

MURSE
labon & delivery

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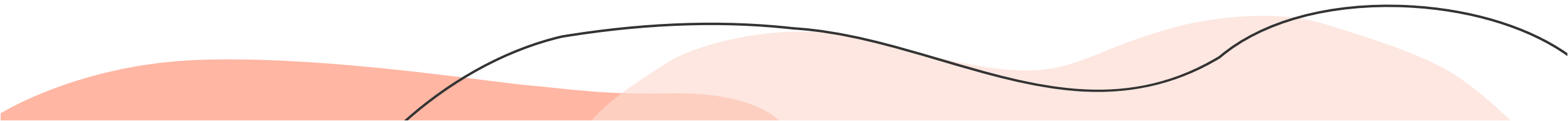
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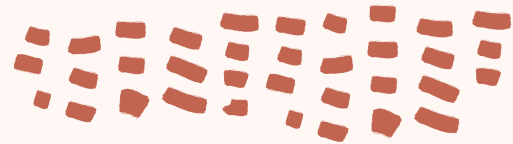


What is a word that describes either why you want to be a L&D nurse or what you love about being an L&D nurse?

① Start presenting to display the poll results on this slide.

AUTONOMY

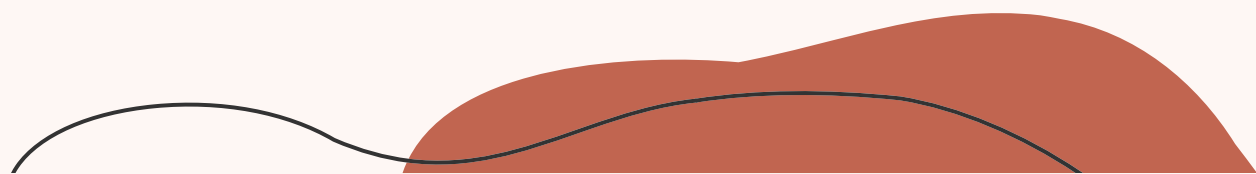




LABOR

Dysfunction . Induction . Augmentation

Janae Baldwin BSN, RN, C-EFM





Objectives

- 1. Identify different causes of labor dystocia**
- 2. Differentiate between induction and augmentation of labor**
- 3. Identify different techniques used for induction or augmentation of labor**

Labor

Uterine contractions of sufficient frequency, intensity and duration as to result in effacement and dilation of the cervix.

| Characteristics of Normal Spontaneous Labor | | | |
|---|---|----------|-----------------------------|
| Period | Defining Events | Dilation | Duration |
| First Stage | Onset of labor until complete cervical dilation. | 0-10cm | |
| Laten Phase | | 0-6cm | Up to 14hr-20hr |
| Active Phase | | 6-10cm | 0.5-1.5cm/hr |
| Second Stage | Complete cervical dilation until delivery of the baby | | Up to 5hr 1cm descent/hr |
| Third Stage | Delivery of the baby until delivery of the placenta | | Up to 30min |

Dysfunctional Labor (Dystocia)

Refers to the long, difficult or abnormally slow progress of labor. It may be diagnosed in the first stage or second stage of labor.

Dystocia accounts for 25%-55% of primary cesarean deliveries

Prolong

slow rate of progress

>20h in nullipara and
>14h in multipara

Protraction

long time for progress to occur

<0.5cm/h cervical change
in nullipara and
<1cm/h in multipara

Arrest

progress stops

Cervical dilation stops in the
active phase; confirmed by 2
SVE's performed 2hr apart

Rapid

fast progression

Completion of labor and
vaginal birth within 3h of
the first contraction

Dystocia Causes – 4 Ps

POWER



Uterine Contractions

Risk factors include:

- Maternal age >40
- Body type
- Uterine anomalies
- Malpresentation of fetus
- Overstimulation with oxytocin
- Maternal fatigue, fear, dehydration or positioning during labor

PASSAGE

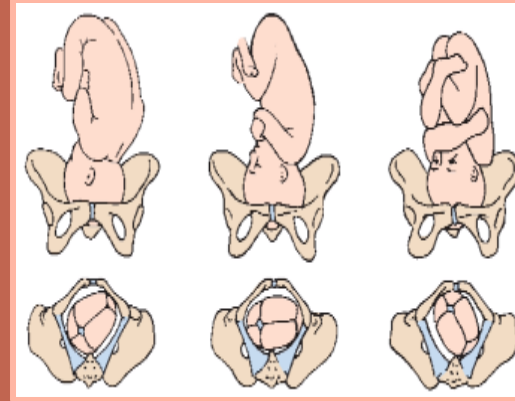


Maternal Factors

Risk factors include:

- Pelvic contractures
- Ovarian tumors
- Cervical stenosis
- Excessively full bladder or rectum

PASSENGER

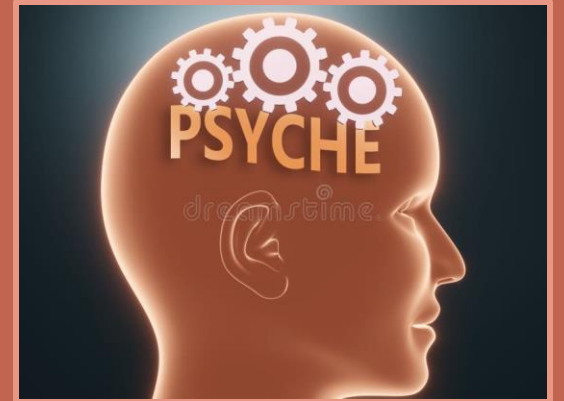


Fetal Factors

Risk factors include:

