

# Biology 1050: Group Presentation

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December 15, 2021

# Stages & Phases of Labor

## STAGE 1: DILATION

- ❖ Early Phase
- ❖ Active Phase
- ❖ Transition Phase

## STAGE 2: PUSHING & DELIVERY OF BABY

## STAGE 3: DELIVERY OF PLACENTA

## STAGE 4: POSTPARTUM

### Stages of Labor

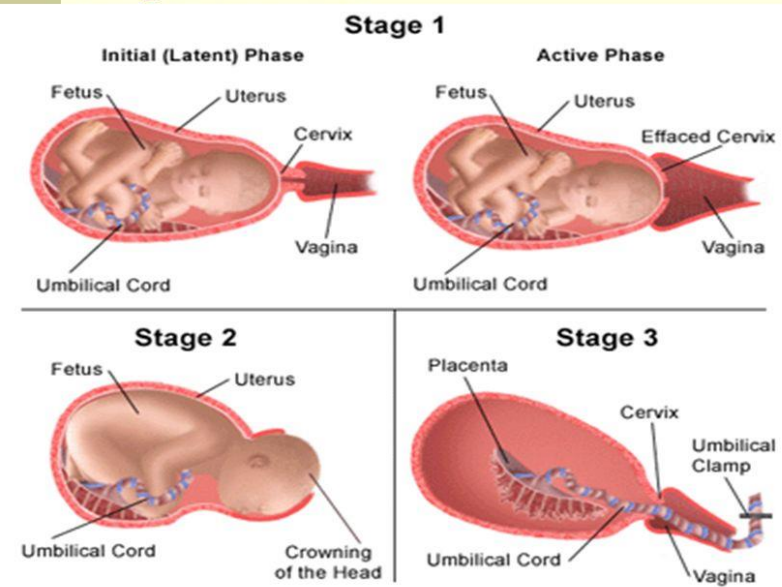


Image Credit: (Hoover, 2021)

# Stage 1: Dilation

## 3 Phases: Early, Active & Transition



Image Credit: (Donaldson-Evans, 2020)

Early Phase: 0-4 centimeters

- ❖ Effacement: 0-80%
- ❖ Contractions: 15-20mins apart, 30-45 seconds long, can still talk through them, uncomfortable
- ❖ Average time frame: 5-20 hours
- ❖ Birthing person may:
  - Feel excited that labor has begun
  - Go about the day as normal
  - Go for a walk, take a shower
  - Sleep
  - Get items ready to go to birth place
  - Inform midwife of contraction pattern

# Stage 1: Dilation

## 3 Phases: Early, Active, & Transition

Active Phase: 4-7 centimeters

- ❖ Effacement: 80-100%
- ❖ Contractions: 3-5mins apart, 45-60 seconds long, need to concentrate through them, intense
- ❖ Average time frame: 5-12 hours
- ❖ Birthing person may:
  - Become more focused, quiet
  - Find a rhythm to manage contractions
  - Utilize comfort measures
  - Travel to birth place



Image Credit: [www.creativecommons.com](http://www.creativecommons.com)

# Stage 1: Dilation

## 3 Phases: Early, Active, & Transition

Transition: 8-10 centimeters

- ❖ Contractions: 2-3 mins apart, 60-90 seconds, very intense, pressure in pelvic area
- ❖ Average time frame: 2-3hrs
- ❖ Birthing person may:
  - Change their mind about having a baby, say “I can’t do this”
  - Become very focused
  - Experience more pelvic pressure



Image Credit: (Bologna, 2019).

