

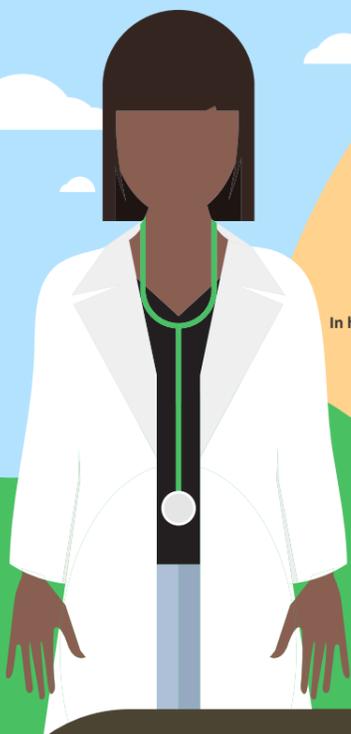
PATHWAY TO A HEALTHY BIRTH

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

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?

WHAT CAN PULL WOMEN AWAY FROM THE PATHWAY?

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WHAT CAN PULL WOMEN AWAY FROM 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 support²



- ✗ Having high stress levels in pregnancy may ↑ poor birth outcomes¹
- ✗ Approaching labor with fear and anxiety may ↓ labor progress
- ✗ Not having good labor support may ↓ labor progress

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



- ✗ Inducing labor³ 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 transitions⁴

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 sensitivity⁵

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WHAT WILL HELP WOMEN STAY ON THE PATHWAY?

- ✓ Ensure a calm, relaxed environment, and provide doula support²
- ✓ Provide comfort measures
- ✓ Be patient and use practices that help women have a vaginal birth⁶



- ✗ Experiencing excessive stress and pain may ↓ labor progress
- ✗ Using epidural analgesia may ↓ labor progress and inhibit pushing⁷
- ✗ Missing late-labor fetal catecholamine surge due to cesarean section may compromise fetal-to-newborn transition⁴

- ✗ Moving to hospital in early labor may ↓ labor progress⁶
- ✗ Using epidural analgesia may ↓ labor progress⁷
- ✗ Exposing oxytocin receptors to prolonged synthetic oxytocin may ↓ labor progress and ↑ risk of postpartum hemorrhage⁹



- ✓ 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 healthy⁸

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 attachment¹⁰
- 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?

WHAT CAN PULL WOMEN AWAY FROM THE PATHWAY?

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

- ✓ Keep mother and baby together and skin-to-skin after birth¹¹
- ✓ Support breastfeeding soon after birth and feeding on cue thereafter¹⁴
- ✓ Keep mother and baby together until discharge and encourage this in the days that follow



- ✗ 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 processes¹²



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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