dosing to total body weight is rarely required and increases the risk of relative overdose. Most anaesthetic agents are dosed to effect, e.g. Loss of eyelash reflex, relief of pain, etc.

Lean Body Weight rarely exceeds 70 kg in women and 100 kg in men	<b>Adjusted Body Weight (kg) = Ideal Body Weight (IBW) + 0.4 (Total Body Weight – IBW)</b> Where TBW is the actual weight of the patient $IBW(kg) = Height (cm) - x$ (where $x = 105$ in females & $100$ in males)
<b>Lean Body Weight</b>	<b>Adjusted Body Weight</b>
Propofol induction	Propofol infusion *
Thiopentone	Antibiotics
Fentanyl	LMWH
Rocuronium	Lidocaine
Atracurium	Alfentanil
Vecuronium	Neostigmine (max 5mg)
Morphine	Sugammadex
Paracetamol	
Bupivacaine	

\*For target controlled infusions of propofol (TCI), the Marsh and Schneider formulae become unreliable for patients weighing over 140-150kg. There is a lack of evidence as to the best weight scalar to use with TCI techniques and when used with neuromuscular blocking agents awareness is a potential significant risk <sup>[2]</sup>

**DESTINATION:** Obesity alone is not a clinical indication for high dependency post-operative care. Factors that warrant consideration for a level 2 or 3 setting include:

- Pre-existing co-morbidities
- Indicated high risk (e.g. limited functional capacity)
- Surgical procedure
- Untreated OSA plus a requirement for post-operative parenteral opioids
- Local factors including skill mix of ward staff

**CPAP:** Any patient who may benefit from non-invasive CPAP should be commenced on this soon after extubation and for several nights postoperatively. Oxygen therapy should be applied to maintain pre-operative levels of arterial oxygen saturation. Oxygen saturation monitoring should continue until oxygen saturations remain at baseline without supplemental oxygen and parenteral opioids are no longer required.

### **DVT PROPHYLAXIS <sup>[3]</sup>:**

- Early mobilisation is recommended.
- If possible, this should be encouraged on the day of surgery.
- Continue calf compression devices if immobile.
- Avoid ill-fitting TED stockings.

Obese patients may require increased doses of LMWH and increased dosing schedule.

If prescribing more than 40mg of Enoxaparin daily, this should be discussed with responsible surgeon.

All patients should have mechanical prophylaxis (unless contraindicated) from time of admission until return to their usual level of mobility

### **GG&C Guidelines on LMWH dose adjustment found at**

<http://www.staffnet.ggc.scot.nhs.uk/Info%20Centre/PoliciesProcedures/GGCclinicalGuidelines/GGC%20Clinical%20Guidelines%20Electronic%20Resource%20Direct/Heparin%20Dose%20Adjustment,%20Adult%20Patients%20with%20very%20high%20or%20low%20body%20weight.pdf>

## **References**

1. Guidelines on Managing the Obese Surgical Patient. AAGBI & SOBA; January 2015
2. Absalom AR, Mani V, et al. Pharmacokinetic models for propofol defining and illuminating the devil in the detail. BJA 2009; 103:26-37
3. Tait C, Coelho C, et al; Heparin dose adjustment in adult patients with very high or very low body weight; NHS GGC, Medicines Utilisation Sub-Committee; Review date 2016

“Anaesthetic Best Practice Group NHSGGC with acknowledgement to G Lowe & K Simpson, October 2016. Review Date October 2022.”