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 **Renal physiology (PHS 212)**

 **Pharmacology**

**How your cervix changes throughout the month**

**When you start your period (Day One of your cycle), there’s no need to feel your cervix for changes, as you’re clearly menstruating.**

**Once your bleeding stops, you may have a few days (possibly up to a week) as a ‘pre-fertile’ phase. This is the time from when the bleeding finishes and when the fertile phase begins.**

**During the pre-fertile phase, the lining of the uterus starts to thicken, regenerating after the period has finished. At the same time, a group of eggs in the ovaries start to ripen.**

**Feeling your cervix at this time, it should feel relatively low, firm and only slightly moist (or even dryish) and tightly closed when compared to other times in the menstrual cycle.**

**Fertile ground**

**After your pre-fertile phase, you move into the fertile phase of your cycle, which is when you really want to start noting any changes in your cervix, particularly if you’re having trouble tracking your cervical mucous (CM).**

**As oestrogen levels increase, a woman's uterus and cervix start to produce a special fertile mucous which is capable of protecting the man's sperm and helping them survive for up to three to five days in the woman's body. The fertile mucus sits in the opening of the woman's cervix and lines her uterus and fallopian tubes. The mucus acts as a continuous stream to transport sperm up into a woman's fallopian tubes, in readiness for when an egg is released. Once the woman releases an egg (or ovulates) it only survives for around 12 to 24 hours.**

**The fertile phase is also called the follicular or proliferative stages, as the egg is still maturing and the lining of the uterus continues to thicken. A woman's fertile phase usually starts about three to five days before ovulation, until the egg is released.**

**If you feel your cervix it should be higher, softer, wetter and slightly more open when compared to the previous days.**

**During ovulation, your cervix will now be at it highest point and may even be difficult to reach. It should feel very wet, soft and open.**

**After ovulation**

**The time after ovulation is the post-fertile phase of the menstrual cycle. The post-fertile phase lasts for about 14 days (ranging from12 to 16 days) until the bleeding starts again. The medical terms for this phase are the ‘Luteal phase’ – which refers to the capsule left in the ovary that encased the released egg called the 'Corpus Luteum' (or 'white body'). The corpus luteum produces the progesterone hormone, bringing the lining of the uterus (or 'endometrium') to maturity. Or the alternative, the 'Secretory phase', because the lining of the uterus is now able to secrete glucose, aimed at feeding a developing baby until they fully implant in the lining of the uterus and start to draw on their mother for nourishment.**

**At this time, your cervix should feel quite similar to the pre-fertile phase: lower, firmer, only slightly moist or even dry and tightly closed again.**

**CYCLIC CHANGES IN BREASTS**

**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.**

**By the time a woman reaches her late 40s and early 50s, perimenopause is starting or is well underway. At this time, the levels of estrogen and progesterone begin to change. Estrogen levels dramatically decrease. This leads to many of the symptoms commonly linked to menopause. Without estrogen, the breast’s connective tissue becomes dehydrated and is no longer elastic. The breast tissue, which was prepared to make milk, shrinks and loses shape. This leads to the "saggy" breasts associated with women of this age.**

**Women who are taking hormone therapy may have some of the premenstrual breast symptoms that they had while they were still menstruating, such as soreness and swelling. But if a woman’s breasts were saggy before menopause, this will not change with hormone therapy.**

**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.**

**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.**

**bleeding. 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.**

**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.**

**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, diarhrea when your period starts, acne, tiredeness, and mood changes.**

**The menstrual cycle is the hormonal driven cycle. Day 1 is the first day of your period (bleeding) while day 14 is the approximate day you ovulate and if an egg is not fertilized, hormone levels eventually drop and at about day 25. The egg then begins to dissolve and the cycle begins again with the period at about day 30.**

**Most periods vary somewhat, the flow may be light, moderate or heavy and can vary in length from about 2 to 7 days; with age, the cycle usually shortens and becomes more regular.**