

Labor and Birth

by Sophia



WHAT'S COVERED

In this lesson, you will learn about the processes and hormones involved in labor and birth. Specifically, this lesson will cover:

1. Hormones That Trigger Birth

The birth will occur approximately 40 weeks after the first day of the mother's last menstruation. The gestational period of humans is about 40 weeks, and hormones are heavily involved in triggering birth once the time arrives.

Hormones are secreted by the fetus that will trigger the placenta to produce more **estrogen**. Estrogen is one hormone involved in triggering birth. The fetus is triggering the placenta to secrete more estrogen, and then the increase in estrogen will trigger the release of **oxytocin** and **prostaglandins**, which will then stimulate the uterus to contract.



TERMS TO KNOW

Estrogen

The primary female sex hormone, estrogen promotes the development and maintenance of the female secondary sex characteristics; estrogen also plays a major role in the female, making adjustments to pregnancy.

Oxytocin

A hormone secreted from the posterior pituitary gland (neurohypophysis) via a positive feedback mechanism once the child begins to put pressure on the cervix of the uterus.

Prostaglandins

A group of lipid-based chemical messengers in the body, prostaglandins during labor promote uterine contractions.

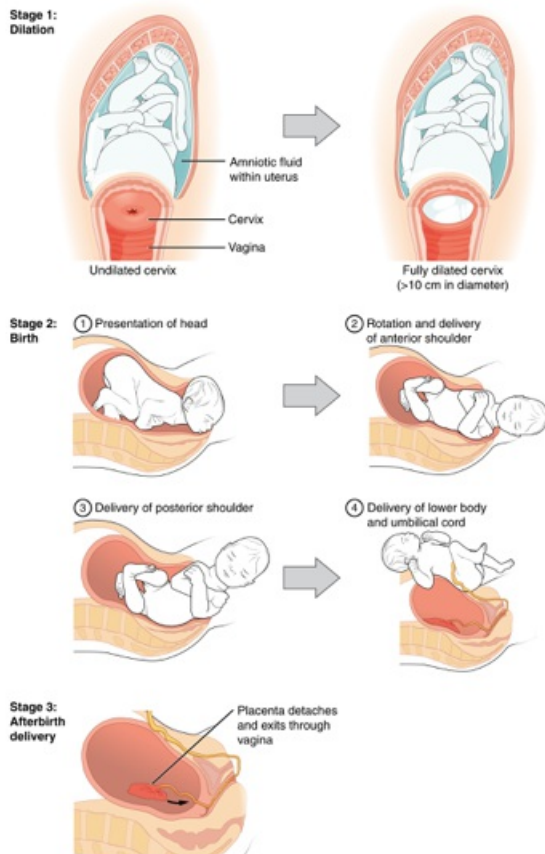
2. Three Stages of Labor

There are three stages of labor.

- The first stage of labor occurs when the contractions of the uterus push the fetus against the cervix. Also,

during this stage of labor, the cervix will dilate, and the amniotic sac will rupture, which is often referred to as the water breaking.

- The second stage of labor is the stage where the physical process of birth occurs. During this stage, the cervix will continue to dilate until it reaches ten centimeters. Once it reaches ten centimeters, the baby is then ready to be born. Contractions and the pushing of the mother will move the baby through the vaginal canal, usually head first. Occasionally a baby will come out backward, feet first, which is called **breech**. If the baby is positioned to come out feet first, the doctor must turn the baby around to avoid any complications during birth.
- The third stage of labor comes after the birth of the baby. At this point, contractions of the uterus will force the placenta, fluid, and blood out; all of this is known as **afterbirth**. At this point, the umbilical cord can also be cut, and carbon dioxide will start to build up in the baby's blood.



While in the uterus, the placenta did the job of removing carbon dioxide from the baby's blood and replacing it with oxygen. However, since the placenta and the umbilical cord are no longer attached to the baby, carbon dioxide will build up in its blood. This will be the stimulus that forces the baby to take its first breath. Temporary bypass vessels in the heart will close because they're no longer needed, along with the fetal heart opening. At this point, the baby can now survive independently on its own from a breathing perspective because the gas exchange is taking place in its lungs.



TERMS TO KNOW

Breech

When the fetus positions itself feet first instead of head first during labor.

Afterbirth

Occurs after the baby is expelled from the uterus, afterbirth is when the placenta separates from the uterine wall and is expelled from the mother.

3. Lactation

Lactation is controlled by hormones as well. After the baby is born, the mother will begin to lactate because of a list of hormones: Prolactin, oxytocin, estrogen, and progesterone. Lactation is milk production by the mammary glands in the mother's breast tissue.

Prolactin will stimulate milk production, and oxytocin causes breast tissue to contract, pushing the milk into the ducts. Estrogen and progesterone are involved with the growth of the mammary glands and ducts.



TERM TO KNOW

Lactation

The secretion of milk from the mammary glands, hormonally stimulated by oxytocin.



SUMMARY

This lesson has been an overview of the processes that occur during labor, birth, and the **hormones** that are involved with them. Specifically, this lesson covered the hormones that trigger birth, the **three stages of labor**, and the process of **lactation**. Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND



ATTRIBUTIONS

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