PERIOPERATIVE ANAESTHETIC CARE OF THE SURGICAL PATIENT WITH OBESITY

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This guideline aims to set out specific perioperative considerations for managing patients with obesity. It has been composed from recent up-to-date national guidelines.

Contents

This guideline is for use by the following staff groups :

Anaesthetic training grades and Consultants
Pre-assessment nursing staff

Lead Clinician(s)

Dr David J Freeman	Consultant Anaesthetist
Approved by SCS Divisional Quality Governance	25th January 2023
Review date: This is the most current document and should be used until a revised version is in place:	25th January 2026

Key amendments to this guideline

Date	Amendment	Approved by:
25.01.2023	Document approved	SCSD Quality Governance meeting

PERIOPERATIVE ANAESTHETIC CARE

OF THE SURGICAL PATIENT WITH OBESITY.

Introduction

Obese patients present anaesthetists with a specific array of clinical and non-clinical challenges that are essential to recognise and manage perioperatively. Obesity is common. In 2019 the Health Survey for England showed that 28% of adults in England were obese and a further 36.2% people overweight, making a total of 64.2% people either overweight or obese. Of obese adults, around one in eight were morbidly obese (3.3% of all adults). Obesity levels have continued to rise from 15% to 28% from 1993. Men were more likely than women to be overweight or obese (68.2% of men compared with 60.4% of women). Obesity frequency with increasing age except in people over 75 years old.

This guideline aims to set out specific considerations for the perioperative management of the patient with obesity. It has been composed from recent up-to-date national guidelines.

Definitions

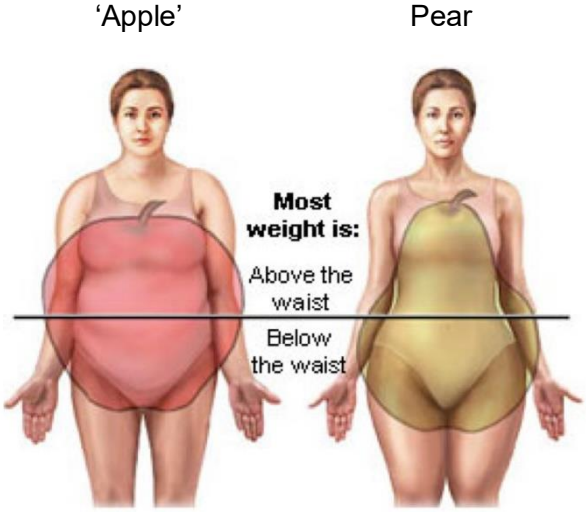
Obesity is defined as a Body Mass Index (BMI) > 30 kg/m^2

Further classification of obesity:

Class I = BMI 30 to 34.9
Class II – BMI 35 to 39.9
Class III = BMI 40 or greater

Morbid obesity defined as patients with a BMI > 40 or >35 kg/m^2 in the presence of obesity-related co-morbidities such as diabetes, hypertension, ischaemic heart disease and wheeze.

Please note that although an increasing BMI is associated with greater prevalence of obesity-related complications it is important to look past the absolute value of the BMI and to ascertain the individual considerations that the patient presents.



For example; consideration of fat distribution is important as patient may broadly be categorised into 'apples' and 'pears'.

Apples (greater central obesity) have increased pathophysiological significance as most of the weight is above the waistline.

Pears (peripheral obesity) can be paradoxically associated with greater absolute BMI and lower overall clinical risk. Most of the weight is below the waistline.

These types of fat distributions are seen in both genders.

Figure 1. Body fat distributions
Taken from Society for Obese and Bariatric Surgery, Summary Guidelines 2014.

BODY WEIGHT DEFINITIONS

Total body weight (TBW): Actual weight of the patient

Adjusted body weight (ABW): Takes into account that obese individuals have increase lean mass and greater volume of distribution of drugs.

ABW = IBW + 0.4 x (TBW – IBW)

Lean body weight (LBW): The patients weight excluding fat.

