

## Maternal-Fetal Assessment

- If the nurse cannot clinically evaluate the effects of medication at least every 15 minutes or if a physician who has privileges to perform a cesarean is not readily available
  - **The oxytocin infusion should be discontinued until that level of care can be provided**

• ACOG, 2009; Simpson, 2020, p. s16

## Fetal Assessment

- High-risk fetal assessments (evaluate/review)
  - **First stage of labor**
    - Every 15 minutes
  - **Second stage of labor**
    - **Passive fetal descent phase**
      - Every 15 minutes
    - **Active pushing phase**
      - Every 5 minutes
- Document according to unit protocols
  - Simpson, 2020, p. s13

## AWHONN 2018 Position Statement: Fetal Heart Monitoring

- Assessment of fetal status **with oxytocin**
  - Latent phase:
    - every 15 minutes
  - Active phase:
    - every 15 minutes
  - Second stage **with passive fetal descent**
    - Every 15 minutes
  - Second stage **with active pushing**
    - Every 5 minutes

\*Frequency of assessment should be determined based on status of mother and fetus and at times may need to occur more often based on clinical needs

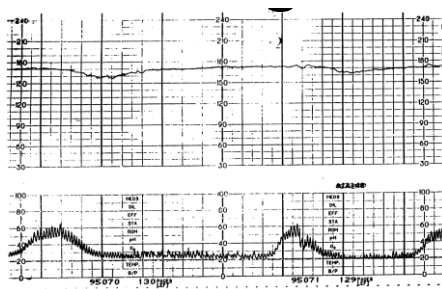
## Fetal Status Second Stage

- Continuous bedside attendance during pushing efforts is recommended
- During the active phase of pushing, summary documentation of fetal status every 15 to 30 minutes indicating there was continuous nursing bedside attendance and evaluation is reasonable
  - Simpson, 2020, pp. s13-14

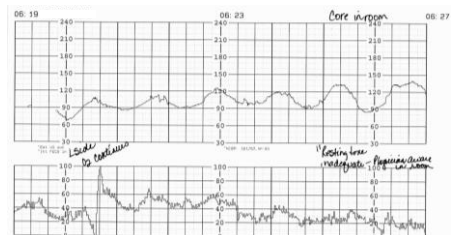
•Assess and respond to the FHR patterns

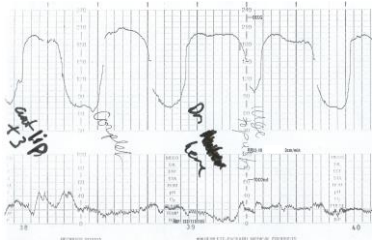
FHR Patterns

- Observe the evolution of fetal heart rate patterns over time
- Be on the watch for these patterns
  - Absent variability with recurrent late decelerations
  - Absent variability with recurrent variable decelerations
  - Absent variability with fetal bradycardia

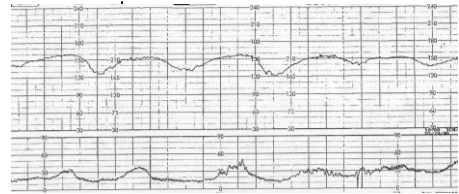


Gravida 1, Para 0, 40 ½ weeks  
Pilocin at 6 ml/min  
External toco, FSE





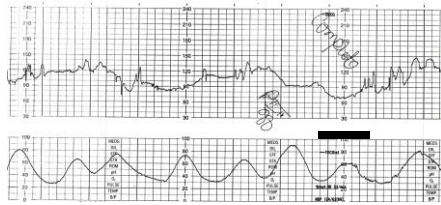
Recurrent variable decelerations with absent variability



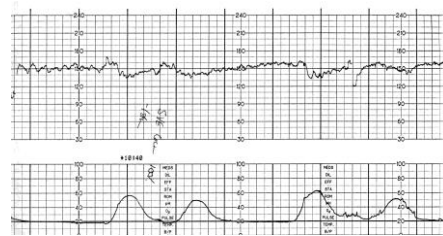
Gravida 2, Para 1, 38 1/2 weeks  
 Trail of Labor after Cesarean in spontaneous labor  
 6 cm, 100%, -3  
 External toco, FSE

### Assess and Respond to the Uterine Activity

- Generally, uterine activity is assessed at the same frequency as the FHR
- Simpson, 2020, p. s13