- Fetus >4000gm
- Fetal anomalies
- Malpresentation
- Malposition

PSYCHE



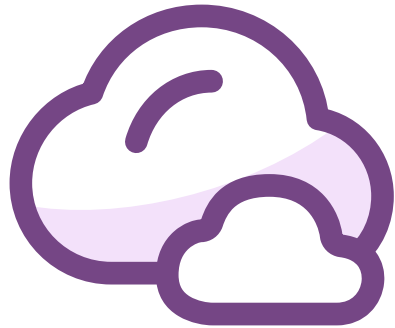
Maternal Factors

Risk factors include:

- Fear
- Anxiety/Depression
- Stress
- Feeling unsafe or unsupported
- Lack of preparation

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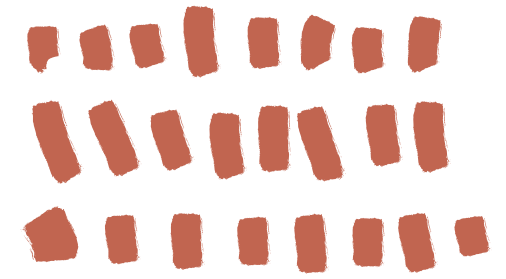


What interventions can we do as nurses to optimize the 4 Ps?

① Start presenting to display the poll results on this slide.

AUGMENTATION of labor

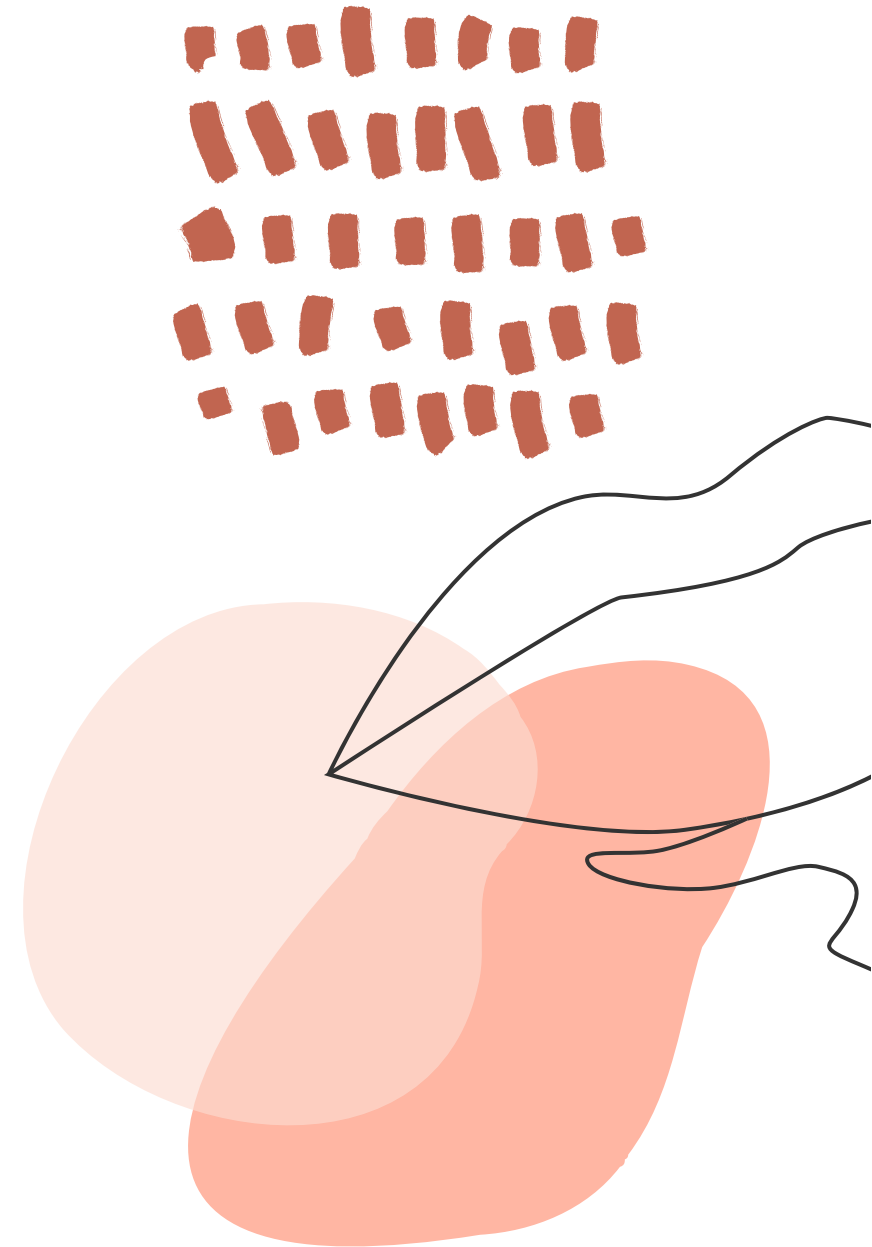
Augmentation of labor is the further stimulation of labor that has already begun spontaneously but is not progressing normally.



