

NAME: AKINBILE GRACE OLUWASEUN

MATRIC NUMBER: 18/MHS02/029

DEPARTMENT: NURSING, 200LVL

COURSE: PHS 212 (PHYSIOLOGY)

ANSWERS

1. CYCLIC CHANGES IN CERVIX

The cervix is the lower part of the uterus in the human female reproductive system. The cervix is usually 2-3 cm long and roughly cylindrical in shape, which changes during pregnancy.

The cervical canal is a passage through which sperm must travel to fertilize an egg cell after sexual intercourse. Cervical mucus is used in several methods of fertility awareness, due to its change in consistency throughout the menstrual period. During vaginal childbirth, the cervix must flatten and dilate to allow the foetus to progress along the birth canal.

- i. The mucosa of uterine cervix does not undergo cyclic desquamation as the body of uterus.
- ii. Regular changes in cervical mucus under influence:
 - Oestrogens (ovulation) mucus thinner and more alkaline- promotion of survival and transport of sperm.
 - Progesterone (after ovulation, during pregnancy) mucus thick, tenacious, cellular.

2. CYCLIC CHANGES IN 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.

3. HORMONAL REGULATION OF THE MENSTRUAL CYCLE

Menstruation is the shedding of the lining of the uterus (endometrium) accompanied by bleeding. The menstrual cycle begins with the first day of bleeding, which is counted as day 1. The cycle ends just before the next menstrual period. Menstrual cycle normally range from about 25-30 days only 10 to 15% of women have cycles that are exactly 28 days. Also, in at least 20% of women, Cycles are irregular (i.e. they are longer or shorter than the normal range).

The menstrual cycle is regulated by hormones. Luteinizing hormone and follicle-stimulating hormone, which are produced by the pituitary gland, promote ovulation and stimulate the ovaries to produce estrogen and progesterone. Estrogen and progesterone stimulate the uterus and breasts to prepare for possible fertilization.

The menstrual cycle has three phases:

- Follicular (before release of eggs)
- Ovulatory (egg release)
- Luteal (after egg release)

The menstrual cycle begins with menstrual bleeding (menstruation), which marks the first day of the follicular phase.

When the **follicular phase** begins, levels of estrogen and progesterone are low. As a result, the top layers of the thickened lining of the uterus (endometrium) break down and are shed, and menstrual bleeding occurs. About this time, the follicle-stimulating hormone level increases slightly, stimulating the development of several follicles in the ovaries. Each follicle contains an egg. Later in this phase, as the follicle-stimulating hormone level decreases, only one follicle continues to develop. This follicle produces estrogen.

The **ovulatory phase** begins with a surge in luteinizing hormone and follicle-stimulating hormone levels. Luteinizing hormone stimulates egg release (ovulation), which usually occurs 16 to 32 hours after the surge begins. The estrogen level decreases during the surge, and the progesterone level starts to increase.

During the **luteal phase**, luteinizing hormone and follicle-stimulating hormone levels decrease. The ruptured follicle closes after releasing the egg and forms a corpus luteum, which produces progesterone. During most of this phase, the estrogen level is high. Progesterone and estrogen cause the lining of the uterus to thicken more, to prepare for possible fertilization.

If the egg is not fertilized, the corpus luteum degenerates and no longer produces progesterone, the estrogen level decreases, the top layers of the lining break down and are shed, and menstrual bleeding occurs (the start of a new menstrual cycle). If the egg is fertilized, the corpus luteum continues to function during early pregnancy. It helps maintain the pregnancy.