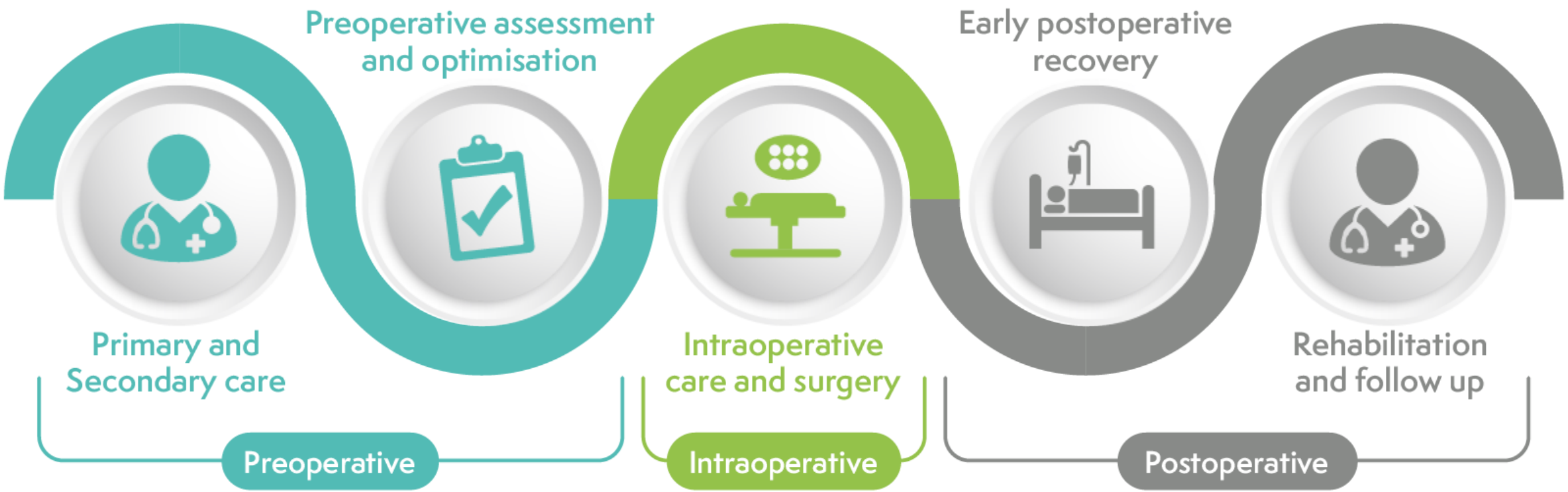
Perioperative Management of OSA in Adults



Primary Care

Screening [1]

Snoring	Cognitive dysfunction
Unrefreshing Sleep	Apnoeas
Tiredness/Fatigue	Waking Headache
Choking during sleep	Nocturia
	Insomnia

≥2 of the above:
Suspect OSA. Use STOP-BANG questionnaire to assess risk of patient having OSA. Use Epworth Sleepiness Score to assess sleepiness.

Priority factors for rapid assessment:

- Vocational driving or vigilance-critical job
- Unstable cardiovascular disease
- Pregnancy
- Preoperative assessment for major surgery

Secondary Care [1]

Assessment:
Home-testing devices for diagnosing obstructive sleep apnoea hypopnoea syndrome

Management:
Emphasis on lifestyle advice and support for smoking cessation, alcohol reduction, weight loss and exercise