INDUCTION of labor

Induction of labor is the artificial initiation of labor before it begins spontaneously.

- **When is induction of labor performed?**
- **When should induction not be performed?**
- **How can you tell if an induction of labor is likely to succeed?**



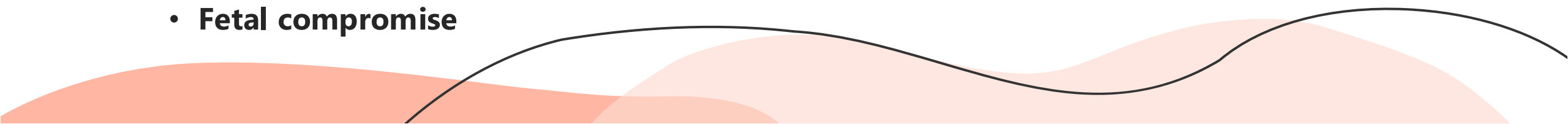
When is induction of labor performed?

- **Gestational age is reached when the fetus is at increased risk of stillbirth or complication from remaining undelivered**

Or

- **Electively, after 39^{0/7} weeks of gestation**

Or

- **A medical or obstetric complication threatens the health of the mother or fetus, and the situation can be expected to improve if delivered**
 - **PROM**
 - **Macrosomia**
 - **Hypertensive disorders or pregnancy**
 - **Intra-amniotic infection**
 - **Diabetes mellitus or gestational diabetes**
 - **Cardiovascular disease**
 - **Fetal compromise**
- 

**“Thanksgiving
is not a
complication of
pregnancy.”**

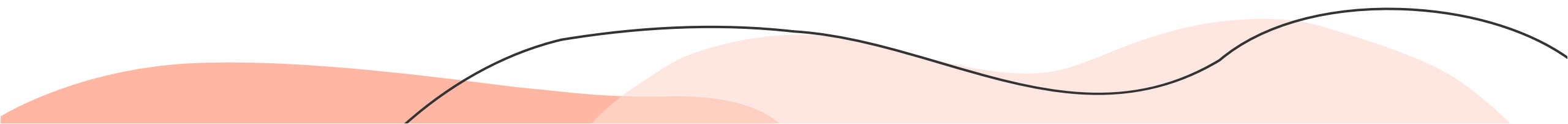
**Robin Elise Weiss
pregnancy.about.com**



You rely on your obstetrician to do what's best for you and the baby...



When should induction *not* be performed?

- **Category III fetal heart rate pattern**
 - **Placenta previa**
 - **Umbilical cord prolapse or umbilical cord in front of the fetal presenting part**
 - **Active genital herpes lesions**
 - **Abnormal fetal presentations (face, brow, compound, transverse lie, breech)**
- 

How can you tell if an induction is likely to succeed?

1. Examine the woman

The closer to labor the patient is when examined, the more the:

1. Cervix will be pulled anteriorly
2. Cervix will be effaced and softened
3. Internal cervical os will be dilated

2. Calculate a Bishop Score

Indicates the likelihood that an induction attempt will be successful.

≥ 8 = induction will be successful

≤ 6 = unfavorable; cervical ripening necessary

| Bishop Scoring System | | | | |
|-----------------------|-----------|---------|----------|--------|
| | 0 | 1 | 2 | 3 |
| Dilation | Closed | 1-2 cm | 3-4 cm | 5-6 cm |
| Length | 0%-30% | 40%-50% | 60%-70% | 80% |
| Station | -3 | -2 | -1, 0 | +1, +2 |
| Consistency | Firm | Medium | Soft | |
| Position | Posterior | Midline | Anterior | |

How can you tell if an induction is likely to succeed?