# Stage 2: Pushing & Delivery of Baby



Image Credit: (Lane, 2019)

Average time frame: 2-4 hours

Birthing Person May:

- ❖ The urge to push
- ❖ Feel excited that its time to push
- ❖ Feel relief when pushing
- ❖ Feel afraid of involuntary pushing



# Delivery of The Placenta

Average time frame: 5-30mins

Birth Person May:

- ❖ Experience cramping
- ❖ Experience contractions
- ❖ Feel a sense of relief



Image Credit: (Jean, 2020)

# Stage 4: Postpartum



Image Credit: (Bologna, 2019)

Postpartum:

- ❖ Meet your baby!
- ❖ Family members meet baby
- ❖ Breastfeeding initiation
- ❖ Tear repair
- ❖ Newborn exam
- ❖ Eat
- ❖ Rest



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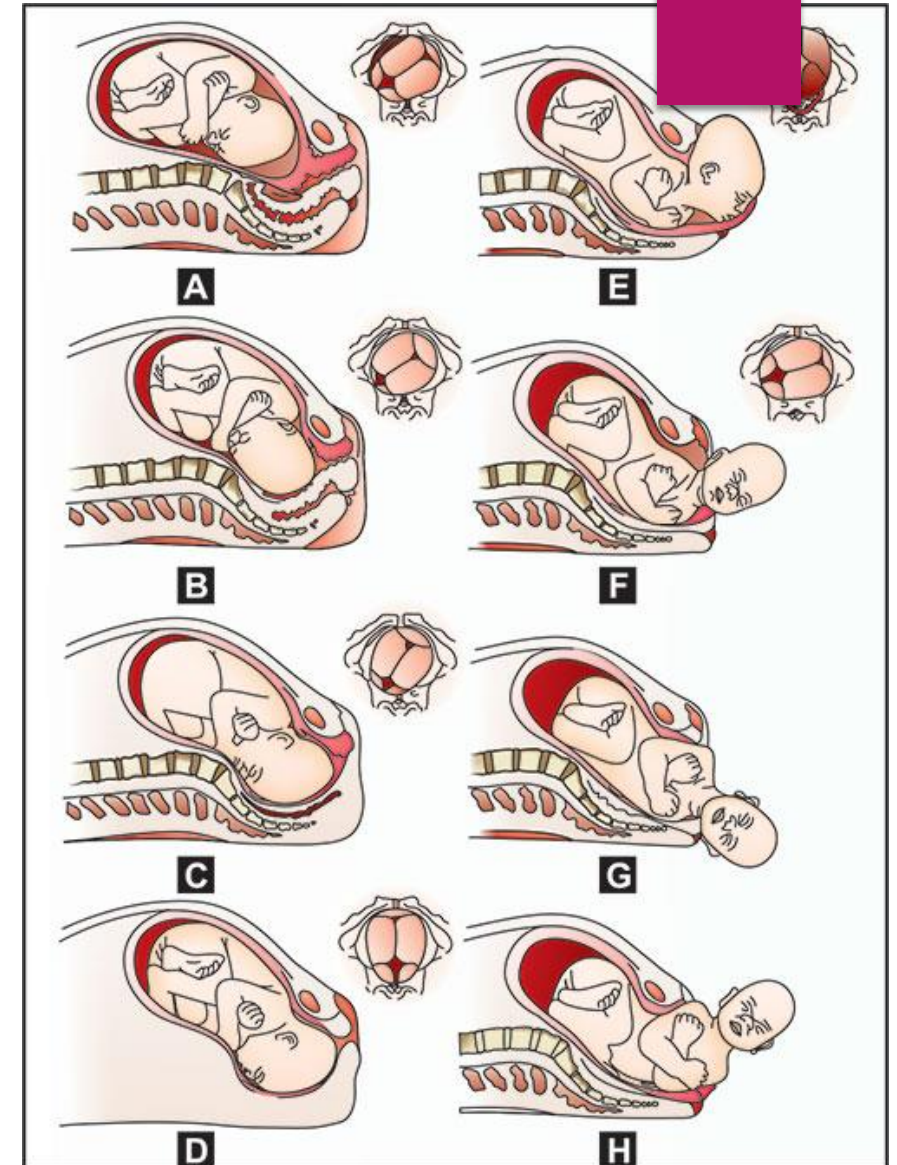
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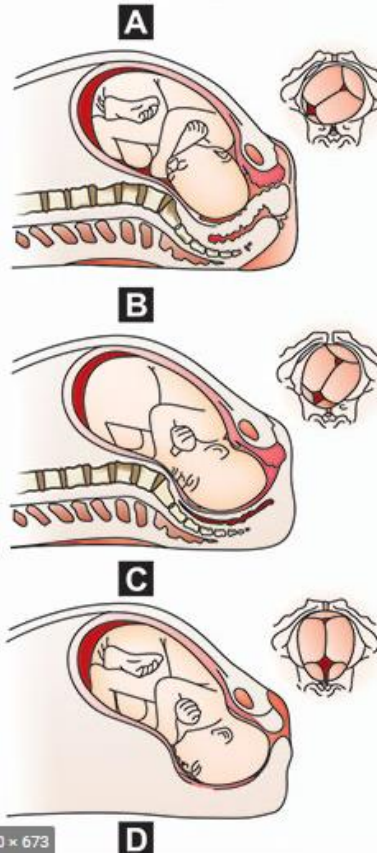
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# Cardinal Movements of Labor