1120 Complete, 100%, +2  
IUPC



Coupling of contractions

Coupling and Tripling of Contractions

- May be seen during oxytocin administration
- Suggested treatment is
  - Temporary discontinuation of oxytocin
  - Lateral positioning
  - Initiation of a fluid bolus
  - Restart of oxytocin after 30 minutes or more...
    - Miller, Miller, & Cypher (2017) p. 96

Coupling and Tripling of Contractions

- May occur with further increases in oxytocin rates
  - Due to excessive oxytocin and oxytocin receptor site desensitization
- It is a myth that these types of patterns are best treated by increasing the oxytocin rate
  - (referred to as "Pit'ing through the pattern")
    - Simpson, 2020, p. s23

## Coupling and Tripling of Contractions

- Management of these patterns
  - Reduce or discontinue the oxytocin until uterine activity returns to normal
  - Often a 30-minute to 1-hour rest period with IV fluid bolus of LR will help
    - Simpson, 2020, p. s23

## Vital Signs

- Should be recorded at least every 4 hours
  - Perinatal Guidelines (2017, p. 239)
- Depends upon what else is going on
  - epidural analgesia
  - ruptured membranes
  - elevated temperature
  - elevated blood pressure
  - Etc.
- Follow hospital protocol/policy/procedure

## The Nurse Should Know, Assess for, and Respond to Potential Complications

- Uterine tachysystole
- Fetal heart rate changes
- Uterine rupture
- Hyponatremia (water intoxication)
- Hypotension

## Tachysystole

- Defined by NICHD as frequency of contractions
  - greater than 5 in 10 minutes averaged over a 30 minute window
- Don't forget about duration, intensity and resting tone
  - Example next slide...

NICHD 2008 Update Terminology to Describe Uterine Activity

- **Normal**
  - Less than or equal to 5 contractions in 10 minutes, averaged over a 30 minute window
- **Tachysystole**
  - Greater than 5 contractions in 10 minutes, averaged over a 30-minute window

NICHD 2008 Uterine Activity

- **Characteristics of uterine contractions**
  - Tachysystole should always be qualified as to the presence or absence of associated FHR decelerations
  - The term tachysystole applies to both spontaneous or stimulated labor
    - The clinical response to tachysystole may differ depending on whether contractions are spontaneous or stimulated

NICHD 2008 Uterine Activity

- **The terms hyperstimulation and hypercontractility are not defined and should be abandoned....**

Excessive Uterine Activity:  
Miller, Miller, & Cypher 2017, p. 87

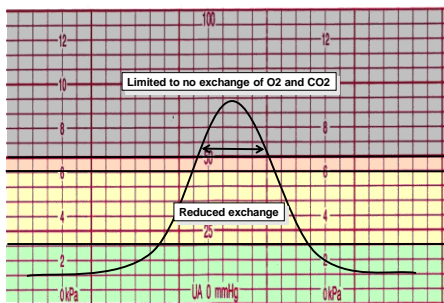
Tachysystole	Greater than 5 contractions in 10 minutes, averaged over 30 minutes
Excessive contraction duration (also known as tetanic contractions; uterine tetany)	A single series of contractions lasting 2 minutes or more
Hypertonus	Resting tone greater than 20-25 mmHg with an IUPC or a uterus that does not return to soft by palpation between contractions
Inadequate relaxation time between contractions	First stage: less than 60 seconds Second stage: less than 45 seconds

## •What Does Research Tell Us?

### Affect of Contractions on the Fetus REMEMBER THIS!

- Uterine contractions result in
  - Intermittent diminished blood flow to the intervillous space
    - Where oxygen exchange occurs
  - Most healthy fetuses tolerate this intermittent diminished blood flow
  - If this intermittent interruption of blood flow exceeds a critical level over time
    - There is a risk for potential deterioration of fetal acid-base

Simpson (2020), p. s23



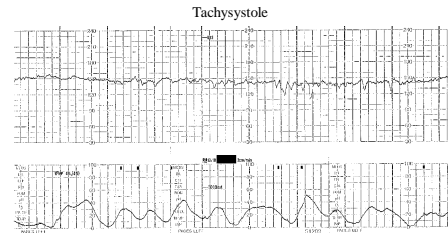
### What's Missing From the 2008 Definition?

