Summary

Menstruation is the discharge of blood and tissue that occurs each month as part of a woman's menstrual cycle. This cycle is controlled by hormones produced in both the brain and ovaries and prepares the reproductive organs for pregnancy. The lining of the uterus (endometrium) thickens in response to the hormones. If pregnancy does not occur, the lining begins to break down and discharges from the body through the vagina as the menstrual period.

Menstruation usually begins when a girl is about 12 or 13 years old (puberty) and continues until **menopause**. These are considered a woman's reproductive years and indicate the woman is physically able to become pregnant. Menstrual periods usually occur once a month and last for several days during each month. A missed menstrual period is frequently the first sign that pregnancy has occurred. The uterine lining is not shed, but rather will grow during pregnancy and develop into the placenta (a temporary organ that provides nourishment for the developing embryo). Missed periods may also indicate the presence of other gynecological conditions, such as hormonal or endocrine disorders.

The blood flow of menstruation may vary from month to month. Women typically use sanitary napkins (pads) or tampons to absorb menstrual flow. Before and during menstruation, women may experience some mild to moderate cramps, water retention and irritability. Some of these symptoms may be treated with over–the–counter *analgesic* (painkiller) medication. However, symptoms that do not respond to painkillers or that worsen over time may indicate other conditions, such as **endometriosis**.

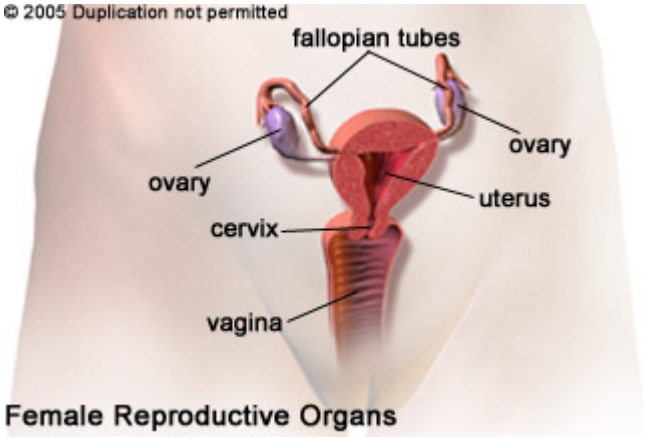
Hormones control the functions of the menstrual cycle. They signal the ovaries to develop and release the eggs. Hormones also signal the endometrium to initially begin to grow and develop, and to break down when menstruation occurs. As a woman ages and her hormone levels begin to decrease, the menstrual cycle eventually ends (menopause). Menopause typically occurs during a woman's early 50s.

About menstruation

Menstruation is the monthly shedding of tissue and blood that is the most visible part of a woman's menstrual cycle. The menstrual cycle involves all of the woman's reproductive organs. It is an indicator of good health for reproductive–aged women and also prepares the body for **pregnancy**.

The **uterus** is a fist–sized, hollow organ in the lower abdomen that can expand to accommodate a growing **fetus**. The bottom of the uterus (**cervix**) meets the top portion of the **vagina**, the tube that leads outside the body. Menstrual blood leaves the body through the vagina. The lining of the uterus (**endometrium**) includes blood vessels, glands and tissue that grow and thicken to support a fetus during pregnancy. When pregnancy does not occur, the endometrium breaks down and is shed each month during menstruation.

Each **fallopian tube** extends from the top of the uterus to an **ovary**, the organs that produce the woman's eggs. Every month, a mature egg leaves one of the ovaries and travels through the fallopian tube to the uterus. If the egg is fertilized by a sperm, it can implant in the endometrium of the uterus and develop into an **embryo**. If the egg is not fertilized, it disintegrates and is absorbed into tissue or leaves the body with the menstrual flow.



Female Reproductive Organs

The first menstrual period (**menarche**) is part of the sexual development girls go through during **puberty**. Many girls get their first period around the age of 12 or 13. However, girls may begin menstruating any time from age 8 to 16.