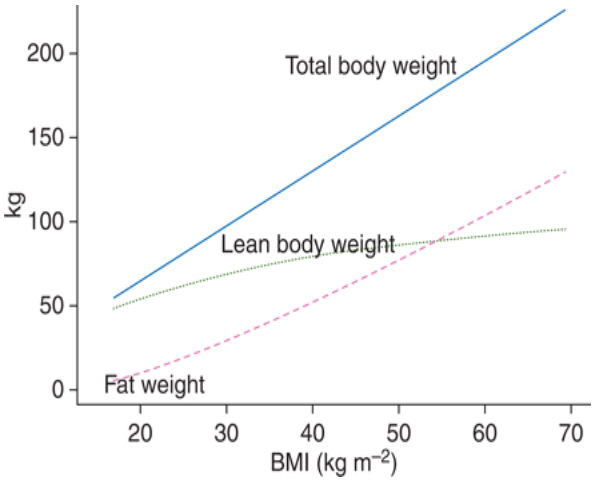
Using the Janmahasatian Formula.
LBW = (9270 x TBW) / (6680 + 216 x BMI) males
LBW = (9270 x TBW) / (8780 + 244 x BMI) females

Ideal body weight (IBW): What the patient should weigh with a normal ratio of lean to fat mass. Eg.

BMI 23 =
Devine formula, IBW = 50+ 0.9x (height cm – 152) [males]
IBW = 45.5 + 0.9 x (height cm -152) [females]

Using height, IBW = height (cm) – 105 (males) or 100 (females)

Relationship of Total body weight, Lean body weight and fat weight with increasing BMI



With increasing Total body weight there is a plateau of lean body weight to around 90 kg with the difference being due to an increase adipose tissue only.

The Society of Obesity and Bariatric Anaesthesia (SOBA) iOS app

This mobile phone application calculates different body weights and uses them for dose calculation.

See the iPhone App store.
Available free.

Currently not available for Android.

Pre-operative considerations

Assessing for obesity-related comorbidities.

AIRWAY
Despite previous misconceptions, intubation in morbidly obese patients is not more difficult than intubation in non-obese individuals. BMI alone is not a risk factor for a difficult tracheal intubation.

However, it is important to carefully assess other predictors of difficult intubation:
- Male gender
- Large neck circumference
- Limited neck mobility
- High Mallampati score
- Obstructive Sleep Apnoea.

BREATHING
Significant respiratory disease could be assessed by the presence of arterial saturation < 95% on air, forced vital capacity < 3 litres, forced expiratory volume in 1 second of < 1.5 l/s or respiratory wheeze at rest.

Obstructive Sleep Apnoea and Obesity Hypoventilation syndrome are common. Screening for the likelihood of sleep apnoea is carried out in our Pre-Assessment Clinic using the STOP-BANG assessment tool.

Table 1. STOP-BANG Questionnaire.

S	Snoring- do you snore loudly? Heard through a closed door
T	Tired- Do you often get tired during the daytime?
O	Observed- Has anyone heard you stop breathing during sleep?
P	Blood Pressure- Do you have/ being treated for high BP?
B	BMI- >35 kg/m2
A	Age >50
N	Neck circumference - > 16 inches / 40cm
G	Gender- Male

Add positive questions together, if score is 4 then compared with patients of a score of 0-2 there is a 3 fold risk of OSA, score of 5 indicates 5 fold increase and 6 indicates 6 fold increase in risk of OSA.

The STOP-BANG risk score can be used to help stratify those at risk patients requiring postoperative HDU care or delay in surgery for respiratory assessment and optimisation.

It is important to note that those with undiagnosed OSA or those unable to tolerate CPAP are at the highest perioperative risk of respiratory and cardiovascular complications. Patients with stable OSA and those using CPAP with good effect have much lower risk and can be considered for ward based care postoperatively.