- Engagement
- Descent and Flexion
- Internal Rotation
- Extension
- External Rotation
- Expulsion



# Engagement and Descent/Flexion



(Gupta, 2008)

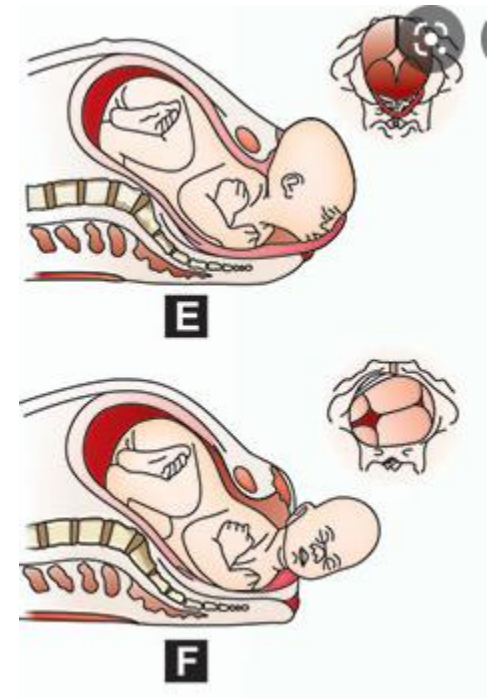
**Engagement:** Your baby is “engaged” when the widest part of their head (measured from ear tip to ear tip across the head) has passed into the pelvic inlet. This is “0” station and is measured by the relation of the head to the ischial spines in the pelvis.

**Descent/Flexion:** These two cardinal movements go hand in hand. **Descent**, sometimes called “lightening”, is the movement of your baby’s head through the bony part of the pelvis and reaches the depth of the pelvic cavity. As descent happens, flexion is also occurring. During **flexion**, your baby’s head pushes against pelvic tissue, aligning their head with their chin toward their chest.

# Internal Rotation and Extension

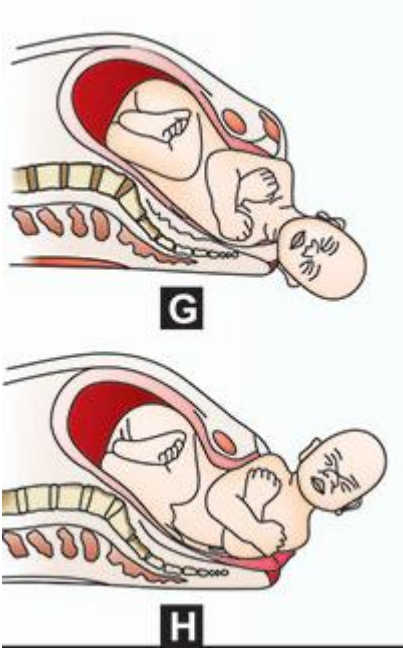
**Internal Rotation:** Your baby rotates his/her head and body from side to side to front to back to navigate the changing diameters of the pelvis.