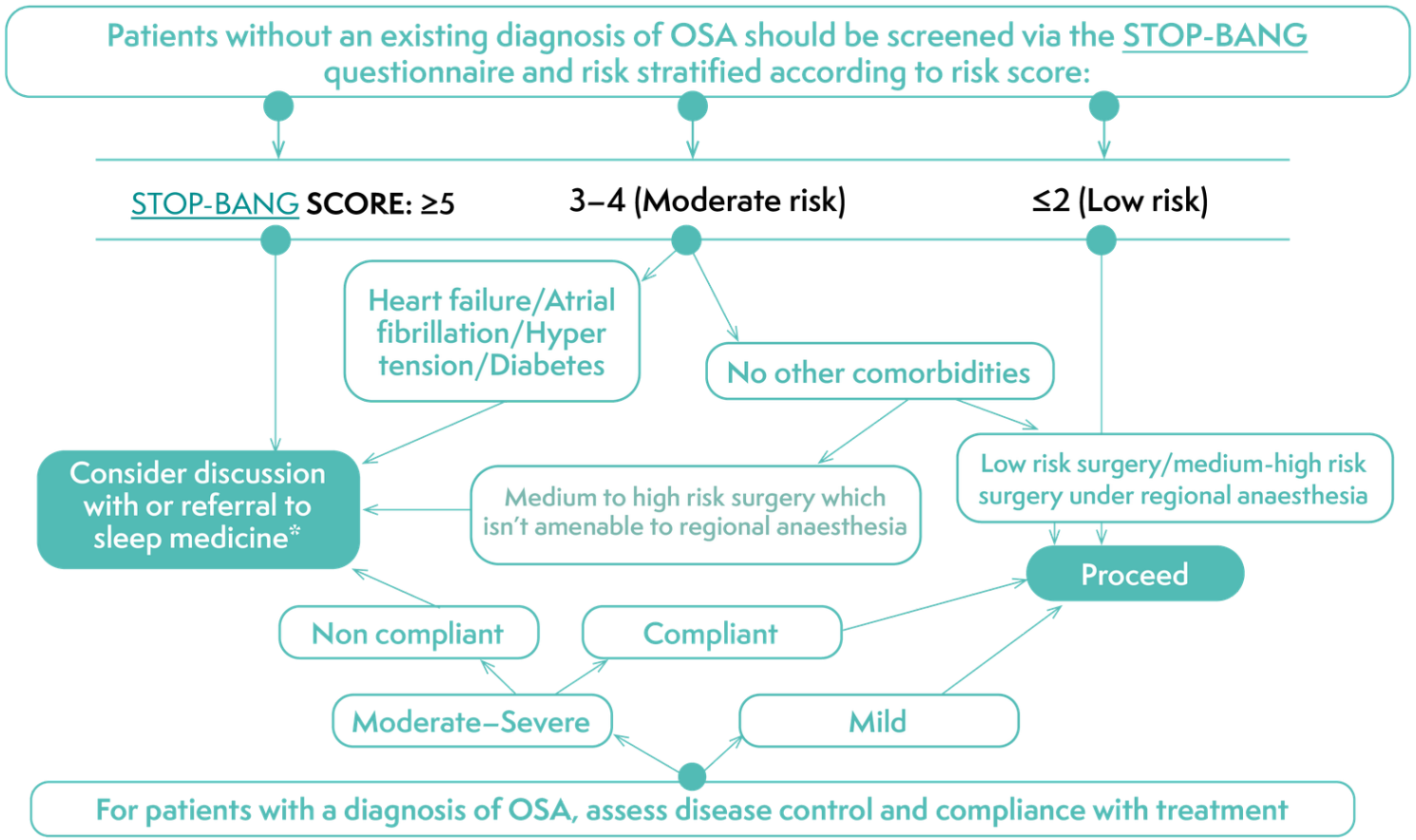
Mild:
Mandibular advancement device

Continuous Positive Airway Pressure (CPAP) if symptoms are affecting quality of life in the presence of priority factors

Mod-Severe:
CPAP
Follow up of compliance, disease control and quality of life

1. NICE OSA GUIDELINES
2. PRE-OP ASSOCIATION OSA GUIDELINES
3. SOBA OSA GUIDE
4. ASA GUIDELINES ON MANAGEMENT OF PATIENTS WITH OSA
5. GUIDELINES FOR DAY CASE SURGERY
6. FICM/CPOC ENHANCED CARE GUIDELINES
7. SOCIETY OF ANESTHESIA AND SLEEP MEDICINE GUIDELINE

Preoperative Phase 2



*Develop streamlined pathways between perioperative services and sleep medicine Establishing home oximetry testing from perioperative clinic can improve screening accuracy and pathway efficiency

Do not delay urgent surgery for investigation of OSA. If high risk, manage as if known OSA and refer for assessment postoperatively.

Examples of risk stratification tools: SOBA OSA algorithm 3 or ASA OSA tool 4

Aim for 4–6 weeks of CPAP therapy prior to planned surgery

OSA patients should not be denied access to day surgery based on diagnosis alone. Protocols should maximise opportunity for OSA patients to be managed safely via day case pathways if co-morbidities are optimised and surgery is amenable to multimodal opioid-sparing analgesia/regional anaesthesia 5

Support patients to engage in shared decision making, lifestyle modification and preparation for surgery to reduce OSA associated risk 6

Empower patient to bring in their own CPAP machine and use it post operatively 7 (may require adapter to use with oxygen in immediate postoperative period)

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Intraoperative Care & Surgery

8x increase in difficult airway incidence

Increased opioid sensitivity [2]

Regional/local techniques are gold standard [4]

Caution with Interscalene Blocks due to risk of phrenic nerve palsy

If sedation, use capnography and consider HFNO or CPAP

Limited opioid strategy

Full NMB reversal prior to awake extubation (Consider Sugammadex)