CIRCULATION
Cardiac disease is more common in obese patients including; hypertension, hyperlipidaemia, ischaemic heart disease and heart failure. Because of OSA and obesity hypoventilation syndrome it is important to assess the potential for pulmonary hypertension and right heart failure. However, views at echocardiography are often of poor quality.
Assess for difficulty of gaining IV access and counsel appropriately.

DIABETIC RISK
Morbidly obese patient are at higher incidence of diabetes. Measurement of glycosylated haemoglobin may be considered to determine adequacy of glucose control, aiming for an HbA1c of < 69 mmol/mol.

FUNCTIONAL STATUS
Level of activity that can be achieved can be used to determine level of cardiorespiratory reserve. Presence of symptoms such as chest pain and shortness of breath and when they occur are important. If due the patient is unable to exercise by walking due to non-cardiorespiratory disease then consider other activities that may provoke shortness of breath or chest pain such as dressing, carrying shopping or housework.

GASTRO-OESOPHAGEAL REFLUX
Presence of heartburn, indigestion or reflux should be sought. There should be a low threshold for the preoperative prescribing of antacid prophylaxis.

THROMBOPROPHYLAXIS
Obese patients are at a significantly greater risk of venous and pulmonary thromboembolism.

All patients should be considered for graduated compression stockings and in those at high risk of VTE the use of low molecular weight heparin may be indicated. Risk of VTE may also extend beyond the postoperative period and extended prophylaxis maybe required.

WAHT Trust guidelines – Guideline for thromboprophylaxis in adult (18 years and older) in general medical patients and in-patients undergoing surgery WAHT-TP-132.

Standard patient dose is 40mg OD.
If creatinine Clearance is 15 – 30ml/min then dose of enoxaparin is 20mg OD
If weight is between 100 Kg to 150 Kg then dose of enoxaparin is 40mg BD if renal function is normal.
If weight is greater than 150 Kg then dose of enoxaparin is 60mg BD if renal function is normal.

RISK STRATIFICATION
The Obesity Surgery Mortality Risk Stratification score (OS-MRS) has been validated for patients undergoing bariatric surgery but may still be applicable for non-bariatric surgery.

Table 2. Obesity Surgery Mortality Risk Stratification score,

Risk Factor	Score
BMI > 50 kg/m2	1
Male	1
Age > 45 years	1
Hypertension	1
VTE risk factors - previous VTE - Vena cava filter - Sleep-disordered breathing - Pulmonary hypertension	1

Class A: Score 0 – 1 = 0.2 – 0.3% Mortality

Class B: Score 2 – 3 = 1.1 – 1.5%

Class C: Score 4 – 5 = 2.4 – 3.0%

Demaria et al, Annals of Surgery 2007; 246: 578 – 84.

Peri-operative considerations

Preparation
Carefully consider appropriate post-operative location as the patient may require a clinical area that can provide continuous monitoring, appropriately located near high dependency areas and have sufficient expertise to manage post-operative complications.

Specific theatre equipment and patient management through the operative process should be considered. For example; suitable operating table and hospital bed/trolley for allow for patients' weight and width dimensions, pressure area care, appropriately sized BP cuff (maybe placed on forearm), ramping device to optimise patient positioning, patient transport using a PAT slide and the red sliding sheets and ensuring appropriate number of suitably trained staff.

The Hovermatt™ is advised to be considered for the transfer of the patient horizontally to and from the operating table in patients greater 120 Kg.

Maximum Permitted weight of the operating table is often not a limiting factor as it has a maximum of 450 kg if the table is central. Maximum weight limit when using the slide function forwards and backwards is 250 Kg. Maximum weight of the trolleys is 250Kg.

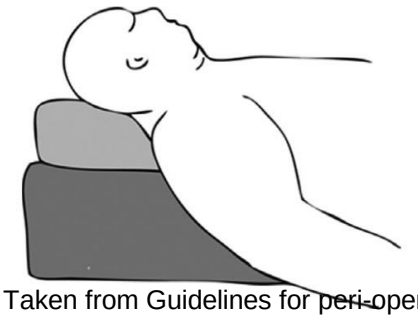
Often, it is the width of the table than is a problem. Side extensions are available for both sides of the table.