NICHD

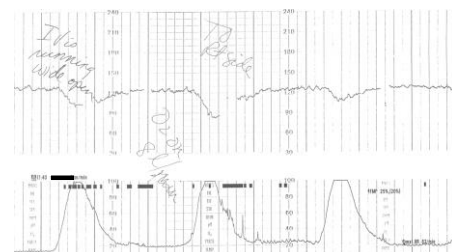
- Duration of contractions
  - What's too long?
- Intensity
  - What's too strong?
- Resting tone
  - What is too high?

Tachysystole/Excessive Uterine Activity

- More than 5 contractions in 10 minutes averaged over 30 minutes
- Contractions lasting 2 minutes or more
- Insufficient return of uterine resting tone between contractions via palpation or intraamniotic pressure above 25 mmHg between contractions via IUPC
  - Simpson, 2020, p. s 23; s37

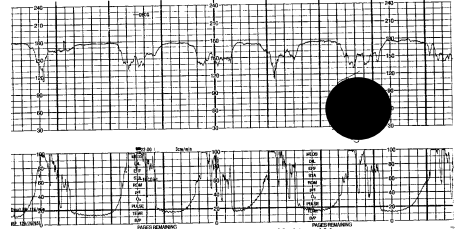
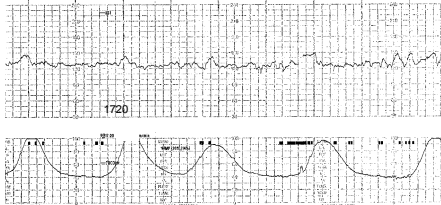


The tracing continued like this for 30 minutes



Patient is 2 cm with an IUPC  
Notice how the contractions are squaring off at 100 mmHg?





What about the resting tone with an IUPC?

The Oxytocin "In Use" Checklist represents a guideline for care, however individualized medical care is directed by the healthcare provider.

Oxytocin "In Use" Checklist

Fetal assessment parameters

- Met
- Not met

Uterine contractions parameters

- Met
- Not met

Review checklist each time Oxytocin dosage rate is increased or at least every 30 minutes if the dosage remains unchanged. Oxytocin should be stopped or decreased if the following checklist cannot be completed.

- Fetal assessment indicates:
  - At least one acceleration of 15 bpm x 15 seconds in 30 minutes or minimal to moderate variability for 10 of the previous 30 minutes.
  - No more than one late deceleration occurred.
  - No more than two variable decelerations exceeding 60 seconds in duration and decreasing greater than 60 bpm from the baseline within the previous 30 minutes.
  - Absence of prolonged deceleration(s).
- Uterine contractions:
  - No more than 5 uterine contractions in 10 minutes for any 30 minute interval.
  - No more than one contraction lasting greater than 120 seconds duration.
  - Uterus palpates soft between contractions.
  - If IUPC is in place, MVU must calculate less than 300 mm Hg and the baseline resting tone must be less than 25 mm Hg.

Sample Oxytocin Checklist

Suggested Clinical Protocol  
Induced Tachysystole

for Oxytocin-

- With **normal** FHR
  - Lateral repositioning
  - IV fluid bolus of at least 500 ml LR as indicated
- If uterine activity has not returned to normal after 10-15 minutes
  - Decrease oxytocin rate by at least half
  - If uterine activity has not returned to normal after 10-15 more minutes
    - discontinue oxytocin until uterine activity is normal
- Simpson, 2020, p. s25

Suggested Clinical Protocol for Oxytocin-Induced Tachysystole

- With Indeterminate or Abnormal FHR
  - Discontinue oxytocin
  - Lateral positioning
  - IV fluid bolus of at least 500 mL of LR as indicated
  - Consider oxygen at 10 L/min via nonrebreather facemask
    - Discontinue as soon as possible based on fetal rate pattern
  - If no response, consider 0.25 mg terbutaline, subcutaneously
    - Simpson, 2020, p. s25

ACOG (2010) Management of Uterine Tachysystole

Spontaneous Labor		Labor Induction or Augmentation	
Category I Tracing	Category II or III Tracing	Category I Tracing	Category II or III Tracing
No Interventions Required	Intrauterine resuscitative measures	Decrease uterotonics	Decrease or stop uterotonics
	If no resolution, consider tocolytic		Intrauterine resuscitative measures
			If no resolution, consider tocolytic

