

FEMALE REPRODUCTIVE SYSTEM



One of the primary functions of the human body is to reproduce and ensure the survival of our offspring. In order to accomplish this, our body systems must work together to maintain good health. The sexual and parenting instincts are among the strongest of our basic drives. In this century, sexual behavior has changed with the availability of reliable contraception and many couples delay having children until later in their lives when fertility begins to decline. A whole new science has been developed to help these couples become parents.



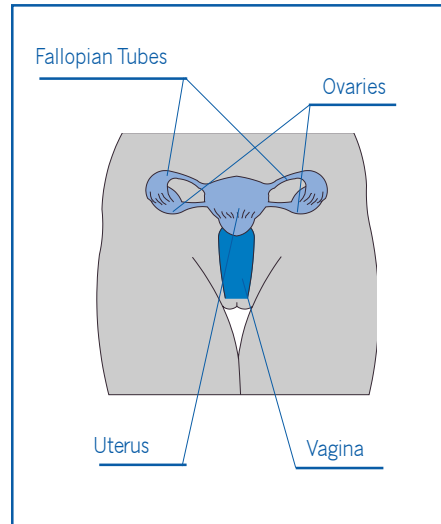
FEMALE REPRODUCTIVE SYSTEM

Our society has witnessed a significant change in women's lives and health over the past few decades. As women pursued professions and/or assumed more responsibility for the financial stability of the family, the traditional role of the homemaker has changed. Now, more than ever, it is important for women to fully understand and take control of their health — an important factor for an enjoyable, long, and healthy life.

THE FEMALE (GYNECOLOGICAL) ORGANS

The gynecological organs are those associated with childbearing and include two ovaries, two fallopian tubes, and a uterus. The ovaries are located about 4 or 5 inches below the waist, midway in the pelvic cavity.

When a female is born, her ovaries are already stocked with a lifetime supply of roughly one million ova (eggs). Beginning at puberty, the ovaries usually release one egg per month, midpoint in the menstrual cycle. They also produce female sex hormones, estrogen, progesterone, and a small amount of the male hormone, testosterone (androgen). Between each ovary and the uterus lies one of the fallopian tubes. The tubes contain a passageway through which the egg travels and meets the sperm for conception. The narrow neck of the uterus is the cervix that extends into the vagina. The clitoris is next to the vagina and is sensitive to sexual arousal. The opening of the vagina is shielded by the external genitalia. This entire area is called the vulva (the mons pubis, clitoris, and the opening of the vagina). Between the clitoris and the vagina is another smaller opening — the entrance to the urethra. The urethra is a passageway used for excretion of urine from the bladder. Both men and women have a bladder and urethra and this will be discussed in the Urinary System chapter.





THE MENSTRUAL CYCLE

Beginning at around eight years of age, the ovaries respond to the surge of the pituitary hormones and begin to increase in estrogen production and cause enlarged breasts and pubic hair growth. About two years after the breasts begin to bud, a young woman experiences the menarche (the first menses) and menstruates for the first time. This begins a woman's reproductive cycle that in later years is followed by the menopause (when the ovaries stop ovulating).

HORMONES OF THE REPRODUCTIVE SYSTEM

Estrogen is the female hormone produced by the ovaries that is responsible for ovulation, secondary sexual organ maturation, and feminine characteristics of women. Hormones of the reproductive system in both men and women are regulated by other hormones that are part of the endocrine system. (See Endocrine chapter).

Progesterone is a female hormone produced by the ovaries after ovulation. It prepares the endometrium (lining) of the uterus to either accept a fertilized egg or prepare the lining to shed as menstruation.

The menstrual cycle is an average of 28 days, although some women have longer or shorter cycles. Ovulation occurs around day 14 of the cycle. Once the egg is released, it remains fertile for 48 hours.