During the first few years of menstruation, a girl's period may be irregular. Eventually it should settle down to a more regular monthly cycle. The average menstrual cycle lasts about 28 days, but may range from 21 to 35 days. Normal cycle length varies among women and for a particular woman at different times in life.

The menstrual period usually lasts about five days each month for most women. However, it can last from two to eight days. The flow of menstrual blood may be heavy for several days and then light. It may vary in volume and length from month to month. The use of **birth control pills** may make menstrual periods lighter and shorter.

Women use various products to absorb menstrual flow. Sanitary napkins (pads) are worn inside the panties. **Tampons** are inserted into the vagina. Both are made of cotton or another absorbent material. Pads or tampons should be changed frequently (every few hours).

Menstruation continues monthly for most women in their reproductive years. Pregnancy interrupts menstruation because the endometrium must nourish the growing fetus. Menstruation resumes after childbirth, sometimes taking several months to return to a normal cycle. **Breastfeeding** may also affect the return of menstruation.

By about age 50, women's **estrogen** levels begin to decrease. The ovaries can no longer ovulate (produce eggs) regularly and eventually women stop menstruating. One year without a period is called **menopause**. A woman in menopause cannot become pregnant. Surgical removal of the ovaries may also cause a woman to reach menopause immediately, regardless of age. Many women experience several years of transition to menopause (called **perimenopause**), where the menstrual periods may become less frequent.

The menstrual cycle

The menstrual cycle is a result of the complex interaction of several hormones. Many **hormones** are involved, but the four major ones are **follicle stimulating hormone** (FSH), **luteinizing hormone** (LH), **estrogen** and **progesterone**. The interaction of these hormones generally affects two areas of the reproductive system the most: the **uterus** and the egg follicles in the **ovaries**.

The menstrual cycle can be divided into two major phases:

- The follicular phase. This phase includes the first half of the menstrual cycle, beginning with the menstrual period and ending with **ovulation**. In a 28–day cycle, this includes the first 14 days. The first day of the menstrual period is counted as day one of the cycle. The uterine lining (**endometrium**) is shed during the menstrual period for about the first five days of the follicular phase.

  Two hormones are dominant during this follicular or proliferative phase:

  - Follicle stimulating hormone (FSH). Produced in the pituitary gland in the brain. FSH stimulates about 15 to 20 egg follicles to begin developing in one ovary. FSH stimulates the follicle development and also stimulates the follicles to produce estrogen.

  - Estrogen. Produced by the growing follicles. As estrogen reaches a certain level, it causes the endometrial lining (which was just shed as menstrual blood) to begin to grow again. As it rises, the increased estrogen level eventually triggers a stop in FSH production, which prevents more follicles from developing.
- During the follicular phase, one developing egg follicle becomes larger than the others (dominant follicle). At about day 14, the estrogen from this follicle triggers a surge and release of LH from the pituitary gland. This triggers ovulation. The egg follicle bursts and releases the mature egg into the fallopian tube.

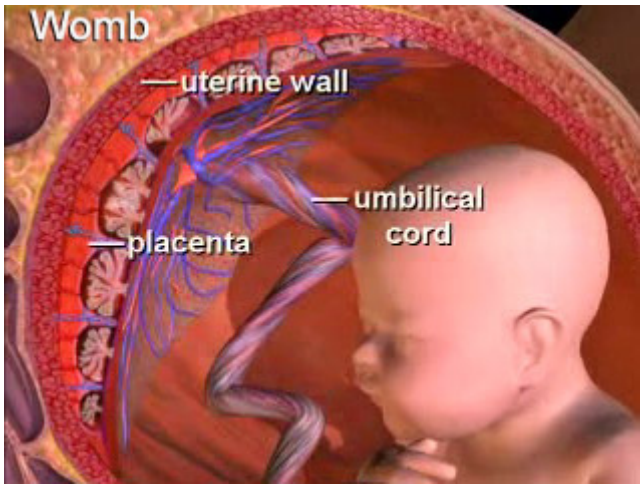
- The luteal phase. Includes the remaining 14 days of the menstrual cycle (when a woman has a 28–day cycle), beginning with ovulation and ending with the start of the next menstrual period. Two other hormones are dominant during the luteal phase:

  - Luteinizing hormone. Produced by the pituitary gland. Small amounts of LH are produced early in the follicular phase, but the later surge of LH causes ovulation. After ovulation, LH acts on the empty egg follicle, now called the corpus luteum. The corpus luteum secretes small amounts of estrogen and greater amounts of progesterone.

