PHS 212

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Pharmacology

Cervix: The cervix or cervix uteri (Latin, 'neck of the uterus') is the lower part of the uterus in the human female reproductive system. The cervix is usually 2 to 3 cm long (~1 inch) and roughly cylindrical in shape, which changes during pregnancy. The narrow, central cervical canal runs along its entire length, connecting the uterine cavity and the lumen of the vagina. The opening into the uterus is called the internal os, and the opening into the vagina is called the external os. The lower part of the cervix, known as the vaginal portion of the cervix.

The cervix produces cervical mucus. Cervical mucus changes in consistency over the course of your menstrual cycle. At the point of greatest fertility, the cervix produces a good deal of clear mucus which helps to promote pregnancy. During pregnancy, the mucus produced by the cervix thickens to create a cervical "plug." This shields the growing embryo from infection. The cervical plug thins and is expelled when birth is imminent.

During menstruation, the cervix opens a small amount to permit passage of menstrual flow. During pregnancy, the cervical os closes to help keep the fetus in the uterus until birth. Another important function of the cervix occurs during labor when the cervix dilates (widens), to allow the passage of the fetus from the uterus to the vagina.

Vagina:

In mammals, the vagina is the elastic, muscular part of the female genital tract. In humans, it extends from the vulva to the cervix. The outer vaginal opening is normally partly covered by a membrane called the hymen. At the deep end, the cervix (neck of the uterus) bulges into the vagina. The vagina allows for sexual intercourse and birth. It also channels menstrual flow (menses), which occurs in humans and closely related primates as part of the monthly menstrual cycle.

The vagina also changes in response to hormonal fluctuations of the menstrual cycle. Around mid-cycle, when estrogen is highest, vaginal tissue becomes thicker and fuller.

The cervix, at the top of the vagina, moves and changes shape throughout the cycle. Before and after the fertile window, the cervix is low and can be felt in the vagina, with a firm texture, and the hole in the center of the cervix is closed. During the fertile window, the hole in the cervix opens to facilitate the entrance of sperm into the uterus,the cervix rises higher in the vagina, and is softer when touched.

2.) The menstrual cycle is the monthly hormonal cycle a female's body goes through to prepare for pregnancy. Your menstrual cycle is counted from the first day of your period up to the first day of your next period.

The menstrual cycle is controlled by a complex orchestra of hormones, produced by two structures in the brain, the pituitary gland and the hypothalamus along with the ovaries.

The menstrual cycle includes several phases. The exact timing of the phases of the cycle is a little bit different for every woman and can change over time.

Cycle days (approximate)

Events of the menstrual cycle

Days 1-5

The first day of menstrual bleeding is considered Day 1 of the cycle.

Your period can last anywhere from 3 to 8 days, but 5 days is average.

Bleeding is usually heaviest on the first 2 days.

Days 6-14

Once the bleeding stops, the uterine lining (also called the endometrium) begins to prepare for the possibility of a pregnancy.

The uterine lining becomes thicker and enriched in blood and nutrients.

Day 14-25

Somewhere around day 14, an egg is released from one of the ovaries and begins its journey down the fallopian tubes to the uterus.

If sperm are present in the fallopian tube at this time, fertilization can occur.

In this case the fertilized egg will travel to the uterus and attempt to implant in the uterine wall.

Days 25-28

If the egg was not fertilized or implantation does not occur, hormonal changes signal the uterus to prepare to shed its lining, and the egg breaks down and is shed along with lining.

The cycle begins again on Day 1 menstrual bleeding.

The menstrual cycle has three phases:

1. Follicular Phase (Days 1-14)

This phase of the menstrual cycle occurs from approximately day 1-14. Day 1 is the first day of bright red bleeding, and the end of this phase is marked by ovulation. While menstrual bleeding does happen in the early part of this phase, the ovaries are simultaneously preparing to ovulate again. The pituitary gland (located at the base of the brain) releases a hormone called FSH – follicle stimulating hormone. This hormone causes several ‘follicles’ to rise on the surface of the ovary. These fluid filled “bumps” each contain an egg. Eventually, one of these follicle becomes dominant and within it develops a single mature egg; the other follicles shrink back.

2. Ovulatory Phase (Day 14)

The release of the mature egg happens on about day 14 as a result of a surge in LH and FSH over the previous day. After release, the egg enters the fallopian tube where fertilization may take place, if sperm are present. If the egg is not fertilized, it disintegrates after about 24 hours. Once the egg is released, the follicle seals over and this is called the corpus luteum.

3. Luteal Phase (Days 14-28)

After the release of the egg, levels of FSH and LH decrease. The corpus luteum produces progesterone.  If fertilization has occurred, the corpus luteum continues to produce progesterone which prevents the endometrial lining from being shed. If fertilization has not occurred, the corpus luteum disintegrates, which causes progesterone levels to drop and signals the endometrial lining to begin shedding.

There is a range of normal bleeding – some women have short, light periods and others have longer, heavy periods. Your period may also change over time.