To reduce manual handling the patient can position themselves on the operating table located in the anaesthetic room.

Positioning
Ramped position so that the tragus of the ear is level with the sternum, reduces risk of difficult laryngoscopy and improves ventilation. This can also be achieved with use of the Oxford HELP™ pillow.

To reduce manual handling induce the patient on the operating table in theatre, this also reduces patient / circuit disconnection, loss of PEEP and reduces risk of desaturation.

Figure 2. Ramped Position



Taken from Guidelines for peri-operative management of the obese surgical patient 2015, Anaesthesia 2015, 70, 859 – 876

Preoxygenation
Due to reduction in functional residual capacity, atelectasis and a higher rate of oxygen consumption obese patients desaturate quickly after apnoea. Aim to achieve a good seal with facemask, recording carbon dioxide and achieving an end-tidal oxygen fraction of at least 0.9.

Additional oxygen therapy can be achieved by use of high flow nasal oxygen. This can be achieved simply by using nasal cannulae at a flow rate of 2 litres per minute when the patient is awake and increased to 12 litres per minute after induction.

Other specialised systems include; Salter adult high flow cannula (1600HF), Vapotherm precision 2000i high flow therapy™ and Fisher and Paykel Optiflow high flow nasal cannula™.

Airway
Effective bag, valve mask ventilation may be difficult. Be aware that desaturation can happen quickly.

Reliable airway control is achieved with good patient positioning, early use of appropriate dose of muscle relaxant and adequate depth of anaesthesia.

Tracheal intubation, avoiding spontaneous ventilation and the use of PEEP is recommended.

Airway adjuncts – Oropharyngeal (guedel) and nasopharyngeal airways.

Improving laryngoscopy – Macintosh blades sizes 3 and 4
McCoy blade
Polio blade in large breasted women with cricoid pressure

Videolaryngoscopy – CMAC blade
D-Blade

Alternative methods of intubation - Flexible Fibreoptic intubation – this can be asleep or awake.

Other aids – Gum elastic bougie, stylet

Drug Dosing
Most anaesthetic drugs are titrated to effect (e.g. loss of eye lash reflex). This often equates to lean body weight as often it is inappropriate to dose to total body weight which may result in overdose.

Important to note that due to the greater fat distribution in obese individuals there is a more rapid redistribution of induction agents causing obese patients to wake up more quickly than non-obese patients.

Table 3 Drug dosing in obesity

Lean Body Weight	Adjusted Body Weight	Total Body Weight
Propofol (induction)	Propofol (infusion)	Suxamethonium
Thiopentone	Antibiotics	Sugammadex
Fentanyl	Alfentanil	Low molecular weight heparin
Morphine	Neostigmine (to max 5mg)	
Atracurium		
Rocuronium		
Vecuronium		
Paracetamol		
Bupivicaine		
Lignocaine		

Taken from Guidelines for peri-operative management of the obese surgical patient 2015, Anaesthesia 2015, 70, 859 – 876.

Opioids – Important to use lean body weight and to titrate to effect. Avoid long acting opioids such morphine especially in the presence of obstructive sleep apnoea. Consider use of remifentanil infusion for intraoperative analgesia and / or fentanyl for intraoperative and postoperative analgesia.

Target Controlled Infusion

Propofol

– The Marsh model uses total body weight and so tends to overdose in obesity and may become unreliable at body weights of in excess of 120 kg. Use ideal body weight for induction.

– Schnider model uses lean body weight. It is accurate to a BMI of 42 in men & 37 in women. The Janmahasatian formula (see page 4) can be used to calculate lean body weight.

Remifentanil

- Use lean body mass, as calculated from Total Body Weight.

Braun Perfusor Space TCI pumps at Worcestershire Acute Hospitals

These TCI pumps found in theatres have maximum height and weight values depending on the calculated BMI, sex of patient, drug and pharmacokinetic model used. See table below for a summary.

