Elevated BMI in the OB patient: How big of a problem

BMI…the tip of an iceberg.

# Disclosures

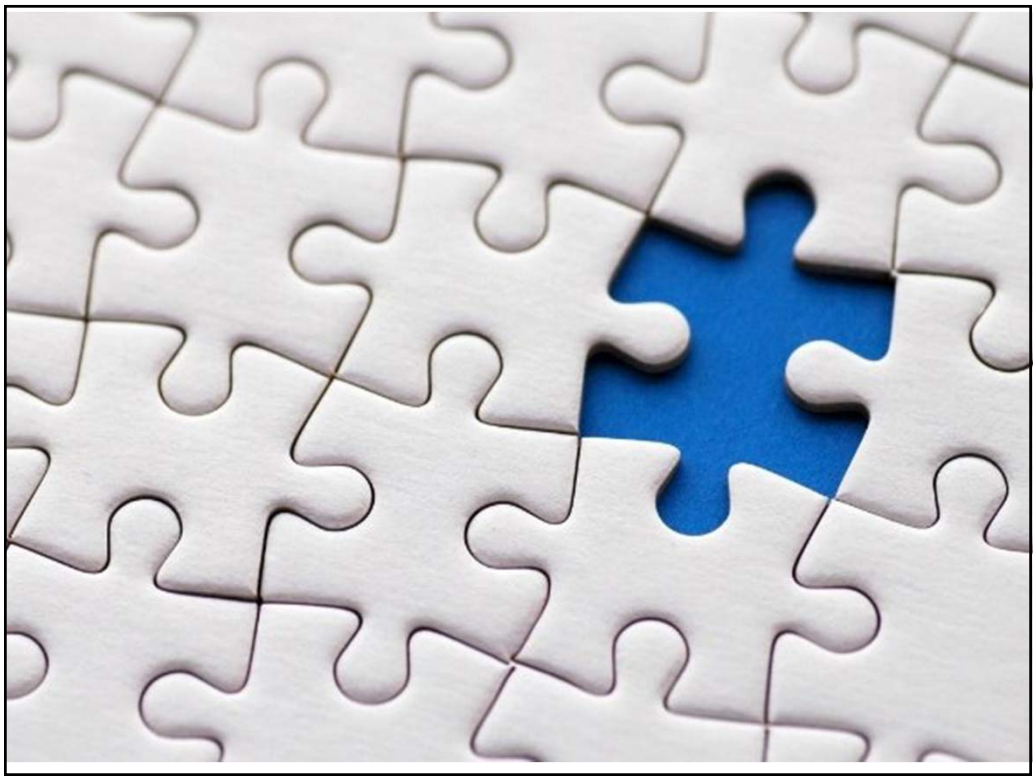
- Dr Pienaar delivered my first born and I have a bias to trust everything he says
- I receive sessional payments from RCCbc to act as network lead for FPAs in British Columbia….I speak with caution.

# My Street Cred

- Prince Rupert, BC
- Port Alberni, BC
- Yellowknife, NWT
- Trail, BC.
- Golden, BC
- Revelstoke, BC
- Salmon Arm, BC.

# Main Messages

- Yes…..Elevated BMI is a high risk
- I have no idea, nor should anyone else outside of your healthcare team, what you should do with your patients with elevated BMI.
- I feel very comfortable with my approach to elevated BMI in my setting and have a BMI cut off that is appropriate for the services available in my facility.
- In my opinion this decision needs to be individualized to a specific facility based on the needs of these high risk patients and the resources within that facility
- I'm going to review the issues and what resource availability you should consider in deciding how to manage these patients.



# Definition of Obesity

| Body Mass Index | WHO classification |
|---|---|
| <18.5 | Underweight |
| 18.5-24.9 | Normal |
| 25.0-29.9 | Overweight |
| 30.0-34.9 | Obese 1 |
| 35.0-39.9 | Obese 2 |
| 40.0-49.9 | Obese 3 (morbidly obese) |
| 50-59.9 | Super Morbidly Obese |
| >60 | Super Super Morbidly Obese |

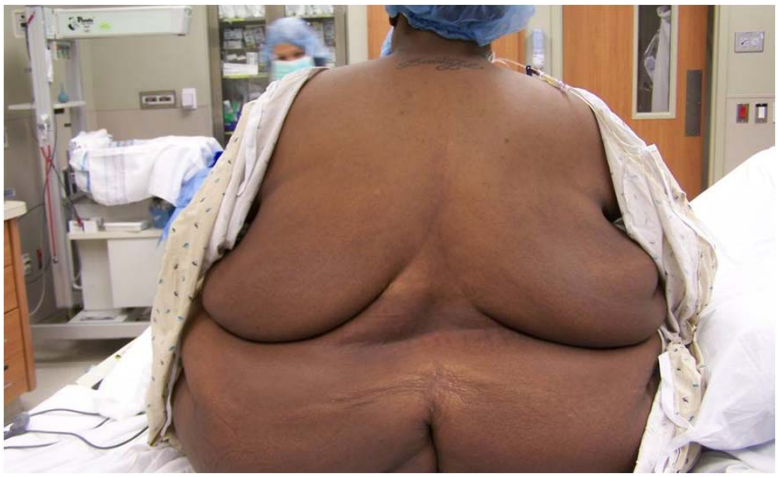
## SOGC Clinical Practice Guideline 2010 "Obesity in Pregnancy"