Let's practice

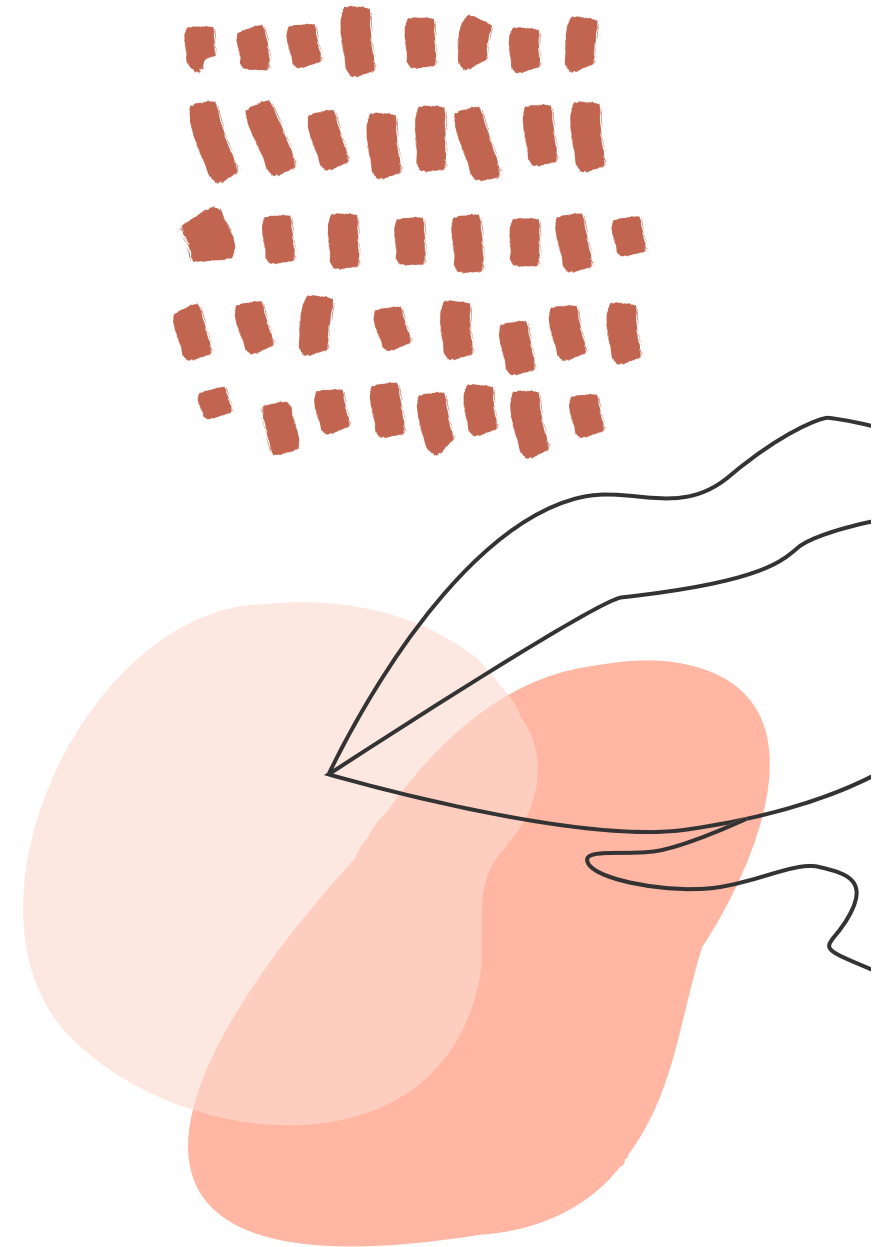
Our patient is requesting an induction, is the induction likely to be successful?

On her last cervical exam, she was 2/50/0, soft and anterior.

| Bishop Scoring System | | | | | |
|-----------------------|-----------|---------|----------|--------|----------|
| | 0 | 1 | 2 | 3 | Score |
| Dilation | Closed | 1-2 cm | 3-4 cm | 5-6 cm | <u>1</u> |
| Length | 0%-30% | 40%-50% | 60%-70% | 80% | <u>1</u> |
| Station | -3 | -2 | -1, 0 | +1, +2 | <u>2</u> |
| Consistency | Firm | Medium | Soft | | <u>2</u> |
| Position | Posterior | Midline | Anterior | | <u>2</u> |
| | | | | | 8 |



“Induction of labor should only be undertaken when the benefits to the health of the mother or fetus outweigh the risks of continuing the pregnancy and risks associated with the procedure.”
(WHO, 2020)



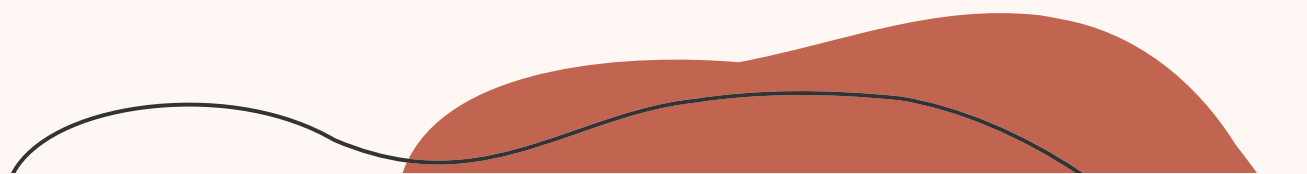


Techniques for Labor Induction and Augmentation

A photograph of a pregnant woman lying in a hospital bed, wearing a light blue hospital gown. She is resting her hands on her bare pregnant belly. The image is centered on a solid reddish-orange background.