Table 4.

Drug	Model	SEX	Maximum Height /m	Maximum Weight /kg	Max BMI
Propofol	Marsh	Male	not used	200	n/a
		Female	not used	200	
	Schnider	Male	2.2	200	41.3
		Female	2.2	174.9	36.1
Remifentanil	n/a	Male	2.2	200	41.3
		Female	2.2	174.9	36.1

Depth of Anaesthesia monitoring

It is recommended in cases using total intravenous anaesthesia to use depth of anaesthetic monitoring such as the available BiSpectral index monitor (BIS™ Medtronic-Covidien, Dublin, Ireland). This is to both reduce the incidence of accidental awareness under GA and also to prevent excessive depth of anaesthesia that may have physiological and postoperative implications.

A separate guideline on the use of BiSpectral Index (BIS) depth of anaesthesia monitors is available [WAHT-KD-004] in Anaesthesia Key Documents.

Intra-operative management

Effective analgesia
Use of minimally invasive surgery with local anaesthetic infiltration is recommended.

Multimodal analgesia regimes; including use of paracetamol, NSAIDS where appropriate and avoiding long-acting opioids.

Remifentanil infusion provided excellent intra-operative analgesia that is easily titratable.

Regional Anaesthesia
Regional anaesthesia can provide very effective analgesia intra-operatively and for the post-operative period. It can also be used to replace general anaesthesia, thus avoid many potential associated risks. However it is often much more challenging to achieve than in the non-obese patient. Excellent patient positioning, extra-long epidural and spinal needles may be required and the use of ultrasound has been used to aid needle placement.

It is safer to calculate local anaesthetic doses using lean body weight and despite the potential reduction in neuroaxial volume due to increase adipose tissue the standard dose for central neuroaxial blockade is recommended.

It should be noted that hypotension is more common following neuroaxial anaesthesia especially when lying flat or in the Trendelenburg position.

Thromboprophylaxis
Use Graduated Compression Stockings unless contra-indicated. Use of intermittent pneumatic calf compression is mandatory for all cases greater than 30 minutes unless contraindicated.

Temperature Control
Important to maintain normothermia. Consequently intra-operative temperature monitoring, patient warming with warming air blankets and warmed fluids and suitable ambient temperature are required.

Rapid Wake-up & Extubation
Recovery from anaesthesia is frequently prolonged in obese patients who are also at increased risk of aspiration and upper airway obstruction following extubation. Rapid return of airway and swallowing reflexes is required and this is seen with the use of Sevoflurane as compared to Isoflurane.

Airway control around the time of extubation poses greater risks to the overweight patient than to lean patients.

To aid in a safe rapid extubation the following points may be considered;

- Use as little opioid as possible or use of short-acting opioids i.e. remifentanil infusion.
- Minimise residual anaesthetic at time of extubation.
- Ensure adequate reversal of neuromuscular blocking agents with use of neostigmine, sugammadex and neuromuscular TOF monitoring.
- Position the patient in an upright position to maximise respiratory mechanics and reduce risk of reflux.
- If the patient uses CPAP then consider extubating immediately onto CPAP.

Post-operative considerations

Discharge from anaesthetic recovery
Patients should be alert with normal, adequate ventilation. Oxygen saturation should be maintained at pre-operative levels with minimal oxygen therapy.

Ward Care
Appropriate post-operative location should be achieved. Escalation to a high dependency or critical care may be required based on patient co-morbidity, type of surgery and post-operative issues with hypoventilation / desaturation.

Multimodal analgesia and early mobilisation recommended.

Thromboprophylaxis

WAHT Trust guidelines – Guideline for thromboprophylaxis in adult (18 years and older) in general medical patients and in-patients undergoing surgery WAHT-TP-132.

Standard patient dose is 40mg OD.