**Extension:** After internal rotation is complete and the head passes through the pelvis at the nape of the neck, a rest occurs as the neck is under the pubic arch. Extension occurs as the head, face, and chin are born.



(Gupta, 2008)

# External Rotation and Expulsion



(Gupta, 2008)

**External Rotation:** After the head of your baby is born, there is a slight pause in the action of labor. During this pause, your baby will rotate from face-down to 90 degrees to face towards one of your thighs. This is also called **restitution**.

**Expulsion:** Your baby's body follows the rotation of the head and this allows the top and then bottom shoulders to be born!

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# Hormones

Estrogen

Oxytocin

Catecholamines

Endorphins

Prostaglandins

Relaxin

# Introducing our Main Players:

Estrogen- Plays an important role from preconception to postpartum.

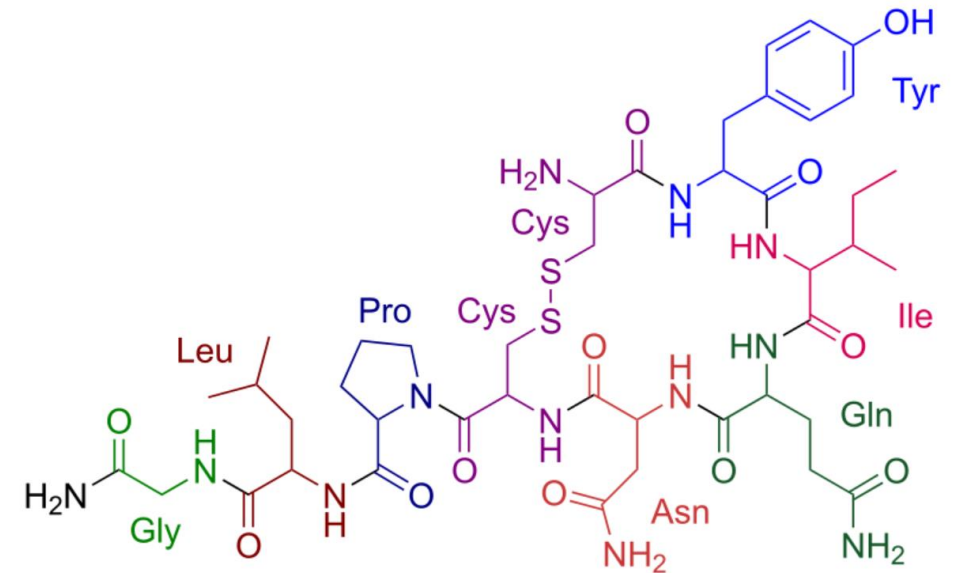
Oxytocin- Known as the love hormone, one of its jobs is to make the uterus contract.

Catecholamines- Can be seen in the fight-or-flight, freeze or fawn response.

Endorphins- Also known as “nature's narcotics” more bio available than opioids!