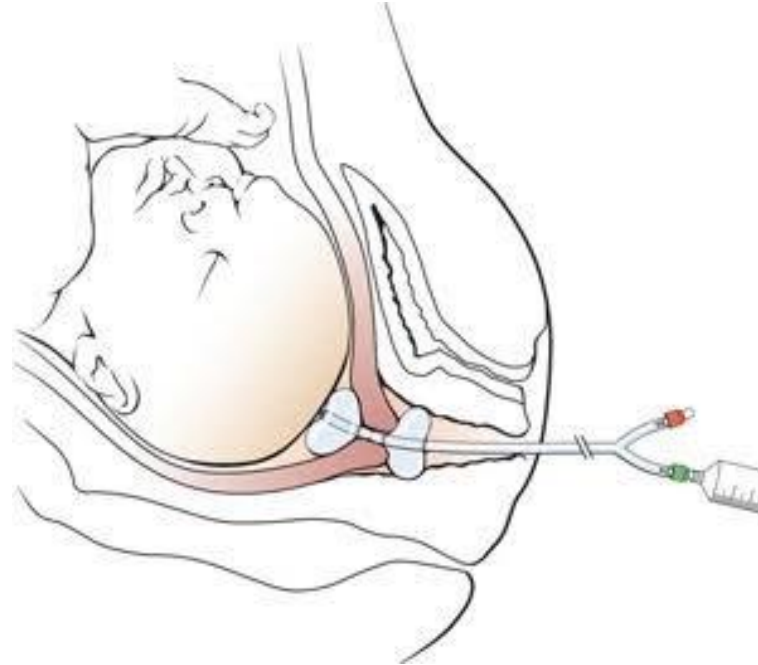
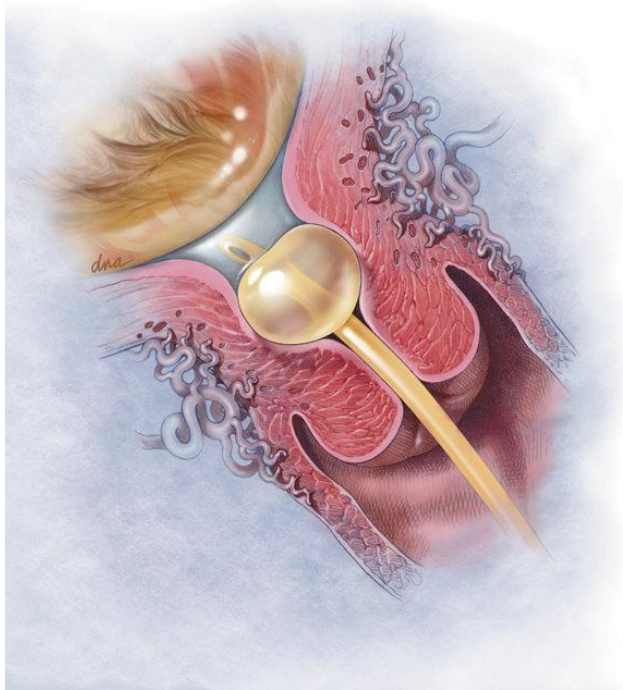


Cervical Ripening

- The goal of cervical ripening is to facilitate the process of cervical softening, thinning and dilating
 - Cervical ripening methods include:
 - **Mechanical techniques**
 - **Prostaglandins**
- 

Cervical Ripening: Mechanical

Foley Bulb or Cervical Ripening Balloon



CONTRAINDICATIONS

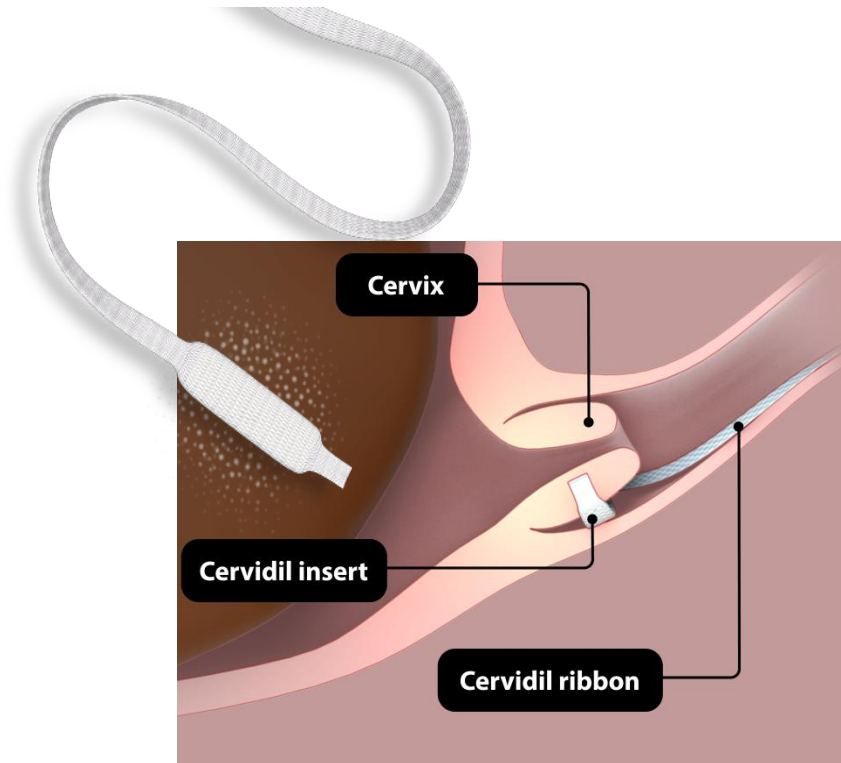
- Placenta previa or vasa previa
 - Transverse fetal orientation
 - Prolapsed umbilical cord
- Abnormal fetal heart-rate patterns
 - Polyhydramnios
- Multiple gestational pregnancy
- Prior classic uterine incision

WARNINGS

- Use with exogenous prostaglandins may increase risk of adverse events
- Should not be left in longer than 12hr
 - Always inflate with sterile saline
 - Do not overinflate
- If ROM spontaneously, recommended to removed device

Cervical Ripening: Prostaglandin

Misoprostol (cytotec) and Dinoprostone (cervidil)