If creatinine Clearance is 15 – 30ml/min then dose of enoxaparin is 20mg OD

If weight is between 100 Kg to 150 Kg then dose of enoxaparin is 40mg BD if renal function is normal.

If weight is greater than 150 Kg then dose of enoxaparin is 60mg BD if renal function is normal.

Glossary

AAGBI	Association of Anaesthetists, Great Britain and Ireland
BD	Twice daily prescription
BMI	Body Mass Index
BP	Blood Pressure
CPAP	Continuous Positive Airway Pressure
LMA	Laryngeal Mask
NSAIDS	Non-Steroidal Anti-Inflammatory Drugs
OD	Once daily prescription
OSA	Obstructive Sleep Apnoea
OS-MRS	Obesity Surgery Risk Stratification Score
PEEP	Positive End Expiratory Pressure
SOBA	Society for Obesity and Bariatric Anaesthesia
TCI	Target Controlled Infusion
TOF	Train of Four
TIVA	Total Intravenous Anaesthetic
VTE	Venothromboembolism

Summary

PRE-OPERATIVE CONSIDERATIONS
Predictors of difficult Intubation - Male, - Large neck circumference - Limited neck mobility - High Mallampati score - Obstructive Sleep Apnoea
Significant respiratory disease - SpO2 <95% - FVC < 3 litres - FEV1 < 1.5 l/s - Respiratory wheeze
STOP-BANG Assessment for OSA S- Snoring T- Tired O- Observed apnoea P- BP high B- BMI > 35 A- Age >50 N- Neck circumference > 16 inches G- Gender - male
Circulation - Other associated comorbidities - Difficult IV access - Forearm BP cuff
Diabetes - HbA1c < 8.5%
Gastro-oesophageal reflux - Consider antacid prophylaxis
Risk Stratification OS-MRS - BMI > 50 - Male - Age > 45 - Hypertension - VTE risk factors

POSTOPERATIVE CONSIDERATIONS
Discharge from recovery - Alert, Adequate ventilation - Oxygen saturations same as preop
Ward Care - Appropriate Postop location - HDU depending on co-morbidities, surgery, postop issues with hypoventilation or desat - Multimodal analgesia - Early mobilisation
Thromboprophylaxis - Compression stockings - Extended low molecular weight heparin in patients high risk of VTE

PERI-OPERATIVE CONSIDERATIONS
Preparation - Operating table size & weight limits - Pressure area care - appropriate BP cuff - PAT slide & sliding sheets - Appropriate number of staff
Positioning - Ramped position - HELP Pillow - Induce on operating table - ? Induce in theatre
Preoxygenation - Facemask with no leak - EtO2 > 0.9 - High flow nasal oxygen
Airway - BVM ventilation maybe difficult - Early use of muscle relaxant & Adequate depth of anaesthesia - Tracheal Intubation - Airway adjuncts (OP & NP airways) - Alternative laryngoscopes - Fibreoptic intubation
Drug Dosing - Titrate to lean body weight - Suxamethonium & Sugammadex use total body weight - Use adjusted body weight for alfentanil, antibiotics & neostigmine. - Titrate opioids to lean body weight
Effective Analgesia - Multimodal; paracetamol / NSAID - Avoid morphine unless required - Remifentanil for intra-op analgesia
Regional Anaesthesia - Landmark identification maybe difficult - Long epidural & spinal needles - Hypotension more common
Thromboprophylaxis - Compression stockings - Intermittent calf compression - Low molecular weight heparin; 40mg BD with patient weight of 100 – 150kg 60mg BD with patient weight greater than 150kg
Rapid Wake up & Extubation - Care with morphine - Reversal of muscle relaxants - Upright position

THE SOCIETY FOR OBESITY AND BARIATRIC ANAESTHESIA SUMMARY

ANAESTHESIA FOR THE OBESE PATIENT: BMI>35KG/M²

Preoperative Evaluation

S	Snoring. Do you snore loudly (louder than talking or heard through a closed door?	
T	Tired. Do you often feel tired fatigued or sleepy during the daytime?	
O	Observed. Has anyone observed you stop breathing during sleep?	
P	Blood Pressure. Do you have or are being treated for high blood pressure?	
B	BMI: BMI > 35kg/m²	
A	Age: Age > 50	
N	Neck: Neck circumference >40cm (16 inches)	
G	Gender: Male	

