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# Understanding & Navigating the Maternity Care System



## Hormones Driving Labor and Birth

### Do I need to learn how to give birth?

### What hormones affect the process of labor and birth?

### What is the role of oxytocin during labor and birth?

### What is the role of endorphins during labor and birth?

### What is the role of adrenaline during labor and birth?

### What steps can I take to help ensure that these hormones work well?

### Do I need to learn how to give birth?

You and your fetus/newborn have innate abilities to start labor, labor and give birth, breastfeed, and become deeply attached to one another. The ebbing and flowing of hormones drives these well organized, finely tuned processes. It is important that you and your caregivers understand how to work with — and avoid disrupting — this inborn knowledge and drive for birth, connection, and optimal nutrition. **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 her breast, self-attach, and begin nursing.**

### What hormones affect the process of labor and birth?

It can be especially helpful to know about three of the **main hormones involved with reproduction: oxytocin, endorphin, and adrenaline. These hormones play a major role in regulating the process of labor and birth, and learning about them can help you understand what will happen during labor and birth.** Childbearing women and their caregivers can take actions to support or disrupt their effects, so, understanding how they work and how they are affected is important for making informed decisions.

This page discusses how these hormones work around the time of birth, problems that can result from low levels of these hormones, and ways to help ensure that the hormones work well at this time.

### What is the role of oxytocin during labor and birth?

**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 sharply during labor. Oxytocin stimulates powerful contractions, which help to thin and open (dilate) the cervix, move the baby down and out of the birth canal, expel the placenta, and limit bleeding at the site of the placenta. During labor and birth, the pressure of the baby against the cervix, and then against tissues in the pelvic floor, stimulates oxytocin and contractions. So does a suckling newborn.

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

- causing contractions to stop or slow, and lengthening labor
- resulting in excessive bleeding at the placenta site after birth
- leading providers to respond to these problems with interventions.

### What is the role of endorphins during labor and birth?

**In response to stress and pain, your body produces calming and pain-relieving hormones known as endorphins.** The level of this natural opiate substance may rise toward the end of pregnancy. In unmedicated labors, it 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 or opioid pain medication.) **High endorphin levels during labor and birth can produce an altered state of consciousness that can help you flow with the process, even if it is long and challenging. Despite the hard work of labor and birth, high endorphin levels can make you feel alert, attentive, and even euphoric 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" that many women experience 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 providers to respond to this problem with interventions.

### What is the role of adrenaline during labor and birth?

**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:

News and Features



Childbirth Connection works to ensure that all women and babies get the best possible maternity care. We have the collective vision and we know how to get there, but we can't do it alone. **Join the transformation** today.



The **Transforming Maternity Care** website focuses on maternity care system improvements designed to engage diverse stakeholders in quality improvement efforts. The site offers full access to the landmark reports **2020 Vision** and **Blueprint for Action**, features a **Blog**, and other resources such as an **Action Center**, a database of quality improvement projects, an interactive **data center**, and many more tools for advocates and stakeholders.

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**Help Transform Maternity Care!**

**YES! I want to donate** [click here](#) ▶

Please join our efforts to make quality maternity care a top national priority. Your support will help make the transformation possible.

**Updated Childbirth Connection Resources**

National cesarean section trend chart updated with provisional 2010 data shows a 0.1% decrease - the first dip in over a decade. A separate table provides primary cesarean and VBAC rates through 2009. Charts comparing average cesarean and vaginal birth payments in the US and other countries show that US payments remain well above all others. In the US, charges vary significantly by state, as seen in our state charges charts, and a new chart series comparing charges across the states.

[See the latest U.S. c-section and VBAC rates \(PDF\)](#) ▶

[See 2011 international payment](#)

- causing distress to the unborn baby
- 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 providers to respond to these problems with cesareans and other interventions.

### What steps can I take to help ensure that these hormones work well?

#### 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 to apply your baby against your cervix and then, as the baby is born, against the tissues of your pelvic floor
- engaging in nipple or clitoral stimulation activities before birth and giving your baby a chance to suckle shortly after birth
- avoiding epidural analgesia.

#### 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 as a pain relief method.

#### 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 birthing woman
- having trust and confidence in your caregivers and birth setting
- 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.

These lists clarify that many features of typical hospital childbirth settings can interfere with effective action of these basic hormones. **It would be wise to consider seeking more favorable settings or taking special precautions in these settings to protect and support "physiologic" labor, birth, attachment, and breastfeeding drawing on your and your baby's capabilities.** Out-of-hospital birth settings and one-to-one continuous labor support, such as doula care, can help create conditions that enhance your body's natural production of helpful hormones and keep disturbing hormones in check.