  - Progesterone. Produced by the corpus luteum. Progesterone promotes the growth and development of the endometrium to receive a fertilized egg. The progesterone level peaks at about day 21 of a 28–day cycle. If there is no fertilized egg, progesterone levels decrease, causing the uterine lining to begin to break down several days later. This subsequently results in menstruation.

  The production of estrogen also decreases after ovulation, as the follicles degenerate. With less estrogen and progesterone to promote endometrial development, the uterine lining breaks down enough to be shed by the end of the luteal phase at day 28. This begins the next menstrual period and returns the menstrual cycle to day one.

The days in the middle of the menstrual cycle, near ovulation, are the most likely time for a woman to get pregnant during sexual intercourse. However, in some cases ovulation has occurred at different times in the cycle. Women have also gotten pregnant while having their periods. The normal menstrual cycle length variability in women makes the precise identification of where one woman is in her particular cycle difficult.



If the egg is fertilized in the **fallopian tube**, it continues to the uterus. The enriched endometrium provides a place for the fertilized egg to implant. It does not shed and leave the body. This missed period may be the first sign that a woman is pregnant.

Problems associated with menstruation

Menstruation can cause problems ranging from mild discomfort to pain. Some body changes during the monthly cycle are normal, including breast tenderness or some discomfort just before menstruation.

Some women have symptoms before menstruating that are severe enough to be classified as **premenstrual syndrome** (PMS). Pain during menstruation (**dysmenorrhea**) includes menstrual cramps. They may be caused by **hormone**–like substances known as prostaglandins. Severe dysmenorrhea may also be a symptom of other conditions, including **endometriosis** or **uterine fibroids**. Most mild cramps can be treated with over the counter analgesic medication (painkillers) or with the use of heating pads or hot water bottles.

During menstruation, prolonged **tampon use** has been associated with an extremely rare infection called **toxic shock syndrome** (TSS). To avoid TSS, women should follow the tampon package instructions, change their tampons frequently and use the lowest absorbency tampon possible for their menstrual flow (see **Tampon Use**).

Amenorrhea is the lack of menstruation. Primary amenorrhea refers to girls who have not experienced their first periods. A girl who has not had her first period by age 16 should consult her physician. Secondary amenorrhea refers to someone who has menstruated previously but has stopped. The most common reason to miss a period is **pregnancy**. Other causes of missed periods may include:

- **Breastfeeding**
- Stopping the use of **birth control pills**
- Extreme weight loss
- Excessive exercise (e.g., ballet dancers)
- Stress
- **Hormonal** imbalances

Irregular periods may indicate hormonal imbalances or such conditions as **polycystic ovarian syndrome** (PCOS). Women may also experience very heavy bleeding (**menorrhagia**). Some women experience vaginal bleeding between periods (**metrorrhagia**). This may be a symptom of some **sexually transmitted diseases** such as gonorrhea, uterine abnormalities such as cancer, **polyps** or fibroid tumors. Menorrhagia and metrorrhagia may be controlled by using **birth control pills**.

Women should consult their physician about any menstrual conditions that change quickly or become progressively worse. Missed or irregular periods or abnormal vaginal bleeding also indicate a need for medical consultation.

Questions for your doctor about menstruation

Preparing questions in advance can help patients to have more meaningful discussions with their physicians regarding their conditions. Patients may wish to ask their doctor the following menstruation–related questions:

1. What type of sanitary products should I use for my period?
2. When will my period become more regular?
3. Are my menstrual cramps normal?
4. How can I calculate the length of my menstrual cycle?
5. Can I get pregnant during menstruation?
6. Will my periods return to normal after pregnancy?

This article was published at the following site,

http://obgyn.healthcentersonline.com/menstruation/menstruation.cfm