Any of:
Poor functional capacity
Abnormal ECG
Uncontrolled BP/IHD
SpO_2 <94% on air
Poorly controlled asthma/COPD
Previous DVT/PE
STOP-BANG ≥ 5

YES → Consider:
Bloods gases/Sleep Studies
Preoperative CPAP
Echocardiogram
Cardiorespiratory referral

YES → Need experienced anaesthetic team
If major surgery consider HDU

NO → Maybe suitable as Day case surgery
SEE BELOW

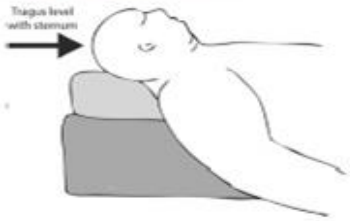
Central Obesity (waist > half height)
Difficult airway /Ventilation problems more likely
Greater risk of CVS disease, thrombosis
↑Risk of Metabolic syndrome:
Central Obesity plus Hypertension
Dyslipidaemia, Insulin resistance

Peripheral Obesity
(Fat outside body cavity)
Less co-morbidity

Intra Operative Management

Suggested Equipment
Suitable bed/trolley & operating table
Gel padding, wide strapping, table extensions/arm boards
Forearm cuff or large BP cuff
Ramping device, step for anaesthetist, difficult airway equipment, ventilator capable of PEEP and pressure modes.
Hover mattress or equivalent.
Long spinal, regional and vascular needles.
Ultrasound machine.
Depth of anaesthesia and neuromuscular monitoring.
Enough staff to move patient.

Ramping
Ear level with sternum. Reduces risk of difficult laryngoscopy, improves ventilation.



Anaesthetic Technique
Consider premed antacid & analgesia, careful glucose control & DVT prophylaxis.
Self-position on operating table.
Preoxygenate & intubate in ramped position +/- CPAP. Minimize induction to ventilation interval to avoid desaturation. Commence maintenance anaesthesia promptly.
Tracheal intubation is recommended.
Avoid spontaneous ventilation. Use PEEP.
Use short-acting agents e.g. desflurane or propofol infusion, short-acting opioids, multimodal analgesia. PONV prophylaxis.
Ensure full NMB reversal.
Extubate and recover in head up position.

Drug dosing- what weight to use?
Induction agents: titrate to cardiac output- this equates to lean body weight in a fit patient.
Competitive muscle relaxants: use lean body weight.
Suxamethonium use total body weight
Neostigmine: Increase dose. Measure response
Opioids: Use Lean body weight. Care with obstructive apnoea!
TCI propofol: IBW plus 40% excess weight

If in doubt, titrate and monitor effect!

Lean Body Weight this exceeds Ideal body weight in the obese and plateaus ≈100kg for a man, ≈70kg for a woman.
Ideal Body Weight in Kg - Broca formula
Men: height in cm minus 100 Women: height in cm minus 105

Suggested dosing regimes for anaesthetic drugs

Lean Body Weight Males 100Kg Females 70Kg	Adjusted Body Weight Ideal plus 40% excess
Propofol induction	Propofol Infusion
Thiopentone	Alfentanil
Fentanyl	Lidocaine
Rocuronium	Neostigmine (max 5mg)
Atracurium	Sugammadex (see package insert)
Vecuronium	Antibiotics
Morphine	Low Molecular weight Heparin
Paracetamol	
Bupivacaine	