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Postoperative Care

Recover in facility where CPAP can be safely administered

Consider HDU or enhanced care for increased monitoring requirement or those at high risk according to risk stratification [6]

Only discharge to unmonitored environment when no longer at risk of respiratory depression [4]

Follow up existing and suspected OSA by sleep services in community

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STOP-BANG

Screening questionnaire +/- Epworth Sleepiness scale:

Snoring

Tiredness (or Epworth score ≥12)

Observed apnoeas

Pressure: Hypertension

BMI >35 $kg.m^{-2}$

Age >50

Neck Circumference >40cm

Gender: Male

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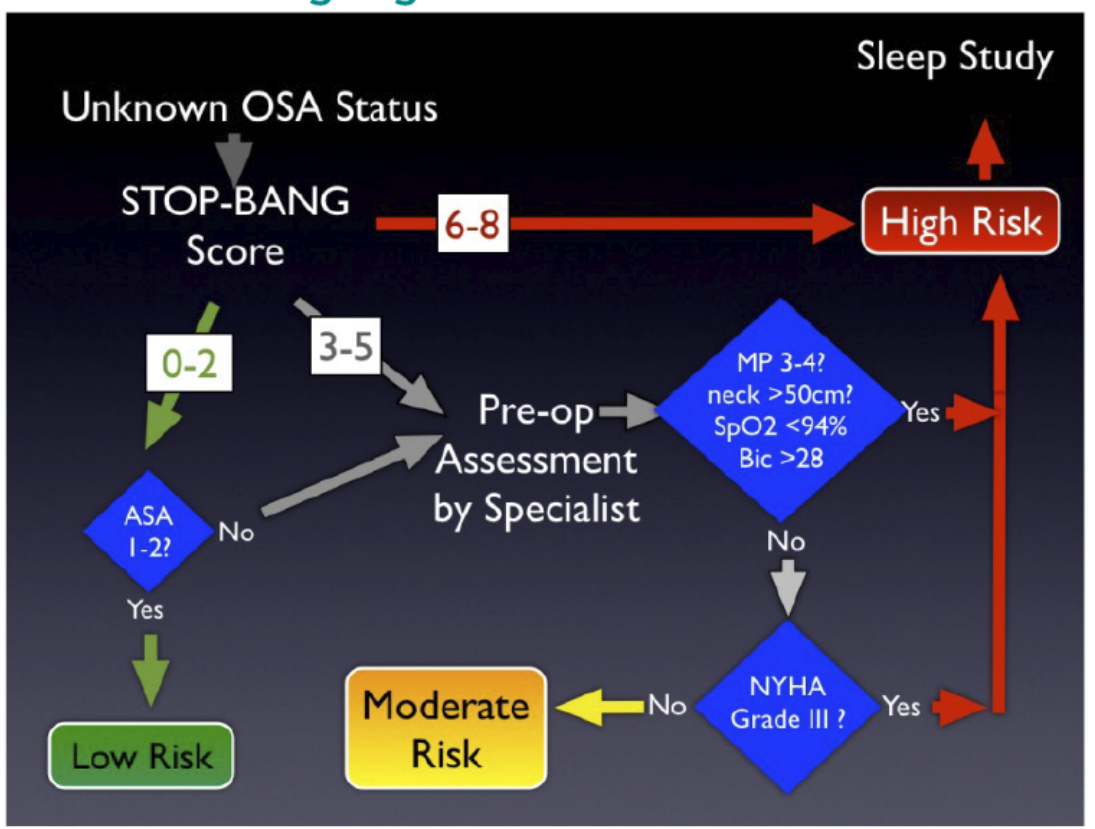
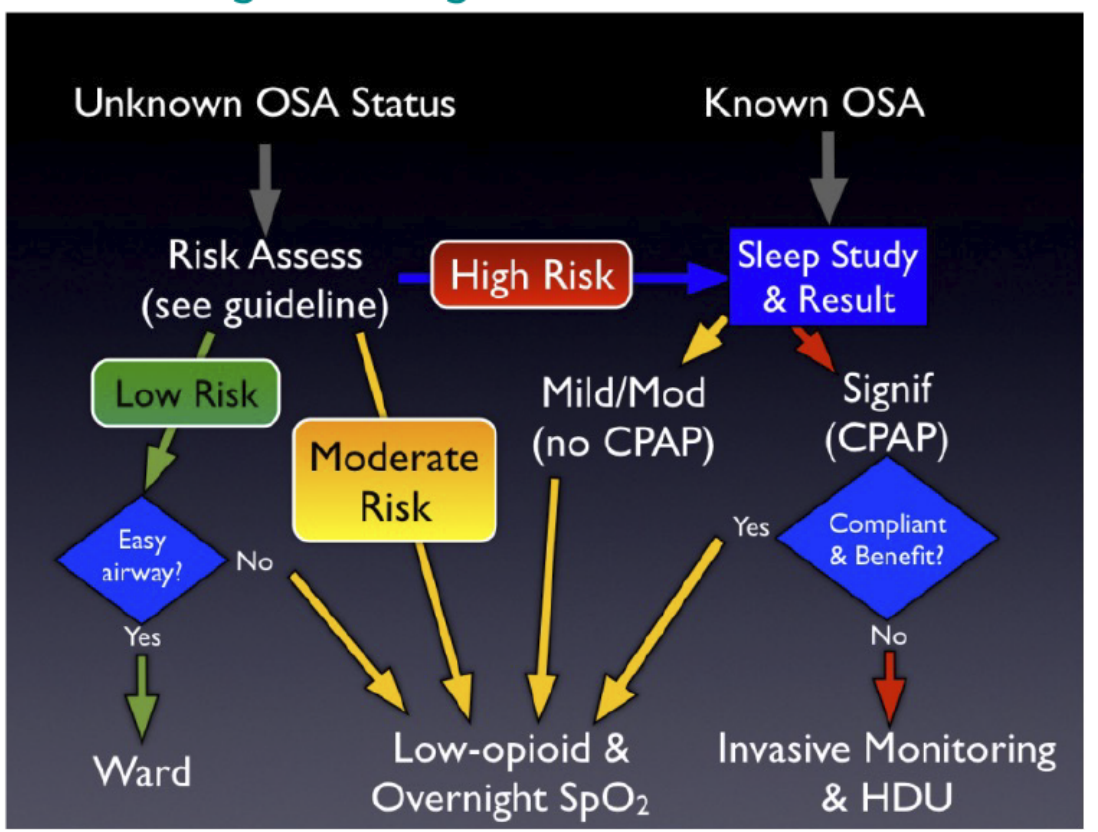
Recommendations for screening and management of Sleep Disordered Breathing (SDB) in patients undergoing bariatric surgery