CONTRAINDICATIONS

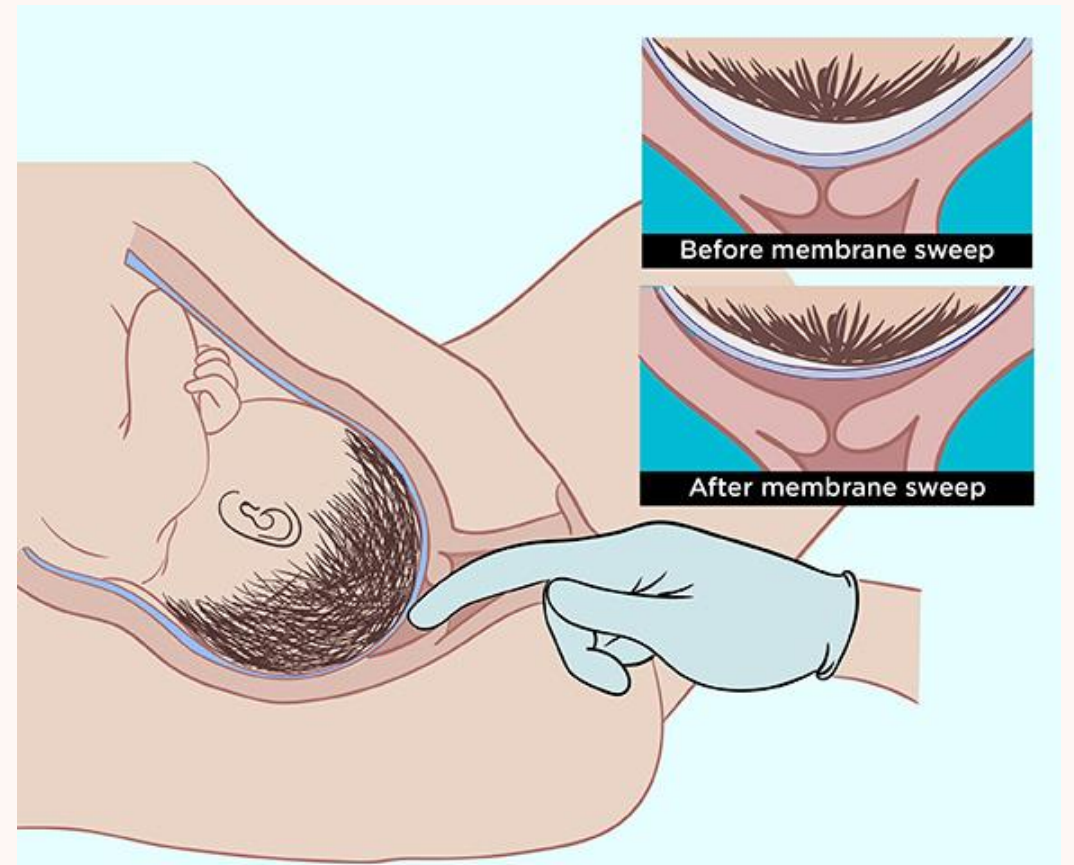
- Known hypersensitivity to prostaglandin
 - Category II fetal heart tracing
 - Tachysystole
 - Placental abruption
 - Placental previa
- Grand multipara (p>5)
 - Malpresentation
- Unexplained vaginal bleeding

PRECAUTIONS

- Hospitalization is recommended
- Monitor uterine activity, fetal heart rate and maternal vital signs
- Allow rest before infusing oxytocin; 30min after cervidil, 4-6hr after cytotec

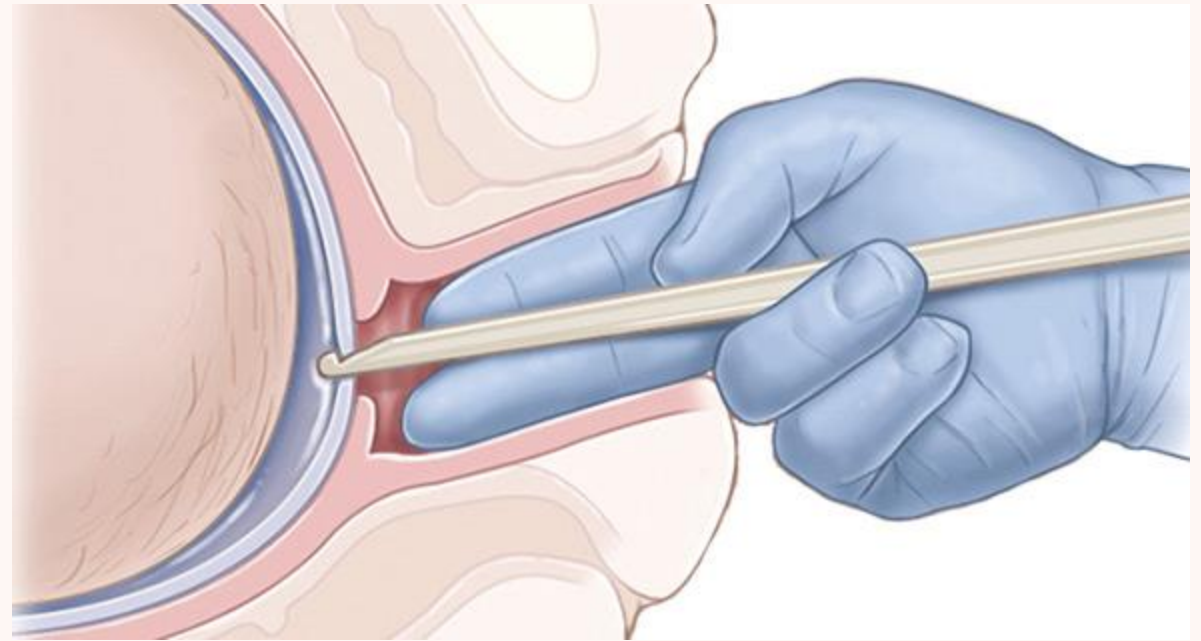
Membrane Stripping

- Common practice to induce labor
- Manual separation the chorioamnionic membrane from the wall of the cervix, which stimulates prostaglandins
- Increases the likelihood of spontaneous labor within 48 hours