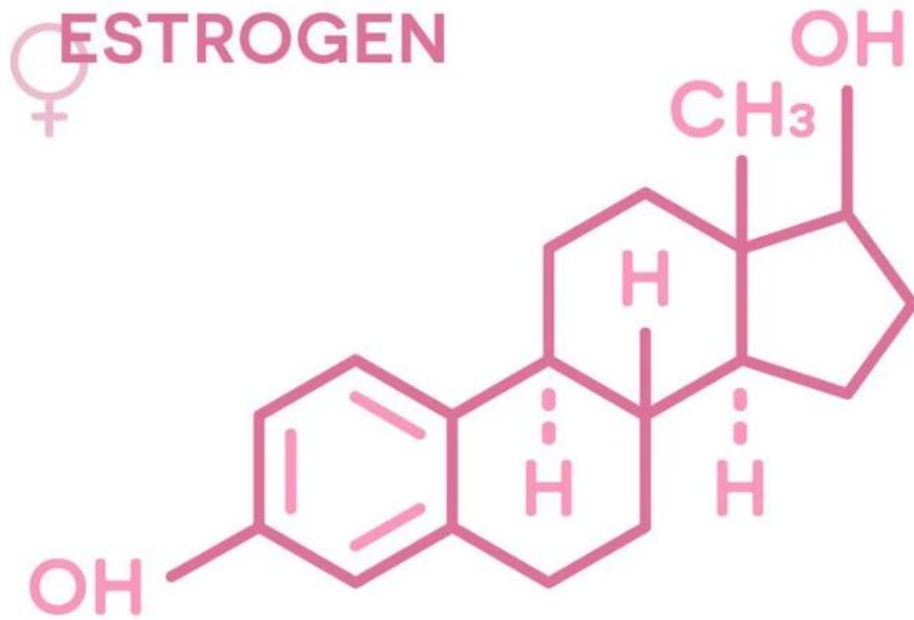
Prostaglandins- Found in semen, and also plays an important role in softening the cervix and aiding in the process of labor.

Relaxin- Responsible for those “loosy goosy” joints and ligaments



(Understanding the Role of Birth Hormones, n.d.)

# Hormones Before Labor



*(Estrogen Dominance and DIM - Symptoms/Natural Options - Clean Cuisine, 2019)*

## BEFORE:

Estrogen- As estrogen levels increase they help to make the uterus more sensitive to oxytocin.

Oxytocin- Is released by the birthing person and aids in building a consistent contraction pattern.

Endorphins- Before labor remain lower, to aid in the ability for the birthing person to rest.

Prostaglandins- Before labor are at high levels causing the cervix to “ripen”. This process is similar to the ripening of a banana!

Relaxin- Before labor relaxes the cervix, ligaments and connective tissue in preparation.

# Hormones During Labor

## DURING:

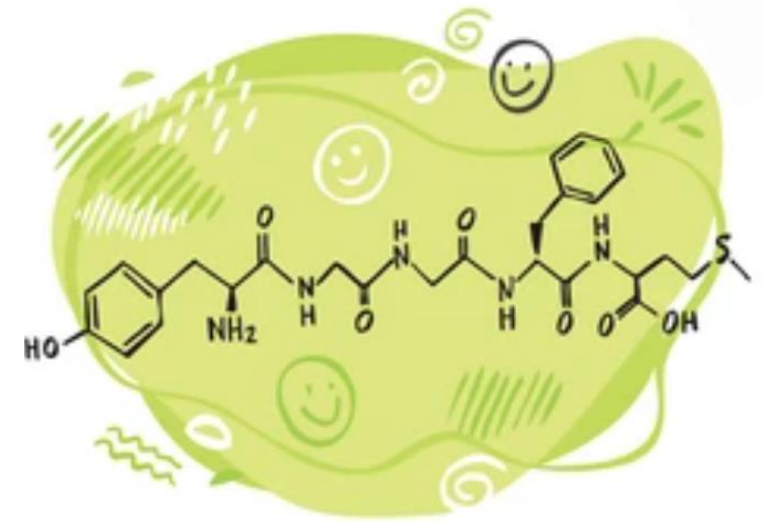
Oxytocin- During labor oxytocin becomes a key player as it continues to make the uterus contract.

Catecholamines- During labor these “scaredy cats” can stall or stop labor. Of oxytocin and Cats come to the party at the same time, Cats always win. HOWEVER, this hormone plays an important role in TRANSITION.

Endorphins- Increase and cross the blood brain barrier, unlike pitocin!

Prostaglandins- Continues to soften the cervix until 100% effaced.