MENSTRUAL DISORDERS

■ TOXIC SHOCK SYNDROME

Toxic shock syndrome (TSS) is a rare and dangerous disorder (especially in women under 30 years of age) that has been associated with the use of tampons and occasionally with the use of contraceptive sponges. *Staphylococcus* is the bacteria that produces the toxin.

SIGNS AND SYMPTOMS

Sudden fever (during menses) of 102 degrees F. or higher; vomiting and diarrhea; dizziness; weakness; fainting and disorientation; a rash resembling a sunburn (particularly on the palms and the soles of the feet).

This is an emergency. Call a physician immediately as it can cause shock and/or kidney failure.

TREATMENT

Antibiotics are given immediately. If the blood pressure drops, hospitalization is necessary for intravenous drugs and fluids.

PREVENTION

Change tampons more often than usual (or do not use them at all), alternate with napkins, do not use brands that are scented or have deodorants. TSS tends to be recurrent. If one has had TSS, tampons should be avoided.



■ PREMENSTRUAL SYNDROME (PMS)

This may be a serious problem with some women (two to five percent). It may occur any time after the midpoint of the menstrual cycle and disappear after menstruation has started. The pattern of symptoms varies in each individual. A predictable pattern of physical and emotional changes occurs before each menstrual period.

SIGNS AND SYMPTOMS

Physical changes Bloating; fluid retention; weight gain; breast soreness; abdominal swelling; clumsiness; aching swollen hands and feet; fatigue; nausea; headaches; skin problems; or respiratory problems.

Emotional changes Depression; irritability; anxiety; tension; mood swings; difficulty in concentrating; lethargy.

There is no cure, but there is treatment for many of the symptoms.

DRUG TREATMENT

To reduce swelling, water retention, and bloating, a diuretic may be given. Oral contraceptives often help most women by eliminating the effect of internally produced hormones. For those with anxiety and tension, tranquilizers may be considered. Low dose progesterone may be used beginning about 10 days before the expected menses. This will not affect fertility. Exercise can be very helpful because of the emotional lift from endorphins. A balanced diet is always recommended.

■ MITTELSCHMERZ SYNDROME

This is a pain that occurs in the middle of the menstrual cycle about the time of ovulation. It is a dull ache that lasts anywhere from a few minutes to a few hours. The cause, although unknown, has been theorized to be a release of fluid from the follicle during ovulation. This is usually not a medical emergency and frequently responds to a mild analgesic (aspirin, acetaminophen, ibuprofen).



■ PAINFUL MENSTRUATION (DYSMENORRHEA)

It is not unusual to have mild abdominal cramps on the first day of menses — more than one-half of women do. The cause may be a release of serotonin, a hormone. In about 10 percent of women, however, the pain is debilitating and requires pain medication. Primary dysmenorrhea is painful but not harmful. It is most common in adolescence and often disappears by the mid 20s or after a pregnancy. It is associated with ovulating cycles. Secondary dysmenorrhea (caused from another illness or disorder) requires further testing.

SIGNS AND SYMPTOMS

Pain in the lower abdomen during menstruation, possibly extending to the hips, lower back or thighs; nausea; vomiting; diarrhea; overall aches during menstruation.

TREATMENT

An antiserotonin analgesic drug may be helpful for primary dysmenorrhea (ibuprofen, mefenamic acid, naproxen, or indomethacin and work in 80 percent of cases). Oral contraceptives are predictably helpful in primary dysmenorrhea by suppressing ovulation.

■ ABSENCE OF PERIODS (AMENORRHEA)

Primary amenorrhea (no menses) should be suspected if a young woman reaches sexual maturity and has not menstruated after two years (or about age 18). Occasionally, this is a problem of a late blooming phenomenon. It can, however, mean that there is a hormone imbalance, a physical or obstructive blockage of the menstrual blood, or an undiagnosed pregnancy. Secondary amenorrhea occurs in women who have normally menstruated and suddenly stopped for up to six months. Similar to primary amenorrhea, it may be caused by a secondary condition, such as pregnancy, tumors, nutritional deficits, or overexercising.

