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NURSING

VAGINA

The vagina epithelium is the inner lining of the vagina consisting of multiple layers of (squamous) cells. The basal membrane provides the support for the first layer of the epithelium. The basal layer and the superficial layer are the outermost layers of the epithelium. The large surface area allows the Trans epithelial absorption of some medications via the vaginal route.

In the course of the reproductive cycle, the vaginal epithelium is subject to normal cyclic changes that are influenced by estrogen. With increasing circulating levels of hormone, there is proliferation of epithelial cells along with an increase in the number of cell layers. During the follicular stage of the estrous cycle, the structure of the vaginal epithelium varies the number of cell layers vary during the days of estrous cycle.

Day 10-22 layers

Day 12 to 14-46 layers

Day 19-32 layers

Day 24-24 layers

The glycogen levels in the cell is at its highest immediately before ovulation.

BREAST

Breast development is a vital part of a woman’s reproduction. Breast development happens in certain stages during a woman’s life. First before birth, again at puberty, and later during the child bearing years. Changes also happen to the breast during the menstrual cycle and when a woman reaches menopause.

Breast development begins to form while the unborn baby is still growing in the mothers uterus. This starts with a thickening in the chest area called the mammary ridge or milk line. By the time a baby girl is born, nipples and the beginnings of milk duct system have formed. Breast changes continue to happen over a woman’s life. The first things to develop are lobes or small substances of breast tissue. Mammary glands are influenced by hormones activated by puberty shrinkage (involution) of the milk ducts is the final major change that happens in the breast tissue. The mammary glands slowly start to shrink. This often starts around age 35. Female breast developmental stages;

Stage 1(preteen) - only the top of the nipple is raised.

Stage 2- Buds appear, and breast and nipple are raised. The dark area of the skin around the nipple (the areola) gets larger.

Stage 3- Breast is slightly larger, with glandular breast tissue present.

Stage 4- The areola and nipple become raised and form a second mound above the rest of the breast.

Stage 5(Mature adult breast) - The breast becomes rounded and only the nipple is raised.

MENSTRUAL CYCLE

The menstrual cycle is the regular natural change that occurs in the female reproductive system (specifically the uterus and ovaries) that makes pregnancy possible. The cycle is required for the production of oocytes, and for the preparation of the uterus for pregnancy. The menstrual cycle occurs due to the rise and fall of estrogen. This cycle results in the thickening of the lining of the uterus, and the growth of an egg, (which is required for pregnancy). The egg is released from an ovary around day fourteen in the cycle; the thickened lining of the uterus provides nutrients to an embryo after implantation. If pregnancy does not occur, the lining is released in what is known as menstruation.

Up to 80% of women report having some symptoms during the one to two weeks prior to menstruation. Common symptoms include acne, tender breasts, bloating, feeling tired, irritability and mood changes. These symptoms interfere with normal life and therefore qualify as premenstrual syndrome in 20 to 30% of women. In 3 to 8%, they are severe.

The first period usually begins between twelve and fifteen years of age, a point in time known as menarche. They may occasionally start as early as eight, and this onset may still be normal. The average age of the first period is generally later in the developing world and earlier in developed world. The typical length of time between the first day of one period and the first day of the next is 21 to 45 days in young women and 21 to 35 days in adults (an average of 28 days). Menstruation stops occurring after menopause which usually occurs between 45 and 55 years of age. Bleeding usually lasts around 3 to 7 days.

The menstrual cycle is governed by hormonal changes. These changes can be altered by using hormonal birth control to prevent pregnancy. Each cycle can be divided into three phases based on events in the ovary (ovarian cycle) or in the uterus (uterine cycle).The ovarian cycle consists of the follicular phase, ovulation, and luteal phase whereas the uterine cycle is divided into menstruation, proliferative phase, and secretory phase.

Stimulated by gradually increasing amounts of estrogen in the follicular phase, discharges of blood (menses) flow stop, and the lining of the uterus thickens. Follicles in the ovary begin developing under the influence of a complex interplay of hormones, and after several days one or occasionally two become dominant (non-dominant follicles shrink and die). Approximately mid-cycle, 24–36 hours after the luteinizing hormone (LH) surges, the dominant follicle releases an ovocyte, in an event called ovulation. After ovulation, the oocyte only lives for 24 hours or less without fertilization while the remains of the dominant follicle in the ovary become a corpus luteum; this body has a primary function of producing large amounts of progesterone. Under the influence of progesterone, the uterine lining changes to prepare for potential implantation of an embryo to establish a pregnancy. If implantation does not occur within approximately two weeks, the corpus luteum will involute, causing a sharp drop in levels of both progesterone and estrogen. The hormone drop causes the uterus to shed its lining in a process termed menstruation. Menstruation also occurs in closely related primates (apes and monkeys).