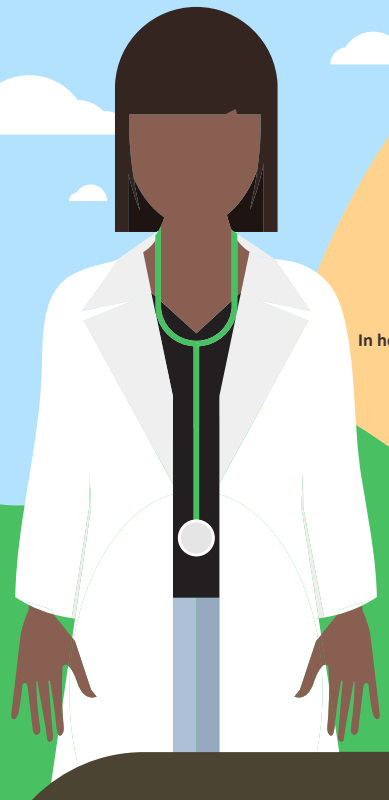
PATHWAY TO A HEALTHY BIRTH

How Clinicians Can Support Beneficial Hormonal Action in Childbirth

In healthy pregnancies, innate, hormonally-driven maternal and fetal/newborn processes are the safest, smoothest route for labor, birth and the crucial days that follow.

Clinicians can offer many specific practices to help ensure that women and babies experience these beneficial processes.

When women and babies need evidence-based interventions, they are also likely to benefit from practices that support the pathway, whenever possible.



DURING PREGNANCY: Beneficial Hormonal Action

Maternal stress hormones are physiologic and not elevated
- Maternal stress response is reduced in pregnancy

WHAT WILL HELP WOMEN STAY ON THE PATHWAY?

- **Minimize stress in prenatal care; encourage women to use stress reduction modalities** for stress in pregnancy
- **Build women's confidence, skills, and knowledge** for coping with labor
- **Encourage women to arrange for a doula** to provide labor support[2]

WHAT CAN PULL WOMEN AWAY FROM THE PATHWAY?

- **Having high stress levels in pregnancy** may ↑ poor birth outcomes[1]
- **Approaching labor with fear and anxiety** may ↓ labor progress
- **Not having good labor support** may ↓ labor progress

LATE PREGNANCY: Beneficial Hormonal Action

Hormones prepare for safe and effective labor, maternal-newborn transitions, breastfeeding, maternal adaptations, and maternal-infant attachment[3,4]
- Maternal uterine oxytocin receptor formation
- Fetal adrenergic receptor formation

WHAT WILL HELP WOMEN STAY ON THE PATHWAY?

- **Wait for labor to begin on its own** unless scheduled birth is the safer course

WHAT CAN PULL WOMEN AWAY FROM THE PATHWAY?

- **Inducing labor**[3] **or having a prelabor cesarean** may ↓ readiness for labor, birth, and after birth

ACTIVE LABOR: Beneficial Hormonal Action

Hormones efficiently progress labor, reduce stress, moderate pain, and prepare for maternal-newborn transitions after birth
Hormones help avoid unneeded interventions and side effects
- Oxytocin, beta-endorphins reduce stress and pain in labor
- Maternal late-labor oxytocin surge expedites pushing
- Fetal catecholamine surge facilitates newborn transitions[4]

WHAT WILL HELP WOMEN STAY ON THE PATHWAY?

- **Ensure a calm, relaxed environment,** and provide doula support[2]
- **Provide comfort measures**
- **Be patient and use practices that help women have a vaginal birth**[8]

WHAT CAN PULL WOMEN AWAY FROM THE PATHWAY?

- **Experiencing excessive stress and pain** may ↓ labor progress
- **Using epidural analgesia** may ↓ labor progress and inhibit pushing[7]
- **Missing late-labor fetal catecholamine surge** due to cesarean section may compromise fetal-to-newborn transition[4]

EARLY LABOR: Beneficial Hormonal Action

Hormones support labor, continue to prepare for upcoming tasks
Hormones help avoid unneeded interventions and side effects
- Oxytocin release in response to labor sensations promotes contractions
- Physiologic pulsatile oxytocin release maintains oxytocin receptor sensitivity[5]

WHAT CAN PULL WOMEN AWAY FROM THE PATHWAY?

- **Moving to hospital in early labor** may ↓ labor progress[6]
- **Using epidural analgesia** may ↓ labor progress[7]
- **Exposing oxytocin receptors to prolonged synthetic oxytocin** may ↓ labor progress and ↑ risk of postpartum hemorrhage[9]

WHAT WILL HELP WOMEN STAY ON THE PATHWAY?

- **Help women stay calm and safe at home during early labor** with phone support
- **Provide comfort measures** such as tubs, showers, and birth balls
- **Be patient with labor progress** if mother and baby are healthy[8]

EARLY POSTPARTUM AND NEWBORN PERIOD: Beneficial Hormonal Action

Hormones ↓ bleeding; help mother and baby feel calm, connected, and ready to breastfeed; help establish breastfeeding and healthy maternal-infant attachment[10]
- Skin-to-skin contact ↑ oxytocin, ↓ epinephrine-norepinephrine and stress in mother and newborn
- Newborn alertness after catecholamine surge optimizes breastfeeding initiation
- Ongoing mother-baby contact ↑ oxytocin, ↑ prolactin; facilitates breastfeeding; may ↑ prolactin receptor formation for long-term breastfeeding success

WHAT WILL HELP WOMEN STAY ON THE PATHWAY?

- **Keep mother and baby together and skin-to-skin** after birth[11]
- **Support breastfeeding soon after birth** and feeding on cue thereafter[14]
- **Keep mother and baby together until discharge** and encourage this in the days that follow

WHAT CAN PULL WOMEN AWAY FROM THE PATHWAY?

- **Separating mother and baby** may ↑ newborn stress, ↓ breastfeeding, ↓ maternal adaptations, and ↓ attachment[12,13]
- **Delaying breastfeeding** initiation may ↓ establishment of breastfeeding
- **Separating mother and baby** via nursery care of healthy newborns may adversely impact attachment and adjustment processes[12]

Benefits and risks need to be assessed for each mother and newborn individually.

Find the full, extensively documented report used to develop these recommendations and related resources for clinicians, childbearing women and others at

ChildbirthConnection.org/HormonalPhysiology

These recommendations are based on the research summarized in *Hormonal Physiology of Childbearing: Evidence and Implications for Women, Babies, and Maternity Care* by Sarah J. Buckley.

This information is not intended to be a substitute for the professional guidance of qualified health care providers.

Selected References

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