SIGNS AND SYMPTOMS

In young girls Menstruation has not yet begun at age 16 (primary amenorrhea).

In adult nonpregnant women Absence of menstruation for six months or longer (secondary amenorrhea).

DRUG TREATMENT

By using progesterone, menses may be restored if there is adequate circulating estrogen. If there is lack of estrogen and pregnancy is not planned, hormonal replacement therapy may be considered to enhance secondary sexual development and prevent osteoporosis.



■ HEAVY MENSES (HYPERMENORRHEA)

This is common, especially, in young women who have begun menstruating but have not begun to ovulate. Often, heavy periods reflect a disturbance of the hormone cycle. It may also be caused by fibroids, pelvic infection, endometriosis, an intrauterine contraceptive device, or oversecretion of estrogen without progesterone. Menorrhagia is a common descriptive word for heavy menstruation and is defined as a period that lasts longer than seven days and heavy in amount.

SIGNS AND SYMPTOMS

Excessive menstrual bleeding.

DRUG TREATMENT

If the cause of the bleeding is not serious, cyclic estrogen and progesterone may be helpful. It can conveniently be given in the form of an oral contraceptive.

SURGICAL TREATMENT

If the bleeding is excessive, continuous, and does not spontaneously stop, or if the patient is over 40 years of age, a dilatation and curettage (D & C) and/or a hysteroscopy may be needed to rule out serious disease and to stop the bleeding.

■ INFREQUENT MENSTRUAL PERIODS (OLIGOMENORRHEA, DYSFUNCTIONAL UTERINE BLEEDING)

Some women ovulate and menstruate less frequently without any pathological disease, and it is normal to menstruate less often as menopause is approached. Fewer menstrual periods than the usual (11-13 per year) is considered infrequent. If irregular menses is associated with signs of androgen excess (acne, excessive hair growth), investigating the adrenal gland or tumor of the ovary is necessary.



MENOPAUSE

The menopause is a natural state of life. It is a transition from regular menstruation and fertility to a time when menses stops and children can no longer be conceived. It happens when the number of eggs in the ovaries are used up or have degenerated during the aging process. The lack of estrogen may produce a number of effects.

SIGNS AND SYMPTOMS

Hot flashes or flushes (sudden sensing of heat and sweating that spreads over the body) — often without warning or during the night.

Vaginal tissues become dryer, thinner, and less flexible resulting in painful intercourse.

Urinary tract infections and sagging of the pelvic organs due to loss of tissue support.

Risk of osteoporosis or bone mineral loss that causes bones to become thin and brittle is increased.

Risk of cardiovascular disease increases after the menopause, due to lack of estrogen production that no longer is present to give protection from heart attack and stroke.

Emotional changes (eg, mood swings, irritability, depression) can accompany menopause, but these symptoms may be from insomnia and sleep deficits from the nighttime hot flashes.

TREATMENT

Regular weight bearing exercise and a diet rich in calcium and protein is helpful.

DRUG TREATMENT

Supplemental estrogen can help reduce the loss, and stabilize the bones. Once a serious cause is ruled out, treatment with hormonal replacement therapy may be considered using estrogen or combinations of estrogen and progesterone to prevent osteoporosis and heart disease. The risk of estrogen, however, should be discussed with a physician.

For those women who have had cancer of the lining of the uterus or breast cancer, special precautions and care should be used to advise hormones. Currently available are selective estrogen treatments for osteoporosis prevention and treatment with no risk for cancer of the endometrium and the breast. All treatments of the menopause should include adequate exercise, good nutrition, smoking cessation, and none or moderate alcohol consumption.

■ POSTMENOPAUSAL BLEEDING

Bleeding after cyclic menstruation has stopped is a significant warning sign of cancer and should be investigated. The explanation may be simple, such as a vaginal infection (yeast), traumatized mucous membrane from intercourse, or a side effect of estrogen. In all cases, the source of the bleeding must be determined and treated. Treatment depends on the underlying disorder.



