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1 (I).CYCLIC CHANGES OF THE BREAST

Each month, women go through changes in the hormones that make up the normal menstrual cycle. The hormone estrogen is produced by the ovaries in the first half of the menstrual cycle. It stimulates the growth of milk ducts in the breasts. The increasing level of estrogen leads to ovulation halfway through the cycle. Next, the hormone progesterone takes over in the second half of the cycle. It stimulates the formation of the milk glands. These hormones are believed to be responsible for the cyclical changes that many women feel in their breasts just before menstruation. These include swelling, pain, and soreness.

During menstruation, many women also have changes in breast texture. Their breasts may feel very lumpy. This is because the glands in the breast are enlarging to get ready for a possible pregnancy. If pregnancy does not happen, the breasts go back to normal size. Once menstruation starts, the cycle begins again.

1 (ii). CYCLIC CHANGES OF THE CERVIX.

Several hundred glands in the endocervix produce 20–60 mg of cervical mucus a day, increasing to 600 mg around the time of ovulation. It is viscous because it contains large proteins known as mucins. The viscosity and water content varies during the menstrual cycle; mucus is composed of around 93% water, reaching 98% at midcycle. These changes allow it to function either as a barrier or a transport medium to spermatozoa. It contains electrolytes such as calcium, sodium, and potassium; organic components such as glucose, amino acids, and soluble proteins; trace elements including zinc, copper, iron, manganese, and selenium; free fatty acids; enzymes such as amylase; and prostaglandins. Its

consistency is determined by the influence of the hormones estrogen and progesterone. At midcycle around the ovulation—a period of high estrogen levels—the mucus is thin and serous to allow sperm to enter the uterus and is more alkaline and hence more hospitable to sperm. It is also higher in electrolytes, which results in the "ferning" pattern that can be observed in drying mucus under low magnification; as the mucus dries, the salts crystallize, resembling the leaves of a fern. The mucus has a stretchy character described as Spinnbarkeit most prominent around the time of ovulation.

At other times in the cycle, the mucus is thick and more acidic due to the effects of progesterone. This "infertile" mucus acts as a barrier to keep sperm from entering the uterus. Women taking an oral contraceptive pill also have thick mucus from the effects of progesterone. Thick mucus also prevents pathogens from interfering with a nascent pregnancy.

A cervical mucus plug, called the operculum, forms inside the cervical canal during

pregnancy. This provides a protective seal for the uterus against the entry of pathogens and against leakage of uterine fluids. The mucus plug is also known to have antibacterial properties. This plug is released as the cervix , either during the first stage of childbirth or shortly before. It is visible as a blood-tinged mucous discharge.

2. MENSTRUAL

The menstrual cycle is the monthly series of changes a woman's body goes through in a preparation for the possibility of pregnancy. Each month, one of the ovaries releases an egg- a process called ovulation. At the same time hormonal changes prepare the uterus for pregnancy. If ovulation takes place and the egg isn't fertilized, the lining of the uterus sheds through the vagina. This is a menstrual period.

The menstrual cycle, which is counted from the first day of one period to the first day of the next, isn't the same for every woman. Men's the flow may occur ever 21 to 35 days and last 2 to 7 days. For the first w years after mensuration begins, long cycles are common. However menstrual cycles tend to shorten and become more regular as you age.

Menstrual cycle irregularities can have many different causes including:

- i. Pregnancy
- ii. Eating disorders, extreme weight loss or excessive exercise
- iii. Polycystic ovary syndrome (PCOS)
- iv. Premature ovarian failure
- v. Pelvic inflammatory disease (PID)
- vi. Uterine fibroids.