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ASSIGNMENT

1. (A) CYCLIC CHANGES IN THE BREAST

- What is normal breast development?

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 childbearing years. Changes also happen to the breasts during the menstrual cycle and when a woman reaches menopause.

- When does breast development begin?

Breasts begin to form while the unborn baby is still growing in the mother's 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 the milk-duct system have formed.

Breast changes continue to happen over a woman's life. The first thing to develop are lobes, or small subdivisions of breast tissue. Mammary glands develop next and consist of 15 to 24 lobes. Mammary glands are influenced by hormones activated in 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.

- What breast changes happen at puberty?

As a girl approaches her teen years, the first visible signs of breast development begin. When the ovaries start to produce and release (secrete) estrogen, fat in the connective tissue starts to collect. This causes the breasts to enlarge. The duct system also starts to grow. Often these breast changes happen at the same that pubic hair and armpit hair appear.

Once ovulation and menstruation begin, the maturing of the breasts begins with the formation of secretory glands at the end of the milk ducts. The breasts and duct system continue to grow and mature, with the development of many glands and lobules. The

rate at which breasts grow is different for each young woman.

- Female breast developmental stages ;
 - ✓ Stage 1 Preteen. Only the tip of the nipple is raised.
 - ✓ Stage 2 Buds appear, and breast and nipple are raised. The dark area of skin around the nipple (the areola) gets larger.
 - ✓ Stage 3 Breasts are 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.
- What cyclical changes happen to the breasts during the menstrual cycle?

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.

(B) CYCLIC CHANGES IN THE VAGINA

The vaginal 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. The intermediate layers lie upon the basal layer and the superficial layer is the outermost layer of the epithelium. Anatomists have described the epithelium as consisting of as many as 40 distinct layers.[citation needed] The mucus found on the epithelium is secreted by the cervix and uterus.] The rugae of the

epithelium create an involuted surface and result in a large surface area that covers 360 cm². This large surface area allows the trans-epithelial absorption of some medications via the vaginal route.

➤ Cyclic changes in the vagina

The cyclic changes in the vagina epithelium are influenced by estrogen: with increasing circulating levels of the hormone, there is proliferation of epithelial cells along with an increase in the number of cell layers. As cells proliferate and mature, they undergo partial cornification. Although hormone induced changes occur in the other tissues and organs of the female reproductive system, the vaginal epithelium is more sensitive and its structure is an indicator of estrogen levels. Some Langerhans cells and melanocytes are also present in the epithelium. The epithelium of the ectocervix is contiguous with that of the vagina, possessing the same properties and function.

The vaginal epithelium is divided into layers of cells, including the basal cells, the parabasal cells, the superficial squamous flat cells, and the intermediate cells. The superficial cells exfoliate continuously and basal cells replace the superficial cells that die and slough off from the stratum corneum. Under the stratum corneum is the stratum granulosum and stratum spinosum. The cells of the vaginal epithelium retain a usually high level of glycogen compared to other epithelial tissue in the body. The surface patterns on the cells themselves are circular and arranged in longitudinal rows. The epithelial cells of the uterus possess some of the same characteristics of the vaginal epithelium.

➤ Cyclic variations

During the luteal and follicular phases of the estrous cycle the structure of the vaginal epithelium varies. The number of cell layers vary during the days of the estrous cycle:

Day 10 : 22 layers

Days 12-14 : 46 layers

Day 19 :32 layers

Day 24 : 24 layers

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

2. MENSTRUAL CYCLE

- What is menstruation and what is menstrual cycle?

Menstruation is bleeding from the vagina that happens about once a month, as a normal part of the menstrual cycle. It is also known as having a period.

During this cycle, your hormones make the lining of the uterus become thicker, getting ready in case of pregnancy. Hormones also cause an egg to be released from an ovary, which is known as ovulation.

If you don't become pregnant, your periods start about two weeks after you ovulate. The lining of the uterus falls away and, along with some blood, flows out through the vagina. Periods can be light or heavy, and the blood can range from bright red to dark brown. You might also notice small clots.

- When do girls start their period?

Girls have their first period during puberty. Most often that is around the age 12 or 13 years old, but girls can start menstruating as young as 9, or as late as 16. When you menstruate, your body sheds the lining of the uterus (womb). Menstrual blood flows from the uterus through the small opening in the cervix and passes out of the body through the vagina. Most menstrual periods last from 3 to 5 days.

- How long do periods last?

Menstruation affects every woman, but the experience can differ between women. When periods (menstruations) come regularly, this is called the **menstrual cycle**. Having regular menstrual cycles is a sign that important parts of your body are working normally. The menstrual cycle provides important body chemicals, called hormones, to keep you healthy. It also prepares your body for pregnancy each month.

A cycle is counted from the first day of 1 period to the first day of the next period. The average menstrual cycle is 28 days long. Cycles can range anywhere from 21 to 35 days in adults and from 21 to 45 days in young teens. The rise and fall of levels of hormones during the month control the menstrual cycle.

- What are the signs and symptoms of menstration?

Some women get symptoms leading up to and during menstruation, for example, cramps or pains low in the abdomen, bloating or swelling in the abdomen, constipation before your period, diarrhea when your period starts, acne, tiredness, and mood changes.