VAGINAL AND VULVAR DISORDERS

■ DEVELOPMENTAL DISORDERS

At the moment of conception, the embryo acquires either male (XY) or female (XX) chromosomes. For forty days, the males and females are indistinguishable. Then, if the fetus has a Y chromosome, testes will develop. If a Y chromosome is not present and two XX chromosomes are present, ovaries will develop. These organs secrete male or female hormones, respectively, and in response, the fetus develops either a female or male urogenital tract. Something can go wrong at any stage. For instance, in a female fetus, if something interferes with a duct (Muelletarian agenesis), a baby may be born with no vagina.

Sometimes, a female is born with genitals that seem sexually ambiguous (characteristics of both sexes). This is linked to adrenal hyperplasia, where more male hormone-like secretions (androgens) influence the development. Sometimes a female is born with little or no vagina due to testicular feminization (androgen resistance syndrome). Most girls who have Muellerian ageneses are infertile but the vagina can be reconstructed for sexual function. Girls with adrenal hyperplasia may have normal internal organs, and with surgical correction of the external genitals and proper medication, may be able to conceive. Girls with testicular feminization are invariably infertile, but they have a normal appearance except for female hair distribution. In all cases, individual counseling is important for optimum growth and development.

■ VULVITIS

This is an inflammation of the vulva or external genitalia. It may be caused by allergies (from a deodorant spray or sanitary pad), poor hygiene, or a bacterial or yeast infection. This can be treated depending on the cause.

SIGNS AND SYMPTOMS

Genital itching.

TREATMENT

Keep the area clean and dry (use a hair dryer, rather than a rough towel); wear loose and absorbent underclothing and cotton underpants. Avoid use of a deodorant spray, soap, or sanitary napkins.

DRUG TREATMENT

A 1% hydrocortisone cream applied three times a day can relieve the itching.

■ ATROPHIC VULVAR DYSTROPHY

Dystrophy is a degeneration of tissue. It often occurs after the menopause in the absence of estrogen.

SIGNS AND SYMPTOMS

A dry, itchy, reddened area appears on the vulva. Later, these areas may thicken and turn white.

DRUG TREATMENT

The treatment depends on the source of the problem but common itching may be relieved with 1% hydrocortisone cream. Androgen ointment is also helpful to reverse the skin changes. Careful follow up and monitoring is important since there is a malignant potential (risk of cancer) for change.



■ PRURITUS VULVAE

Pruritus means itching. The common disorders that may cause itching are allergies, seborrheic dermatitis (see Skin chapter), an infection – often yeast (*Candida*), and lack of estrogen (post-menopausal). Usually, although very distracting, the problem is not serious and will respond to appropriate management.

SIGNS AND SYMPTOMS

Intense itching, burning, or irritation.

TREATMENT

Stop using deodorant sprays and pads, wear cotton underpants and panty hose, bathe the area with unscented soap, and sit in a warm soda bath, allowing the soda to dry on the skin.

DRUG TREATMENT

1% cortisone cream is helpful and should be used three times per day.

SURGICAL TREATMENT

If an infection, such as condylomata is present, removal with a laser, electrocautery, or surgery is sometimes necessary.

■ GENITAL WARTS

Genital warts are also known as venereal warts or condyloma acuminata. The cause is a papilloma virus that is sexually transmitted. The incubation period is one to six months. These warts commonly grow on the vulva, vagina, cervix, and the perineum (the area between the vagina and anus). The virus thrives in a moist environment. Since sexually transmitted infections, such as gonorrhea or syphilis also can occur, additional testing is usually needed. A woman with genital warts should have an annual pap smear because of the increased risk of cancer.

SURGICAL TREATMENT

The warts can be removed with laser, surgery, electrocautery, or chemical ablation with a strong acid under local anesthesia. The warts tend to recur.

