**The Role of Hormones in Childbirth**

http://www.childbirthconnection.org/maternity-care/role-of-hormones/

You (and your baby) are born with the ability to start labor, labor and give birth, breastfeed and become deeply attached to each other. The flow of hormones in your body drives these well-organized, finely tuned processes.

It is important that you and your maternity care providers understand how to work with — and avoid disrupting — these processes.

While you don’t need to be taught how to give birth, it is fascinating to learn about the amazing capabilities of women and newborns. For example, a newborn who was not exposed to pain medications and is placed skin-to-skin on his or her mother right after birth can crawl to mom’s breast and begin nursing!

**The Role of Birth Hormones**

Birth hormones are chemical “messengers” that your body makes. Your baby makes birth hormones, too. These hormones work together to guide important changes in your bodies — changes that help make labor and birth go smoothly and safely for both of you.

Birth hormones help guide you and your baby in many ways, including:

* Getting your body ready to give birth
* Starting your labor contractions
* Preparing your baby for labor and life outside your body
* Telling your breasts to make milk and getting your baby ready to breastfeed

And when you and your new baby fall in love, birth hormones are part of those feelings, too!

Here we discuss four hormones that are important for reproduction: oxytocin, endorphins, adrenaline and related stress hormones, and prolactin. These hormones play a major role in regulating labor and birth. Learning about them can help you understand what will happen during labor and birth. Decisions you make about your care can support or disrupt the way hormones work, so understanding how they work and how they are affected is important for making informed decisions.

**Oxytocin**

Oxytocin is often known as the "hormone of love" because it is involved with lovemaking, fertility, contractions during labor and birth and the release of milk in breastfeeding. It helps us feel good, and it triggers nurturing feelings and behaviors.

Receptor cells that allow your body to respond to oxytocin increase gradually in pregnancy and then increase a lot during labor. Oxytocin stimulates powerful contractions that help to thin and open (dilate) the cervix, move the baby down and out of the birth canal, push out the placenta, and limit bleeding at the site of the placenta. During labor and birth, the pressure of the baby against your cervix, and then against tissues in the **[pelvic floor](http://www.childbirthconnection.org/giving-birth/pelvic-floor/%22%20%5Ct%20%22_blank)**, stimulates oxytocin and contractions. So does a breastfeeding newborn.

Low levels of oxytocin during labor and birth can cause problems by:

* Causing contractions to stop or slow, and making labor take longer.
* Resulting in excessive bleeding at the placenta site after birth.
* Leading health care providers to respond to these problems with interventions.

You can promote your body's production of oxytocin during labor and birth by:

* Staying calm, comfortable and confident.
* Avoiding disturbances, such as unwelcome people or noise and uncomfortable procedures.
* Staying upright and using gravity so your baby is pressed against your cervix and then, as the baby is born, against the tissues of your pelvic floor.
* Stimulating your nipples or clitoris before birth, and giving your baby a chance to suckle (breastfeed) shortly after birth.
* Avoiding **[epidural analgesia](http://www.childbirthconnection.org/giving-birth/labor-pain/basics/%22%20%5Ct%20%22_blank)**.

**Endorphins**

When you face stress or pain, your body produces calming and pain-relieving hormones called endorphins. You may have higher levels of endorphins near the end of pregnancy. For women who don’t use pain medication during labor, the level of endorphins continues to rise steadily and steeply through the birth of the baby. (Most studies have found a sharp drop in endorphin levels with use of **[epidural](http://www.childbirthconnection.org/giving-birth/labor-pain/basics/%22%20%5Ct%20%22_blank)** or opioid pain medication.)

High endorphin levels during labor and birth can produce an altered state of consciousness that can help you deal with the process of giving birth, even if it is long and challenging. High endorphin levels can make you feel alert, attentive and even euphoric (very happy) after birth, as you begin to get to know and care for your baby. In this early postpartum period, endorphins are believed to play a role in strengthening the mother-infant relationship. A drop in endorphin levels at this time may contribute to the "blues," or postpartum depression, that many women experience for a brief time after birth.

Low levels of endorphins can cause problems in labor and birth by:

* Causing labor to be excessively painful and difficult to tolerate.
* Leading health care providers to respond to this problem with interventions.

You can enhance your body's production of endorphins during labor and birth by:

* Staying calm, comfortable and confident.
* Avoiding disturbances, such as unwelcome people or noise and uncomfortable procedures.
* Delaying or avoiding epidural or opioids for pain relief.

**Adrenaline**

Adrenaline is the "fight or flight" hormone that humans produce to help ensure survival. Women who feel threatened during labor (for example, by fear or severe pain) may produce high levels of adrenaline. Adrenaline can slow labor or stop it altogether. Earlier in human evolution, this disruption helped birthing women move to a place of greater safety.

Too much adrenaline can cause problems in labor and birth by:

* Causing distress to the baby before birth.
* Causing contractions to stop, slow or have an erratic pattern, and lengthening labor.
* Creating a sense of panic and increasing pain in the mother.
* Leading health care providers to respond to these problems with **[cesarean](http://www.childbirthconnection.org/giving-birth/c-section/%22%20%5Ct%20%22_blank)** surgery and other interventions.

You can keep adrenaline down during labor and birth by:

* Staying calm, comfortable and relaxed.
* Being informed and prepared.
* Having trust and confidence in your body and your capabilities as a woman.
* Having trust and confidence in your **[care providers](http://www.childbirthconnection.org/healthy-pregnancy/choosing-a-care-provider/%22%20%5Ct%20%22_blank)** and **[birth setting](http://www.childbirthconnection.org/healthy-pregnancy/choosing-a-place-of-birth/%22%20%5Ct%20%22_blank)**.
* Being in a calm, peaceful and private environment and avoiding conflict.
* Being with people who can provide comfort measures, good information, positive words and other support.
* Avoiding intrusive, painful, disruptive procedures.

**Prolactin**

Prolactin is known as the “mothering” hormone. The role of prolactin around the time of birth has been less researched than the hormones described above. It increases during pregnancy and peaks when labor starts on its own. As has been shown in other mammals, continued prolactin production during and after labor appears to be readying a woman’s body for breastfeeding. It may also play a role in moving labor along and helping the newborn adjust to life outside the womb. Prolactin is central to breast milk production. High levels of prolactin with early breastfeeding may foster women’s caretaking behaviors and adjustment to being a mother. This hormone may also support the infant’s healthy development.

Low levels of prolactin may cause problems through:

* Poorer transition of the baby at the time of birth.
* Poorer growth and development of the baby.
* Poorer adjustment of a woman to motherhood.

You can likely promote your body’s production of prolactin by:

* Waiting for labor to start on its own.
* Minimizing stress during labor and after birth.
* Keeping woman and baby together after birth.
* Breastfeeding early and thereafter on cue from the baby.

**Maximizing the Role of Birth Hormones**

As you can probably tell from the information above, some features of typical hospital childbirth settings, like noise or medical interventions, can interfere with your body’s natural processes. To avoid this and maximize your body’s ability to follow its natural processes, it’s a good idea to seek out a birth setting that supports this. Out-of-hospital **[birth settings](http://www.childbirthconnection.org/healthy-pregnancy/choosing-a-place-of-birth/%22%20%5Ct%20%22_blank)** and one-on-one **[continuous labor support](http://www.childbirthconnection.org/giving-birth/labor-support/%22%20%5Ct%20%22_blank)**, such as doula care, can help create conditions that enhance your body’s natural production of helpful hormones and keep disturbing hormones in check.