Amniotomy

- Artificial rupture of the amniotic sac
- Continuous fetal heart rate monitoring should be used before, during and immediately after the procedure
- Risk of amniotomy
 - Prolapsed umbilical cord
 - Infection
 - Umbilical cord compression
 - Bleeding from an unidentified placenta previa or vasa previa



think
COAT?



Nipple Stimulation

- Nipple stimulation or unilateral breast stimulation has been used as a natural and inexpensive nonmedical method for inducing labor.
- Only used in low-risk pregnancies.
- Breast stimulation is associated with a decrease in postpartum hemorrhage.

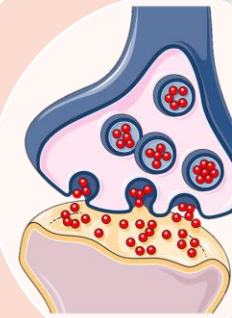


Oxytocin Infusion

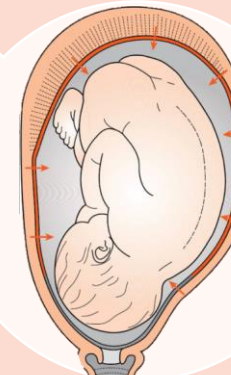
- Most commonly used drug for induction/augmentation of labor
- Hormone normally released by the posterior pituitary gland, acts on smooth muscle of the uterus to initiate uterine contractions



Oxytocin is secreted by the pituitary gland



Oxytocin binds to the oxytocin receptors of the uterus

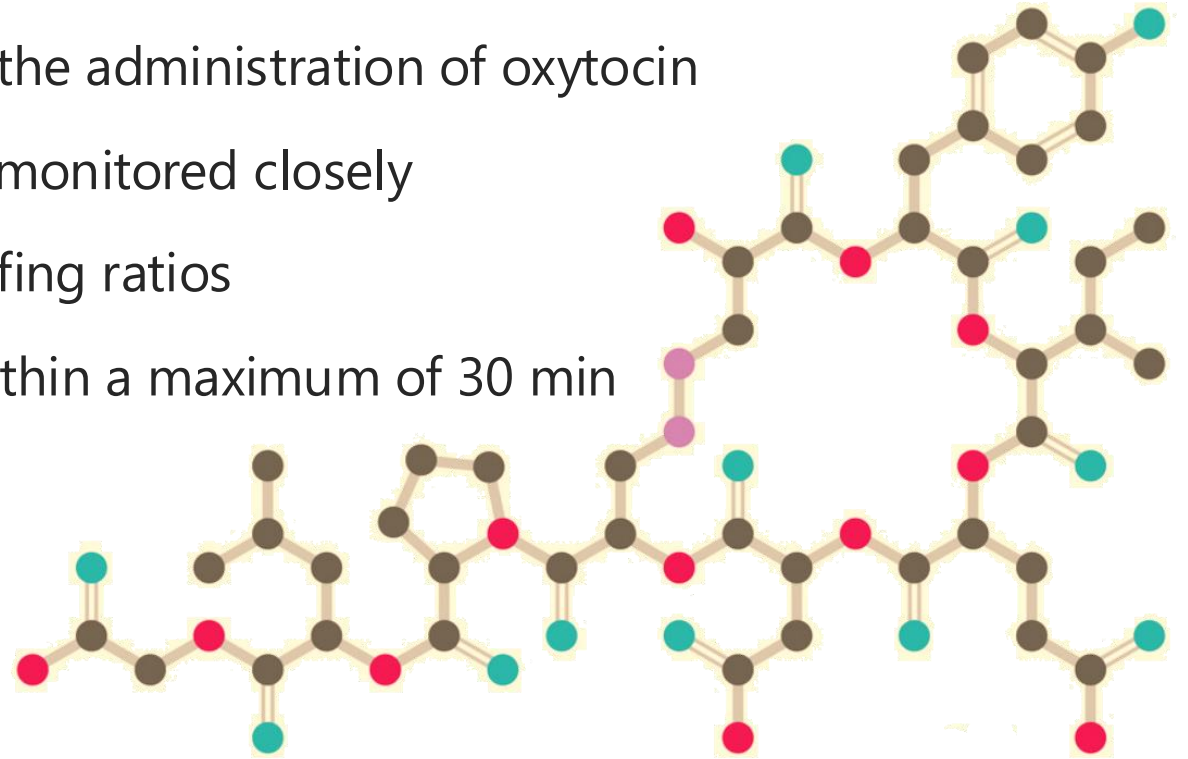


Oxytocin acts on smooth muscle of the uterus to initiate uterine contractions

Oxytocin Infusion

Facts about oxytocin

- Oxytocin is a HIGH ALERT medication
- Each hospital should have guidelines for the administration of oxytocin
- Fetal heart rate and uterine contractions monitored closely
- Guidelines for nursing care including staffing ratios
- Ability to perform an emergency c/sec within a maximum of 30 min