■ BARTHOLIN'S GLAND ABSCESS

The glands are located at the entrance to the vagina, one on each side. They can become infected, sometimes as a result of gonorrhea. Initially, the drainage may be pus but as time goes on, the duct is blocked and an abscess develops which can be very painful.

DRUG TREATMENT

Associated venereal diseases will require antibiotics.

SURGICAL TREATMENT

Draining the abscess for immediate pain relief and preservation of the gland function is done. Occasionally, removal is necessary.



■ SEBACEOUS CYSTS

Sebaceous glands are plentiful around the genitals and are located just beneath the skin. They produce an oily substance that keeps the skin supple. If the small opening of the gland becomes obstructed, a cyst will form. Generally, they are painless, but they are prone to infection.

DRUG TREATMENT If the cyst becomes infected, antibiotics are used.

SURGICAL TREATMENT A cyst that becomes bothersome can be destroyed by electrical current or surgical removal, usually with a local anesthetic.

■ CANCER OF THE VULVA

Cancer of the vulva is rare. It grows slowly and occurs most frequently in elderly women.

SURGICAL TREATMENT The treatment is limited to removing the entire vulva, surrounding skin, and occasionally the lymph glands in the groin. Radiation has limited value but is sometimes necessary.

■ VAGINITIS

Vaginitis is an inflammation of the vaginal walls. The inflammation may be sexually transmitted. It is advised not to have intercourse until the infection is treated.

SIGNS AND SYMPTOMS Unusual discharge from the vagina; itching; irritation; painful intercourse; vaginal bleeding.

DRUG TREATMENT **Trichomoniasis** This is caused by a parasite and usually contracted with intercourse. Both partners should be treated. Metronidazole is a medication that has been helpful.

Yeast Infections This is a fungal infection. Pregnancy, diabetes, use of antibiotics and cortisone increase the risk of the infection. The treatment is an oral or intravaginal antifungal agent. Several are available over the counter (eg, miconazole, chlortrimazole).

Nonspecific Vaginitis (bacterial vaginosis) This is also a sexually transmitted disease and may be caused by several organisms. Many women have no symptoms but others develop a grayish discharge. The infection responds to oral and intravaginal antibacterial treatment (eg, metronidazole, ampicillin, or doxycycline).



■ NONSPECIFIC URETHRITIS

This is an inflammation of the urethra that is sometimes linked to Chlamydia, a sexually transmitted bacteria.

SIGNS AND SYMPTOMS

Frequent urination; stinging and burning on urination; lower abdominal pain.

TREATMENT

It is important to drink a lot of water. Cranberry juice (hippuric acid) may help ease the stinging and burning on urination.

DRUG TREATMENT

Antibiotics may or may not be helpful, depending on the culture of the urethra.

■ ATROPHIC/POSTMENOPAUSAL VAGINITIS

This is an inflammation of the vagina caused by degeneration of the vaginal tissue, most often due to the lack of estrogen. This can also occur while breast feeding (which is temporary).

SIGNS AND SYMPTOMS

Painful intercourse.

TREATMENT

A water soluble lubricant may be used with intercourse.

DRUG TREATMENT

After the menopause, estrogen can be delivered locally in the vagina or may be given orally (estrogen replacement therapy).

■ VAGINAL CYSTS

Small swellings in the wall of the vagina may often be felt by the patient or discovered during a pelvic examination. Several types of cysts are common. Inclusion cysts are the result of trauma (birthing, surgery). Gartner duct cysts occur during the fetus development and do not disappear.

SURGICAL TREATMENT

If the cysts cause discomfort, they can be surgically removed.

■ VAGINAL TUMORS, CANCER

Vaginal tumors are extremely rare. They most likely occur between the ages of 45 and 65 years. Unfortunately, they can extend into the bladder and rectum. In recent years a different tumor called clear cell adenocarcinoma has been diagnosed in young women born to mothers who took diethylstilbestrol (DES) during pregnancy. This was prescribed to treat diabetic pregnant women for the prevention of a miscarriage. The result, apparently, was this abnormal glandular tissue.