**Table 2. BMI classification**

| | BMI range | Risk of developing health problems |
|---|---|---|
| Underweight | < 18.5 | Increased |
| Normal weight | 18.5 to 24.9 | Least |
| Overweight | 25.0 to 29.9 | Increased |
| Obese Class I | 30.0 to 34.9 | High |
| Obese Class II | 35.0 to 39.9 | Very high |
| Obese Class III | ≥ 40.0 | Extremely high |

# General Considerations

- **Pre-pregnancy**
  (**OSA, hypoventilation,** Infertility, cardiovascular disease, diabetes, etc..)
- **Early pregnancy**
  (Spontaneous abortion, neural tube defects, congenital heart, etc…)
- **Late Pregnancy**
  (Hypertensive disorders of pregnancy, Gestational diabetes, etc…)
- **Intrapartum**
  (**C-section**, **analgesia, IV access,** macrosomia, monitoring, etc…)
- **Immediate post partum**
  (**PPH, Atelectasis, Hypoxemia,** neonatal morbidity, etc…)
- **Delayed postpartum**
  (**VTE, Atelectasis, ICU admission**, **Resp failure,** wound infections, etc…)



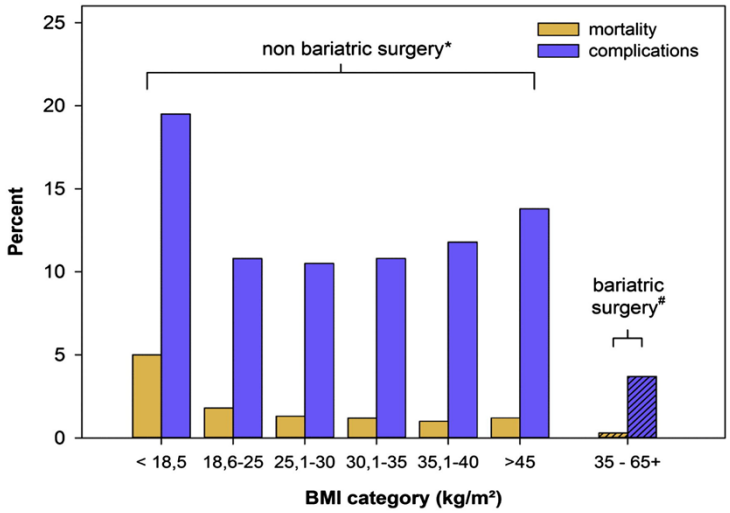
# Anesthetic Considerations

Taking good care of this population

## ANESTHETIC CONSIDERATIONS OF THE OBESE PARTURIENT
## 50% of them are coming to the OR!

- Difficult IV access
- Difficult neuraxial access
- Equipment issues (BP Cuffs, OR table, ventilator) and transportation.
- Difficult BMV, difficult intubation, difficult ventilation
- Abnormal respiratory mechanics (with GA or neuraxial)
- Abnormal hemodynamics(sudden cardiac arrest with position changes)
- Risk of OSA/hypoventilation and atelectasis
- Risk of PPH
- Aspiration risk
- Increased risk VTE

# Perioperative Risk




**30-day mortality and complication rates in patients with non-bariatric surgery and patients after bariatric surgery (118707 patients)** (Flum DR, Belle SH, King WC et al. Preoperative safety in the longitudinal assessment of bariatric surgery. NEJM 2009; 361:445-454)

# Sleep Disordered Breathing

- Spectrum of disorders from OSA to Obesity hypoventilation syndrome.
- Obesity is the main risk factor for OSA
- 10-20% of patients with BMI >35 have severe OSA.
- Some studies estimate rates of OSA as high as 90% with BMI>40
- Increased sensitivity to opioid induced respiratory depression.
- Associated with sudden cardiac deaths

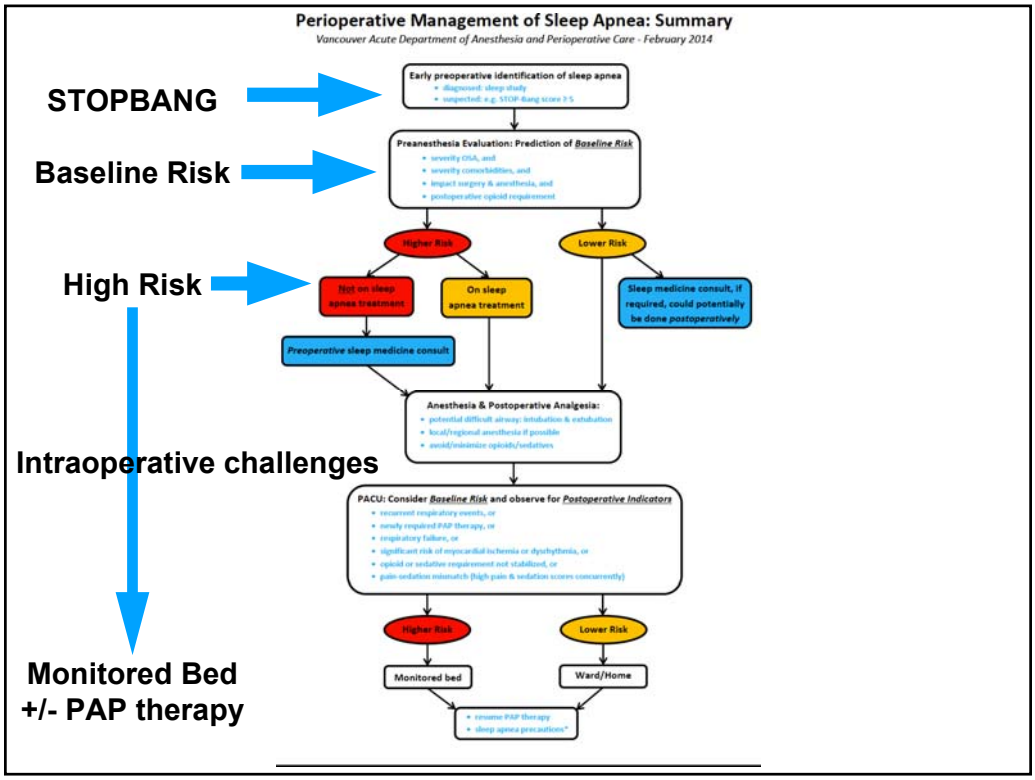
# STOPBANG

**TABLE 2.** STOP-BANG Questionnaire for identifying patients with obstructive sleep apnea (OSA)

| | |
|---|---|
| SNORE | Do you snore loudly? (Snoring can be heard through closed door) |
| TIRED | Do you feel tired, sleepy, fatigued, during daytime? |
| OBSERVED | Has anyone seen you stop breathing during sleep? |
| BLOOD PRESSURE | Do you have or are you being treated for high blood pressure? |
| BMI | Is your BMI > 35kg/m2? |
| AGE | Are you older than 50? |
| NECK CIRCUMFERENCE | Is your neck circumference greater than 40 cm? |
| GENDER | Are you a male? |

If the answer to three or more of these questions is "yes," a presumptive diagnosis of OSA can be made.

Modified from: Chung F, Elsaid H. Screening for obstructive sleep apnea before surgery: why is it important? *Current Op Anaesthesiol.* 2009;22: 405–411.



# Rehab services

# Atelectasis

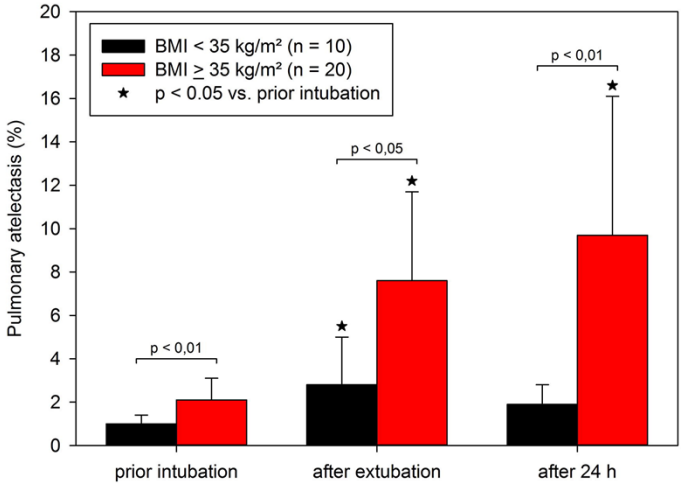



**Fig. 3. Lung atelectasis prior and after general anesthesia for laparoscopic surgery and 24 h postoperative. Pulmonary atelectasis assessed by computer tomography.**

# Special Anesthesia Considerations

- Labour Analgesia:
  - Mandatory Epidural
  - CSE, Intrathecal catheters

# Special Anesthesia Considerations

- Surgical Considerations:
  - Awake fiberoptic bronchoscope
  - Invasive monitoring and lines
  - Time to OR
  - Lifts
  - OR table capacity

# Consider the logistics

# Blood Bank Issues

- Increased risk of PPH.
    - What blood bank resources do you have?

# Venous Thromboembolism

- Consider LMWH. Guidelines variable.

# What about privileging

- The ball is in our court
- "Elective anesthesia for ASA level 3 patients having low-risk procedures" BCMQI Family Practice Anesthesia Clinical Privileging Dictionary 2015
- "Elective anesthesia for ASA level 3 patients in a hospital that has the additional services required to manage their comorbid conditions, with careful consideration of patient selection that is appropriate for the facility's individual perioperative surgical program capabilities" BCMQI Family Practice Anesthesia Clinical Privileging Dictionary 2017 revision.

# Summary

- Pregnant patients with elevated BMI are at high risk for multiple complications including death.
- The BMI is just the tip of the iceberg.
- Potential complications need to be anticipated, planned for and managed by a multidisciplinary team.
- Any women can deliver in any facility that has the ability to provide the services she might require to manage her likely complications.