

CARRY OVER COURSE

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GESTATION AND LACTATION PERIOD IN A NORMAL FEMALE

LACTATION IN A NORMAL FEMALE

High levels of Estrogen and Progesterone during the Later Months of Pregnancy Promote the Final Developmental Changes in the Breasts that Prepare them for Lactation.

These hormones do not stimulate milk production by the alveolar cells.

Milk formation is achieved via the effects of prolactin; secreted in rising concentrations throughout pregnancy.

The stimulatory effect of prolactin is blocked by the high concentrations of estrogen and progesterone secreted by the placenta, so no milk is formed until after delivery of the baby. When the levels of estrogen and progesterone fall, the stimulatory effect of prolactin causes the cells of the alveoli to synthesize milk, which accumulates in the alveoli and ducts of the breast(s).

Mechanical Stimulation Associated with Suckling Elicits a Reflex to the Hypothalamus, Releasing Oxytocin from the Post. Pit. Gland

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Oxytocin travels to the breast in the blood and causes contraction of the myoepithelial cells that surround the ducts of the breast.

The contraction increases the pressure of the milk filling the ducts, causing milk to flow from the nipple to the baby.

Milk is not usually ejected from the breast until the baby suckles the nipple.

After delivery, prolactin levels tend to fall toward nonpregnant levels.

Stimulation of the nipples associated with suckling, increases the release of prolactin, which in turn stimulates milk production.

The greater the duration of suckling, the greater is the amount of milk produced by the breast.

This feedback control system regulated by the baby's desire for milk and duration of suckling provides a well regulated supply of milk for the baby from the time it is born until as long as 1 year or more after birth, when its requirements for milk have increased greatly.

Human milk is composed of 88.5 per cent water, 3.3 per cent fat, 6.8 per cent lactose, 0.9 per cent casein, and other proteins and minerals.

When a woman is lactating heavily to supply the needs of a rapidly growing, large baby, she may secrete 2 to 3 grams of calcium phosphate into the milk per day.

This can lead to depletion of calcium from the bones if the mother does not carefully choose a diet that is rich in calcium.

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GESTATION PERIOD IN A NORMAL FEMALE

At the moment of conception, a single sperm with 23 chromosomes (carrying genetic information from the father) penetrates/fertilizes a single egg with 23 chromosomes (carrying genetic information from the mother). The resulting cell, a zygote, now has 46 chromosomes. The cell begins dividing and is also called a blastocyst. From week 2-8, it is called an embryo.

The fertilized egg implants in the uterus. Progesterone production increases to signal a pregnancy; it can be detected in urine and blood.

. The embryo is suspended in an amniotic sac surrounded by fluid during the 280 day gestation period. The umbilical cord attached at the navel connects it to the placenta, where it gets nutrients and oxygen. During the 1st trimester, all parts of the embryo are formed.

During the second trimester all parts start to function; during the last trimester the embryo is now called a fetus and the main task is growth.

Labor, characterized by muscle contractions, dilation (to 10 cm) and effacement (thinning) of the cervix, and expulsion of the mucous plug that formed in the cervix, signals the onset of parturition... the childbirth process. The cephalic, or head-first delivery, is the most common. Breech is a backward presentation; Caesarian is delivery through an incision in the abdomen. The umbilical cord is cut and clamped, and placenta (afterbirth) is delivered following birth of the baby.

The newborn may be covered with traces of vernix caseosa (cheesy coating) or lanugo (downy hair) that protected the skin before birth. The health of the baby is immediately evaluated on the APGAR scale. Color, heartbeat, reflexes, muscle tone, and breathing are scored on a scale of 0-

10.

Pregnancy can be complicated by certain conditions:

- 1) Placenta previa is the development of the placenta over the opening of the cervix
- 2) Preeclampsia is a pregnancy- induced hypertension (high blood pressure)
- 3) Spontaneous abortion or miscarriage is the loss of a fetus during the first 20 weeks, often due to abnormalities, trauma, or lifestyle choices.