

# JIM UNUNUMA SUCCESS

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NURSING DEPARTMENT

## 1

### VAGINA

Studies in nonhuman primate indicate that changes in the thickness and integrity of the vaginal epithelium affect the transmission rates of HIV-1, but few studies have examined the normal variations that may occur in the vagina of normal macaques as a result of aging or changes in the menstrual cycle. This study was conducted to determine if differences occur in the thickness of the vaginal mucosa with age or menses. Vaginal mucosal thickness was compared in 46 rhesus macaques grouped as juvenile (1-3 years old), mature cycling (3-21 years old), and geriatric (>21 years old). Epithelia of mature cycling macaques were also compared at different stages of the menstrual cycle. Older females (>21 years) had the thinnest and least keratinized epithelium of all groups followed by the youngest females (<3 years). The vaginal epithelium was also thinner in cycling macaques during menses compared to the follicular stage. In addition, young, geriatric, or cycling macaques during menses had minimal keratinization. We hypothesize that normal physiologic changes in the vaginal epithelium of the women occur with age and menses, which may affect a woman's susceptibility to HIV-1 transmission and other sexually transmitted diseases. Also, age and menstrual cycle should be considered when designing vaginal transmission experiments in rhesus macaques.

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

Breast begins 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. Shrinky

(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.

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 breast to enlarge. The duct system also starts to glow. Often these breast changes happen at the same that pubic hair and armpit hair appear. Once ovulation and menstruation 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.

<b>FEMALE BREAST DEVELOPMENTAL STAGES</b>	<b>DESCRIPTION</b>
STAGE 1	Preteen. Only the tip of the nipple is raised
STAGE 2	Buds appear, and breast and nipples are raised . The dark area of skin around the nipples (the areola) gets larger.
STAGE 3	Breast 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

## 2

### **MENSTRUAL CYCLE**

#### **DAY 1 THROUGH 5**

Starts with the first day of your period. The blood and tissue lining the uterus (womb) break down and leave the body. This is your period. For many women, bleeding lasts from 4 to 8days . Hormone levels are low . Low levels of the hormone estrogen can make you feel depressed or irritable. During Days 1 through 5 of your cycle, Fluid-Filled pockets called follicles develop on the ovaries. Each follicle contains on Egg.

### **DAY 5 THROUGH 8**

Between Days 5 and 7, Just one follicle continues growing While the others stop growing and are absorbed back into the ovary. Levels of the hormone estrogen from the ovaries continue rising . By Day 8 the follicle puts out increasing levels of estrogen and grows larger. Usually by Day 8, period bleeding has stopped . Higher estrogen levels from the follicle make the lining of the uterus grow and thicken. The uterine lining is rich in blood and nutrients and will help nourish the embryo if a pregnancy happens . Estrogen helps boost endorphins, which are the feel good . brain chemicals that are also released during physical activity. You may have more energy and feel relaxed or calm.

### **DAY 14**

A few days before DAY 14 , your estrogen levels peak and cause a sharp rise in the level of luteinizing hormone (LH). LH causes the mature follicle to burst and release an egg from the ovary , called OVULATION, on DAY 14. A woman is most likely to get pregnant if she has sex on the day before ovulation ( since the sperm are already in place and ready to fertilized the egg once it is released). A man's sperm can live for three to five days in a woman's reproduction organs, and a woman's egg lives for 12 to 24 hours.

### **DAY 15 THROUGH 24**

Over the next week ( **DAYS 15 THROUGH 24**) the fallopian tubes help the newly released egg travel away from the ovary toward the uterus. The ruptured follicle on the ovary makes more of the hormone progesterone, which also helps the uterine lining thicken even more. If a sperm joins with the egg in the fallopian tube( this is called fertilization), the fertilized egg will continue down the fallopian tube and attach to the fallopian tube and attach to the lining of the uterus ( womb). Pregnancy begins once a fertilized egg attaches to the womb.

### **DAY 24 THROUGH 28**

If the egg is not fertilized , it breaks apart. Around DAY 24 , your estrogen and progesterone levels drop if you are not pregnant. This rapid changes in levels of estrogen and progesterone can cause your moods to change . Some women are more sensitive to these changing hormone levels than others. Some women feel irritable, anxious, or depressed during the premenstrual week but others do not.