OSA Screening Algorithm for the Obese Patient



OSA Management Algorithm for the Obese Patient



American Society of Anesthesiologists®

Practice Guidelines for the Perioperative Management of Patients with Obstructive Sleep Apnea

A. Severity of OSA

	Points
None	0
Mild	1
Moderate	2
Severe	3

B. Invasiveness of surgery and anaesthesia:

Superficial surgery under local anaesthesia or peripheral nerve block without sedation	0
Superficial surgery with moderate sedation or general anaesthesia	1
Peripheral surgery with spinal or epidural anaesthesia (with no more than moderate sedation)	1
Peripheral surgery with general anaesthesia	2
Airway surgery with moderate sedation	2
Major surgery with general anaesthesia	3
Airway surgery with general anaesthesia	3

C. Requirement for post-operative opioids:

None	0
Low dose oral opioids	1
High dose oral, parenteral, or neuraxial opioids	3

D. Estimation of perioperative risk:

Overall score= score for A (0–3) plus the greater of the score for either B or C (0–6)

4 = increased perioperative risk
> 4 = significantly increased perioperative risk

*One point may be subtracted if a patient has been on CPAP before surgery and will continue to use own appliance consistently during the perioperative period.

**One point should be added if a patient with mild or moderate OSA also has a higher resting $PaCO_2$ (> 6.5 KPa)

Table 4

Unadjusted incidence rates and adjusted odds ratios (OR) of postoperative cardiopulmonary complications for treated and untreated obstructive sleep apnoea patients (Treatment= CPAP)

Outcome	No OSA	OSA Untreated	OSA Treated	Adjusted OR
Any cardiopulmonary complication	4.9%	6.4%	4.2%	1.8
Postoperative myocardial infarct	0.6%	1.4%	0.6%	2.6
Unplanned reintubation Postoperative arrhythmia Postoperative cardiac arrest	1.8% 1.5% 0.6%	2.7% 1.6% 0.9%	1.4% 1.4% 0.4%	2.5 1.4 2.5

Adjusted OR compares patients with OSA who are treated and untreated.

Abdelsattar ZM, Hendren S, Wong SL, Campbell DA Jr, Ramachandran SK. The Impact of Untreated Obstructive Sleep Apnea on Cardiopulmonary Complications in General and Vascular Surgery: A Cohort Study. Sleep. 2015 Aug 1;38(8):1205-10. doi: 10.5665/sleep.4892. PMID: 25761980; PMCID: PMC4507725.