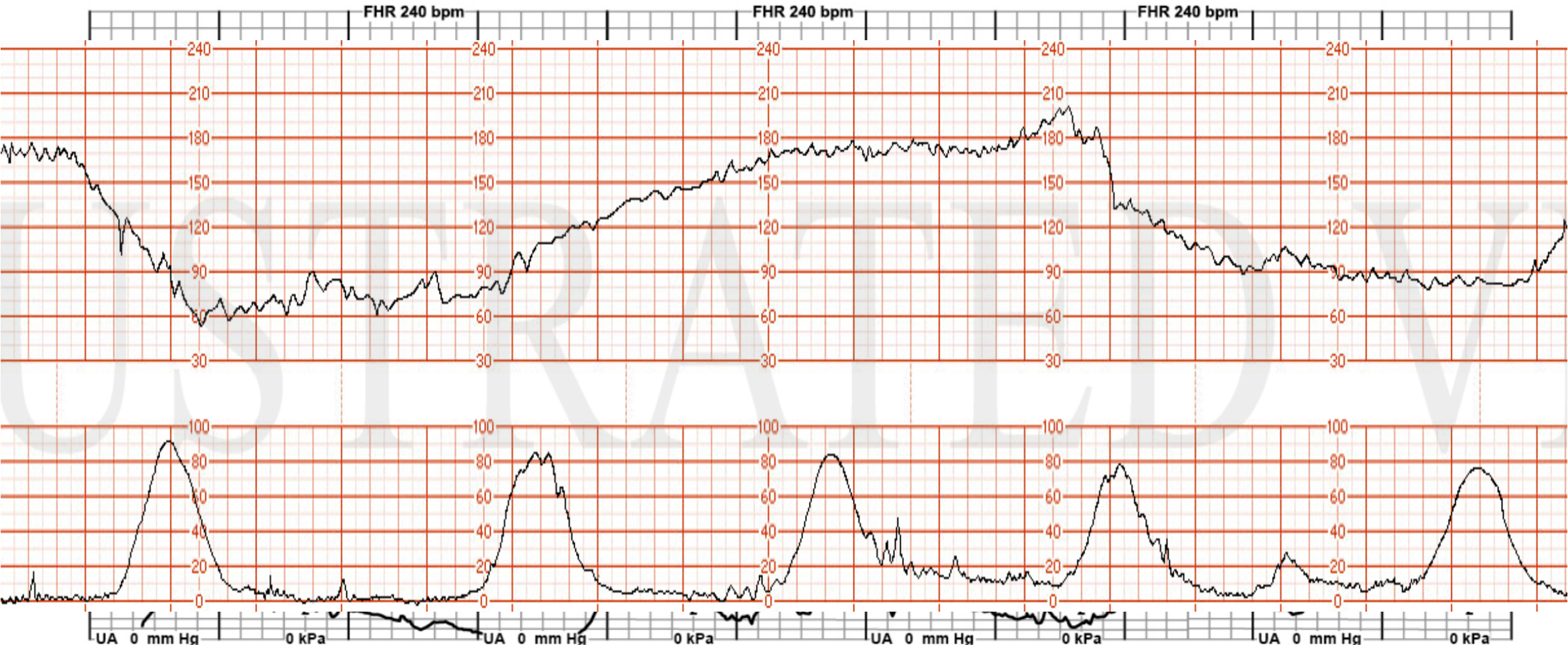


Oxytocin Infusion

| Labor Stimulation with Oxytocin | | | |
|---------------------------------|---------------|-------------------------------|-----------------------|
| Regimen | Starting Dose | Incremental Increase (mU/min) | Dosage Interval (min) |
| Low-Dose | 0.5-2 | 1-2 | 15-40 |
| High-Dose | 6 | 3-6 | 15-40 |

- Uterine response to IV oxytocin occurs in 3-5mins
- Steady state plasma level are achieved within 40mins
- Maintain dosage when normal labor pattern occurs
- Should be discontinued/decreased if tachysystole or concerning FHR occurs
- $\frac{1}{2}$ life of oxytocin is 10-15min

Oxytocin Infusion- *Is it safe to titrate?*





Resources

PCEP Book 2: Maternal and Fetal Care (4th Edition) American Academy of Pediatrics DOI: <https://doi.org/10.1542/9781610024976>
ISBN electronic: 978-1-61002-497-6 ISBN print: 978-1-61002-496-9
Publication date: October 2021

LeFevre NM, Krumm E, Cobb WJ. Labor dystocia in nulliparous women. *Am Fam Physician* . 2021 Jan 15;103(2):90-96.

ACOG Practice Bulletin No. 107: Induction of labor. *Obstetrics & Gynecology*. 2009 Aug; 114(2 Pt 1):386-397.

Simpson, Kathleen. Cervical ripening and labor induction and augmentation, 5th Edition. AWHONN Practice Monograph. 2020 Aug 7; 49(5).