Relaxin- Continues to loosen the ligaments and joints helping the pelvis to accommodate for birth.



endorphin

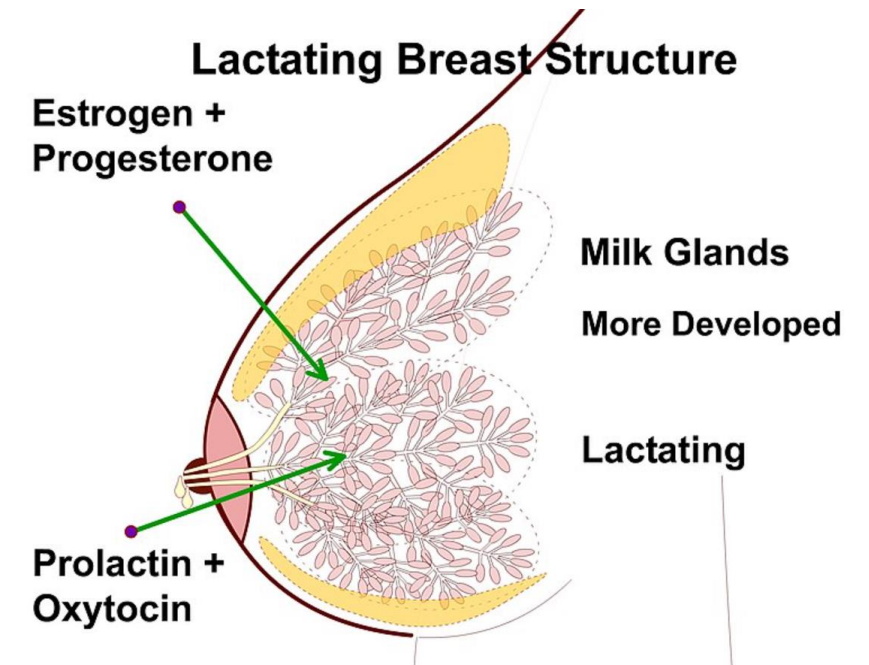
# Hormones After Labor

## AFTER:

Oxytocin- Continues to play an important role as it aids in helping the uterus to involute. and helps to encourage the newly postpartum person to begin to lactate (which might have already started prenatally, but not always!)

Endorphins- Also aid in the bonding process and provides a feeling of euphoria.

Prolactin: The “mothering hormone” or “the bonding hormone” This hormone is responsible for the milk ejection reflex.



(File:Lactating Breast Structure.Jpg - Wikimedia Commons, 2018)

# References

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*File:Lactating Breast Structure.jpg - Wikimedia Commons.* (2018, August 17). Wikimedia Commons. [https://commons.wikimedia.org/wiki/File:Lactating\\_Breast\\_Structure.jpg](https://commons.wikimedia.org/wiki/File:Lactating_Breast_Structure.jpg)

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# Postpartum

What to Expect and How to Prepare

Right After Baby is Born: Bonding Period

After Baby is Born: Physically

Warning and Danger Signs After the Birth

Your New Baby and the First Twenty-Four Hours

After Baby is Born: Emotions

# Postpartum: What to Expect and How to Prepare

- Birthing parents often spend a lot of time preparing for their birth, but do not consider preparing for postpartum as well.
- Postpartum: after a baby is born; a time period of six weeks
- Immediate Postpartum: the immediate postnatal period just after childbirth and the 24 hours following during which the baby's physiologically adaptations and the risks to the birthing person are at their highest



Image Credit: (Bologna, 2019)

# Right After Baby is Born: Bonding Period



## -Skin to skin

- Immediately after birth, baby should be placed skin to skin with their parent. Human parents have a sensitive period right after birth. This is a critical learning period for both the parent and the baby.

## -Why skin to skin?

- It is instinctual to bring a baby up to your chest to see, hear, and feel each other.
- It is a great way to begin your relationship outside the womb.
- There is no need to wipe the baby dry because the amniotic fluid is sterile and is a substance that will create Chemical Skin-to-Skin Imprint (CSI). It helps draw the baby back to the chest area for nursing.
- This process is like a butterfly out of a cocoon. It helps the nursing relationship be stronger and can help enhance milk supply.
- Having the baby skin to skin will regulate their body temperature as well as help oxytocin release to help expel the placenta as well as the involution of the uterus.

# After Baby is Born: Physically

## -3<sup>rd</sup> Stage Labor and the Placenta

- After 2<sup>nd</sup> stage labor, there is still work to be done.
- Once baby is skin to skin with their parent and or nursing, oxytocin is stimulated, and the placenta is typically expelled within 30 minutes. There are many variations of normal with timing of expulsion.
- The average umbilical cord is 21 inches long leaving plenty of room for baby to be on the parent's chest skin to skin.
- 1/3 of the baby's blood volume is still within the umbilical cord. Delaying the cord clamping until the cord is white and has stopped pulsating is important.
- Continued nursing will help shrink the placental site of detachment.
- The placenta should be examined to determine all of it has been delivered and nothing was left behind within the parent's uterus which can lead to sepsis (a serious infection).



# After Baby is Born: Physically Cont...

## -Your Uterus

- Your body worked hard for nine months to accommodate to a growing baby, and now that the baby is born, it will continue to work hard to return to its normal state.

## -Involution

- The return of the uterus to its normal size and position after birth

## -After birth pains

- Additional contractions of the uterus after birth is completed that aid the return of the uterus to its proper size; helps reduce blood loss.

## -Lochia

- The bloody discharge for several weeks following the birth
- Changes from red to light pink or brown

# After Baby is Born: Physically Cont...

## -Walking after the birth

- Walking soon after birth helps to restore circulation.
- Walking also helps with organ realignment and the expulsion of blood clots.
- Walking after the birth should be done soon only if birth was unmedicated, fluids have been replenished, parent is feeling good, and the baby has been nursed.

## -Urinating

- A birthing parent may not realize they need to urinate and may be challenging if there is swelling.
- It is best to relax, listen to the sound of running water, get in the shower and or have water being poured over you.



# Warning and Danger Signs After Birth

- Call your doctor or midwife if you experience the following:
  - Bleeding: saturating two large pads in less than an hour
  - Breast/Chest pain: sudden pain or continued pain when nursing; redness and unusual swelling
  - Fever: elevated temperature over 100.4 degrees
  - Sudden onset of new pain or swelling at site of perineal tear
  - Infection: any of the classical signs of infection (foul smelling lochia, elevated temperature, unusual pain in abdomen, swelling of the vagina, rapid pulse, etc.
  - Depression: sever feelings vs. baby blues

# Your New Baby and the First 24 Hours



## -APGAR

- Rating of baby at birth. Each category is given up to two points:

- 1.Appearance of Color
- 2.Pulse or Heart Rate
- 3.Grimace or Responsiveness
- 4.Activity-Muscle tone
- 5.Respiration-Breathing

## -Color

- Newborns have a pinkish-purple hue from extra blood volume
- This blood will be disposed of gradually
- Skin may be covered in vernix caseosa that has helped with water environment

## -Umbilical Cord

- When it is time, the cord will be clamped.
- Keep the cord dry and keep the top of the diaper below the stump.
- The stump will heal and fall off within 7-14 days.

# Your New Baby and the First 24 Hours cont...

## -Genitals

- It is normal for the scrotum to be enlarged.
- For babies with a vagina, there may be a few drops of blood from the vagina.
- Either baby may have enlarged breast area which is normal.

## -Urination

- The number of wet diapers should match days in age.
- When they are 1 week old, they should have 6-8 wet diapers daily.

## -First bowel movement

- Meconium: a blackish-green tarry substance
- Bowel movement should change to yellow/green after 2 or 3 days

# After Baby is Born: Emotions

## -What to expect emotionally

- The birthing person may experience a range of emotions immediately after birth. They may be grateful the hard work is over. They may be excited/happy/thrilled. They may also feel overwhelmed or have a sense of loss or baby blues. Both are a variation of normal.

## -Needs During This time

- The birthing person needs rest, liquids to replenish blood sugar and for hydration, good food, and A LOT of support by partner/birth team.

# References

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