From American College of Obstetricians and Gynecologists (2010). Management of Intrapartum Fetal Heart Rate Tracings. Practice Bulletin #116. Washington, DC: ACOG. Page 6

Tachysystole

- “Waiting to respond to excessive uterine activity until there are significant changes in fetal heart rate is not appropriate”
- “To prevent fetal acidemia at birth, ...focus on identifying and promoting normal (adequate) uterine activity and correcting underlying causes of any type of excessive uterine activity”
  - Miller, Miller, & Cypher (2017, p. 87)

Interventions for Tachysystole

Oxytocin-Induced

- Simpson & James (2008), found that simultaneous initiation of all three interventions resolved oxytocin-induced tachysystole more rapidly than when used individually

Interventions for Tachysystole

Oxytocin-Induced

Oxytocin discontinuation	Resolution = 14.2 minutes
Oxytocin discontinuation plus IV fluid bolus of at least 500 mL LR	Resolution = 9.8 minutes
Oxytocin discontinuation plus IV fluid bolus of at least 500 mL LR plus change to lateral position	Resolution = 6.1 minutes

Simpson, 2016, p. 31; Simpson & James, 2008

Oxygen and Oxytocin

- When oxygen is chosen for intrauterine resuscitation
  - Oxytocin should not be infusing concurrently with maternal oxygen administration

• AWHONN, 2015, p. 175

Oxygen and Oxytocin

- "If there is a concern for fetal-well-being, simultaneous administration of oxygen and oxytocin does not make sense in the context of minimizing stress to the fetus."
  - Simpson, K. R. (2015)

AWHONN Oxygen

- Based on research, withholding oxygen from mothers in labor when the FHR pattern is indeterminate or abnormal to prevent possible adverse effects of oxygen-free radicals is NOT recommended
  - AWHONN, 2015, p. 175

## Oxygen for Intrauterine Resuscitation as presented previously...



- Intrapartum oxygen: The use of oxygen for fetal indications is controversial, as there is no evidence of benefit and potential risk of fetal harm. As the use of high-flow nasal cannula or face mask oxygen may be aerosolizing procedures, the routine use for fetal indications should be suspended. Oxygen should be considered if maternal hypoxia is noted.

## ACOG

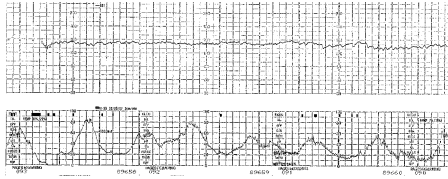
Q: Should intrapartum oxygen continue to be used in the setting of COVID-19?

Last updated April 29, 2020 at 4:00 p.m. EST

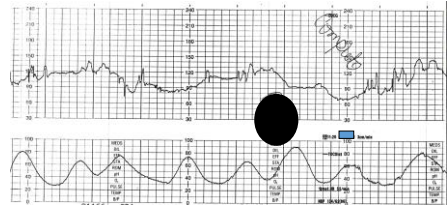
Oxygen should continue to be considered if maternal hypoxia is noted (Practice Bulletin 116). Based on limited data, high-flow oxygen use is not considered an aerosol-generating procedure (AGP). Still, there is insufficient evidence about the cleaning and filtering when using oxygen. As such, facilities should consider suspending routine use of intrapartum oxygen for indications where benefits of use are not well-established (e.g., category II and III fetal heart rate tracing).

### March 26, 2020 - AWHONN's Update on Oxygen Use for Fetal Resuscitation during the COVID-19 Pandemic

Maternal nurses routinely initiate interventions to maximize fetal oxygenation, including maternal position change, stimulating uterine activity by adjusting or administering medications as ordered, administering intravenous fluids, and using amnioinfusion, and modifying pushing techniques. When some or all of these measures have not resulted in improvement of the fetal heart rate pattern, maternal oxygen therapy has been suggested as an additional measure. However, consensus on maternal oxygen administration as an intrauterine resuscitative measure is lacking. In the setting of COVID-19, consideration should be given to not initiating oxygen for fetal resuscitation. Oxygen therapy should still be considered to improve maternal oxygen status, if needed.



Pitocin is running at 5 mu/min.  
What would you do here?



1120 Complete, 100%, +2  
IUPC  
Would you keep pitocin running here?  
What else would you do?