[Next >](#)  
[Cascade of Intervention](#)

Most recent page update: 4/11/2011

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Childbirth Connection is a national not-for-profit organization founded in 1918 as Maternity Center Association. Our mission is to improve the quality of maternity care through research, education, advocacy and policy. Childbirth Connection promotes safe, effective and satisfying evidence-based maternity care and is a voice for the needs and interests of childbearing families.

[comparison charts \(PDF\)](#) ▶  
[See variation in state charges](#) ▶

### Our updated site can help with choosing VBAC or repeat c-section

One in seven pregnant women have previously given birth by cesarean. These women face an important choice - whether to plan a vaginal birth or a repeat c-section for their current pregnancy. Our Pregnancy Topic [VBAC or Repeat C-Section](#) has been updated to incorporate the most recent government-sponsored research and national consensus recommendations released in 2010. The topic reviews the short- and longer-term benefits and harms of both planned vaginal birth after cesarean (VBAC) and repeat c-section and gives women the tips, tools, and resources for making a choice and having a safe, healthy, and satisfying experience. [Go to VBAC or Repeat C-Section](#) ▶  
[Read "Reasonable Choices for Bringing Back VBAC" on the TMC Blog](#) ▶

### Access Childbirth Connection reports, fact sheets, and publications

Over the years, Childbirth Connection has released many important resources for women and consumers as well as healthcare professionals. Now you can find a comprehensive directory of our publications, systematic reviews, fact sheets, handouts and other resources in one convenient location. Materials include publications related to the [Transforming Maternity Care Project](#), [Listening to Mothers](#) surveys and reports, maternity care fact sheets and information and decision tools for planning maternity care, and more. [Go to publications page](#) ▶

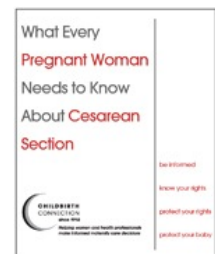
### Nine percent of women may suffer post-traumatic stress disorder after childbirth

Using data from Childbirth Connection's two-stage national *Listening to Mothers II* survey, researchers have documented a very high rate of childbirth-related post-traumatic stress disorder (PTSD) and related among new mothers. The study describes multiple factors associated with women's post-traumatic stress levels.

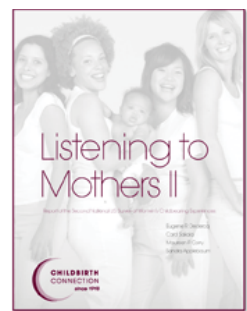
[Read the study abstract](#) ▶  
[Download the Listening to Mothers II Survey Report](#) ▶  
[Download New Mothers Speak Out](#), a report from the postpartum follow-up survey to *Listening to Mothers II* ▶

### Popular Publications

*What Every Pregnant Woman Should Know About Cesarean Section (free PDF)*



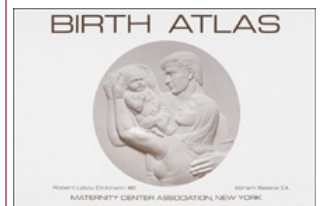
*Listening to Mothers II*



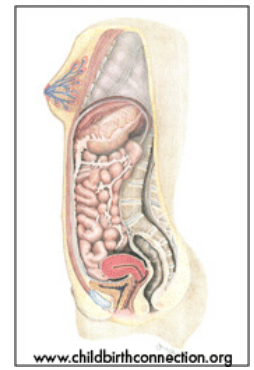
*The Rights of Childbearing Women Brochure*



*The Birth Atlas*



*The Growing Uterus Charts*



*view charts with explanation here*

#### New Content!



#### **Journey to Parenthood Full Book Available Online!**

A family-friendly book covering the trimesters, pregnancy resources, and the latest information on baby's first year of development. Available online (free) and for purchase in the Bookstore.

[Browse through Journey to Parenthood ▶](#)

[Buy this book and learn more ▶](#)

#### Popular Pages

[▶ Cesarean section resources](#)

[▶ Recommended pregnancy books](#)

[▶ VBAC or repeat c-section?](#)

*Listening to Mothers*

*"I just wish I had more support and kindness from the nurses with trying to breastfeed. I kept it up but I can see how many women stop very soon after giving birth."*

-Listening to Mothers® survey participant

[Click here for information about labor support options.](#) ►

*Rights of Childbearing Women*

Every woman has the right to choose her birth setting from the full range of safe options available in her community, on the basis of complete, objective information about benefits, risks and costs of these options.

[More Rights of Childbearing Women](#) ►