Post Operative Management

PACU discharge: Usual discharge criteria should be met. In addition, SpO_2 should be maintained at pre-op levels with minimal O_2 therapy, without evidence of hypoventilation.
OSA or Obesity Hypoventilation Syndrome: Sit up. Avoid sedatives and post-op opioids. Reinstate CPAP if using it pre-op. Additional time in recovery is recommended, only discharge to the ward if free of apnoeas without stimulation. Patients untreated or intolerant of CPAP who require postoperative opioids are at risk of hypoventilation and require continuous oxygen saturation monitoring. Level 2 care is recommended. Effective CPAP reduces this risk to near normal.
Ward care: Escalation to Level 1, 2 or 3 care may be required based on patient co-morbidity, the type of surgery undertaken and issues with hypoventilation discussed above. General ward care includes: multimodal analgesia, caution with long-acting opioids and sedatives, early mobilisation and extended thromboprophylaxis.

See www.SOBAuk.com for references Updated November 2014

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	These are the 'key' parts of the process that we are relying on to manage risk. We may not be able to monitor every part of the process, but we MUST monitor the key elements, otherwise we won't know whether we are keeping patients, visitors and/or staff safe.	What are we going to do to make sure the key parts of the process we have identified are being followed? (Some techniques to consider are; audits, spot-checks, analysis of incident trends, monitoring of attendance at training.)	Be realistic. Set achievable frequencies. Use terms such as '10 times a year' instead of 'monthly'.	Who is responsible for the check? Is it listed in the 'duties' section of the policy? Is it in the job description?	Who will receive the monitoring results? Where this is a committee the committee's specific responsibility for monitoring the process must be described within its terms of reference.	Use terms such as '10 times a year' instead of 'monthly'.
	Ensure we are providing safe perioperative care for obese patients	Ensure HELP pillow available at all sites.	12 monthly	Theatre site leads		As part of 5 yearly ACSA accreditation
		Incorporate STOPBANG into preoperative questionnaire.		Pre-op team		

References

Guidelines – Peri-operative management of the obese surgical patient. Anaesthesia 2015, 70, 859 – 876.

Nightingale C & Redman J. Anaesthesia of the Obese patient. SOBA Single Sheet Guide

Designing intelligent anaesthesia for a changing patient demographic. A consensus statement for specialist and non-specialist anaesthetists written by members of / and endorsed by the Society for Obesity and Bariatric Anaesthesia (SOBA).

Peri-operative management of the morbidly obese patient. AAGBI June 2007.

Difficult Airway Society Intubation Guidelines, 2004. From http://www.das.uk.com/guidelines/downloads.html Accessed 27/08/2015.

Difficult Airway Society Extubation Guidelines, 2014. From http://www.das.uk.com/guidelines/downloads.html Accessed 27/08/2015.

Use of Bispectral Index (BIS) depth of anaesthesia monitors
WAHT-KD-004 Anaesthesia Key Documents

Contribution List

Key individuals involved in developing the document

Name	Designation
Dr David Freeman	Consultant Anaesthetist

Circulated to the following individuals for comments

Name	Designation
All Anaesthetic Consultants	
Directorate Governance Meeting – Anaesthetics & Critical Care	
Dr Shirley Lindsay	Consultant Anaesthetist
Dr James Hutchinson	Consultant Anaesthetist

Circulated to the following CDs / Heads of departments for comments from their directorates / departments

Name	Designation
Dr David Whitelock	Clinical Director - Anaesthetics

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy / guidance affect one group less or more favourably than another on the basis of:**		
	Age	No	
	Disability	No	
	Gender reassignment	No	
	Marriage and civil partnership	No	
	Pregnancy and maternity	No	
	Race	No	
	Religion or belief	No	
	Sex	No	
	Sexual orientation	No	
2.	**Is there any evidence that some groups are affected differently?**	N/A	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and / or justifiable?**	N/A	
4.	**Is the impact of the policy / guidance likely to be negative?**	N/A	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the policy / guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	**No**
2.	Does the implementation of this document require additional revenue	**No**
3.	Does the implementation of this document require additional manpower	**No**
4.	Does the implementation of this document release any manpower costs through a change in practice	**No**
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	**No**
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval