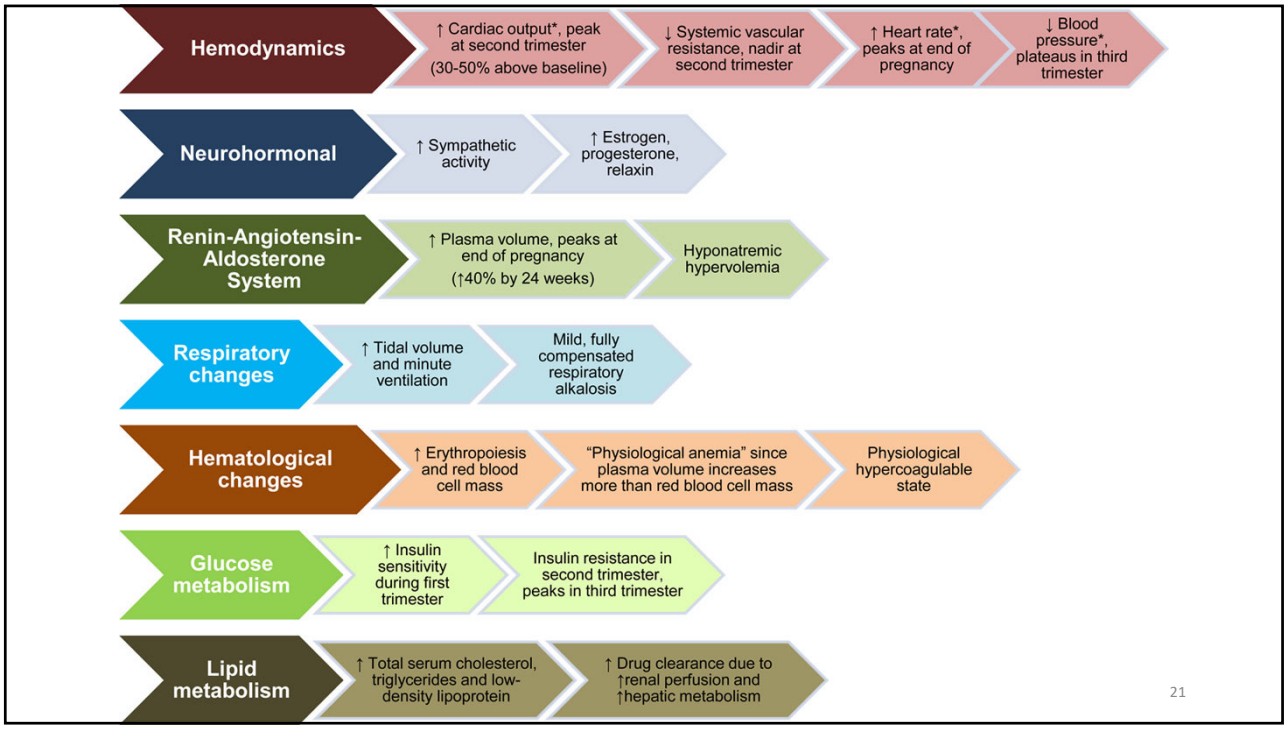
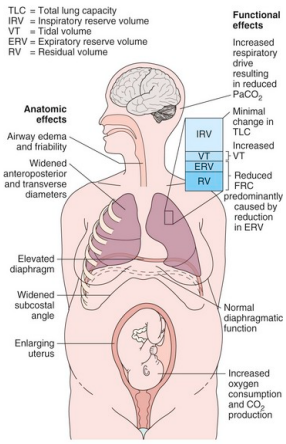


21

Adaptive changes of pregnancy affecting pre-transport care – Pulmonary



- Progressive decrease in functional residual capacity (FRC) by 10% to 25% by term
- Major change is decreased expiratory reserve volume.
- Chest wall and total respiratory compliance reduced in the third trimester from chest wall changes and increased abdominal pressure.
- Minute ventilation increases 20-40%,driven by increased tidal volume from progesterone, causing respiratory alkalosis with compensatory metabolic acidosis
- Decreased FRC, ERV + increased oxygen consumption increase risk of hypoxia, and rapid desaturation with sedation

Lapinsky.Pregnancy. https://thoracickey.com/pregnancy/ Accessed 8/17/2024

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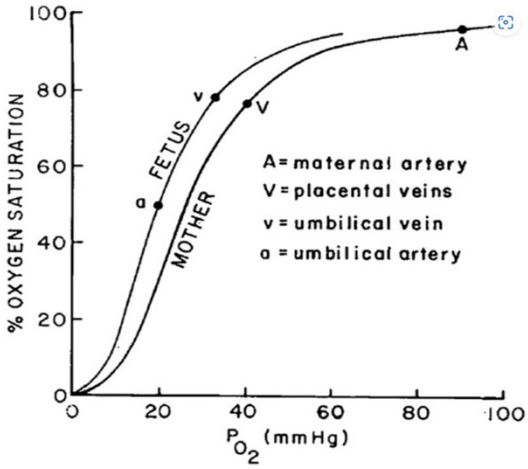
22

Oxyhemoglobin dissociation curve in pregnancy



Figure

Caption

Oxyhemoglobin dissociation curves of maternal and fetal blood. The position of the fetal curve allows for greater binding of oxygen at lower PO2. (From: Meschia, G. J Reproductive Med 1979;23(4);165) Used with permission from Hindawi

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23

EXAMPLE

Safe Motherhood Initiative: Maternal Early Warning System

ACOG The American College of Obstetricians and Gynecologists District II

Recommended MEWS Option: Modified MEWC

(MEWC = Maternal Early Warning Criteria)*

If ANY of these, mom is already in trouble!

Systolic BP (mmHg)	<90 or >160
Diastolic BP (mmHg)	>100
Heart Rate	<50 or >120
Respiratory Rate	<10 or >24
O_2 Sat on room air; %	<95
Oliguria, mL/hr x 2hrs	<35
Temperature	<36 C or >38 C
WBC	<4,000 or >15,000

Positive screen

1 abnormal criteria, sustained for >20 minutes

Maternal agitation, confusion, or unresponsiveness; patient with hypertension reporting a non-remitting headache or shortness of breath
→ *requires immediate attention*

ACOG The American College of Obstetricians and Gynecologists District II

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*Mhyre et al., 2014, National Partnership for Maternal Safety

24

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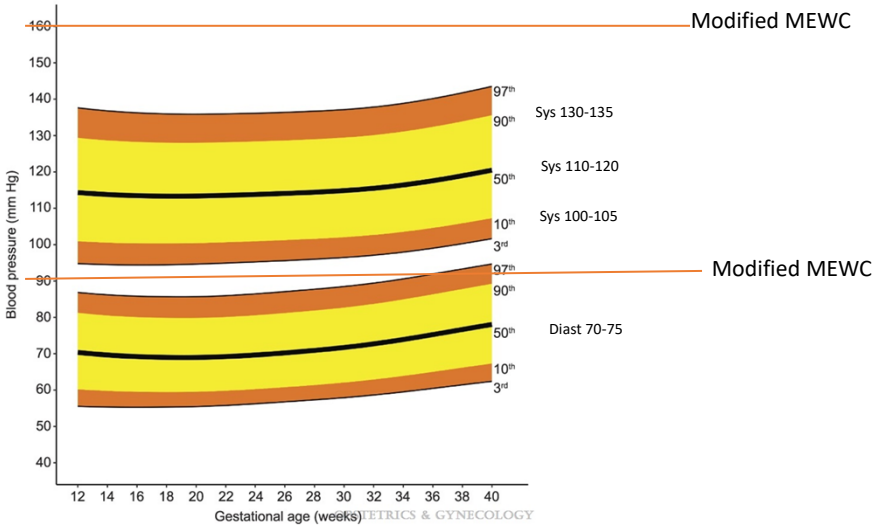

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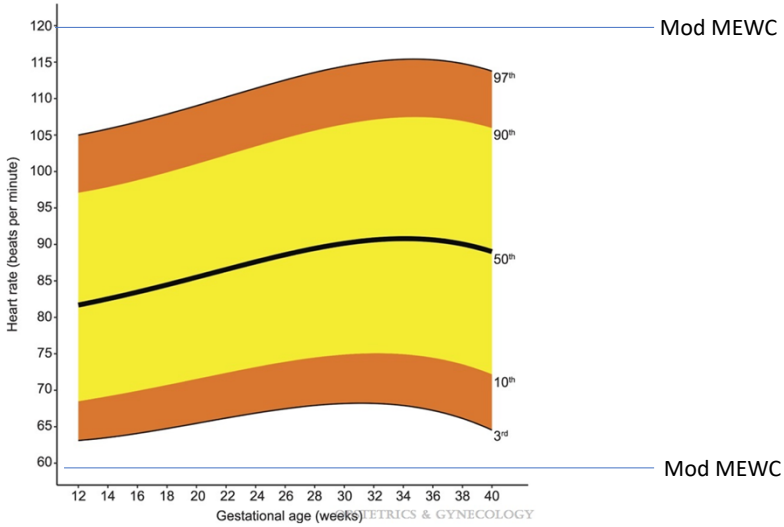
25

25



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26

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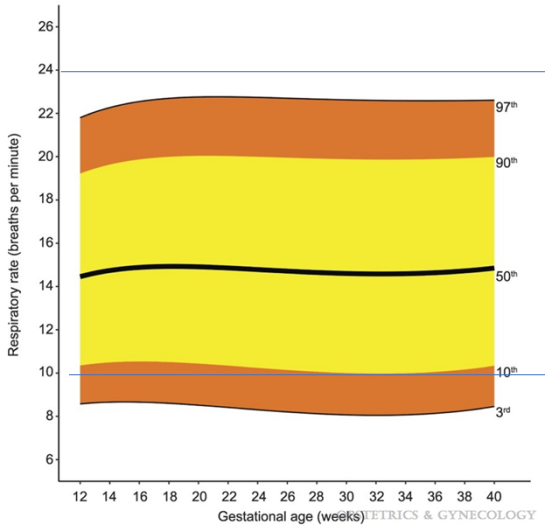

Mod MEWC

Mod MEWC

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27

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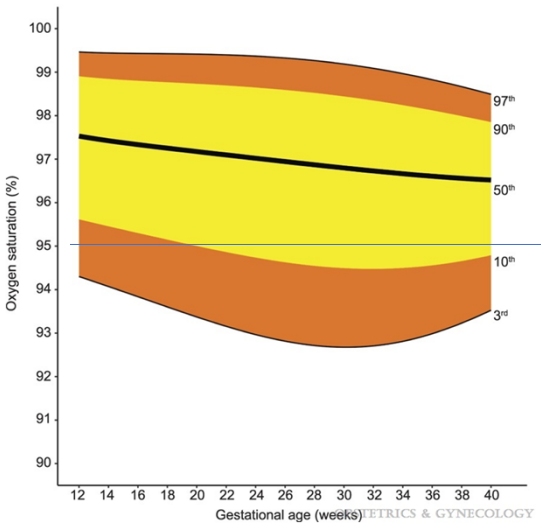

Mod MEWC

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28

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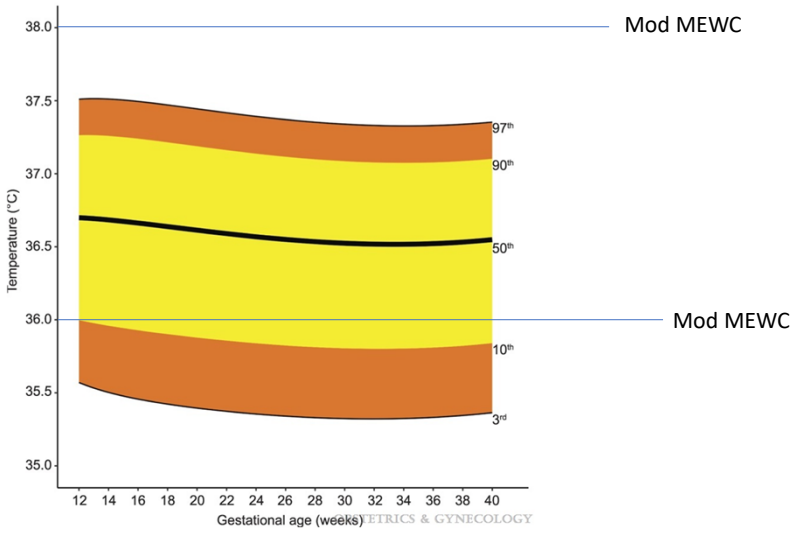

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29

29

The Obstetric Airway

Table 1. Anatomic and physiological factors affecting the obstetric airway

Upper airway edema	Decreased functional residual capacity
Breast enlargement	Increased oxygen consumption
Excessive weight gain	Increased risk of aspiration
Cephalad displacement of diaphragm	Preeclampsia

Important to know:
Assume this will be a difficult airway
Induction meds are the same as usual
Intubate earlier than in nonpregnant patient d/t rapid decompensation
pCO2 >/= 40 = is NOT NORMAL; it is acute respiratory failure!!
Preoxygenate well to 100% for several minutes if possible
Be prepared for rapid desaturation and difficult intubation; have equipment, experienced intubator
High risk of aspiration with sedation, lying flat, paralytic; use cricoid pressure, head up
Leftward manual displacement when lying flat, if uterus at umbilicus
Stop and bag if saturation drops < 94% as she will drop more before coming up
Use ETT that is smaller than you would normally use
After intubation, target pCO2 32-35, SpO2 > 94%

Oxford-Horrey et.al. Am J Perinatol 2020;37:1044–1051

30

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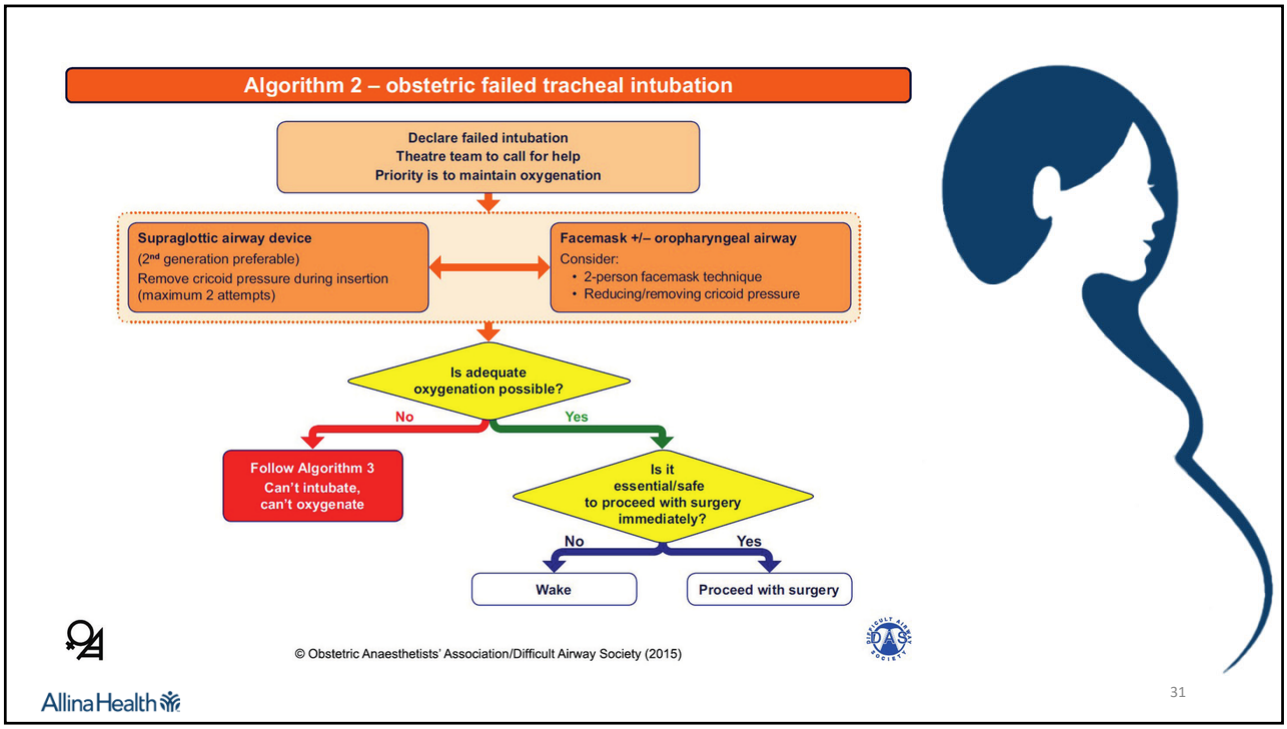
Algorithm 2 – obstetric failed tracheal intubation
Declare failed intubation
Theatre team to call for help
Priority is to maintain oxygenation
Supraglottic airway device
(2nd generation preferable)
Remove cricoid pressure during insertion
(maximum 2 attempts)
Facemask +/– oropharyngeal airway
Consider:
• 2-person facemask technique
• Reducing/removing cricoid pressure
Is adequate oxygenation possible?
No
Yes
Follow Algorithm 3
Can't intubate, can't oxygenate
Is it essential/safe to proceed with surgery immediately?
No
Yes
Wake
Proceed with surgery
© Obstetric Anaesthetists' Association/Difficult Airway Society (2015)
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31

31