SURGICAL TREATMENT

The treatment is either surgery or radiation therapy. Occasionally, plastic surgery can be used to construct a vagina that has been removed.



CERVIX, UTERUS, AND FALLOPIAN TUBE DISORDERS

The uterus, or womb, is the organ that shelters the fetus when a woman is pregnant. The fallopian tubes are connected to the uterus, one on the top of each side. The uterus is shaped like an upside down pear. The narrower end, the cervix, extends down into the vagina.

■ DEVELOPMENTAL DISORDERS

Because of genetic problems, or because something goes wrong during pregnancy, some female babies are born with abnormalities of the cervix, uterus, and fallopian tubes. These can range from complete absence of the female reproductive organs to minor disorders that make it difficult for a woman to conceive. Surgery can sometimes correct structural problems of the uterus and correct a cervix that is unable to sustain a full term pregnancy.

■ BENIGN CERVICAL DISORDERS

By examining the the cervix, a variable number of conditions can be detected that result in bleeding after intercourse or an increased vaginal secretion.

Cervical Erosion This is a condition where the lining of the cervix (the lower end of the uterus) is eroded from an infection or injury (eg, childbirth). It is normal in most women. If a pap smear is normal, cryosurgery (freezing) can be used to destroy the tissue outside of the cervical canal to reduce bleeding after intercourse.

Cervical Polyps These are growths, like small grapes, that protrude from the cervical canal. They are rarely cancerous and often have no symptoms. They can be removed easily in a physician's office with no discomfort.

Cervicitis This is an inflammation of the cervix. Occasionally it causes a vaginal discharge or postcoital spotting, and tenderness with intercourse. The treatment varies. If a venereal disease is causing the inflammation, antibiotics are used; for bleeding, cryotherapy or electrocautery is used. Many times, no treatment is necessary.

Nabothian Cyst This is a cyst of the mucous secreting glands of the cervix developed when the opening is obstructed as a result of childbirth, or inflammation. If treatment is necessary for an associated disorder, electrocauterization and cryosurgery are done. This requires no anesthesia and is an office procedure.



■ CERVICAL DYSPLASIA

This is a precancerous cellular change of the cervix (often detected by a pap smear) and is often found in women between 25 and 35 years of age. It may occur earlier in women who are sexually active at an early age and have multiple sexual partners. Dysplasia is divided into mild, moderate, and severe. The treatment is determined by the severity of the dysplasia, the age of the patient, and the desire of the patient to remain fertile. Mild and moderate dysplasia may be treated by electrocautery, laser, or cryotherapy. Severe dysplasia is treated by conization (removing a cone shaped specimen from the cervix). Occasionally, a hysterectomy is performed — particularly in severe dysplasia when the risk of cancer is high, and after childbearing has been completed.

■ CANCER OF THE CERVIX

Cervical cancer is one of the more common cancers of women. It usually occurs between 35 and 55 years of age. It is slow growing and can be detected early by yearly pap smears. The risk of cervical cancer is increased with a sexually transmitted viral infection (eg, genital warts or herpes), sexual activity at an early age, multiple sexual partners, and many pregnancies.

SURGICAL TREATMENT If discovered early, surgical excision (hysterectomy), with or without removal of part of the vagina and the regional lymph nodes, is done. For a more advanced disease, radiation therapy, with or without surgery, is used.

■ UTERINE MYOMATA (FIBROID, LEIOMYOMAS, FIBROMYOMAS)

Fibroids (myomas) are benign tumors that develop within, or are attached to, the uterine wall. The size ranges from a small pea to the size of a grapefruit, or larger in rare circumstances. Most of the time they have no symptoms. After menopause, the tumors will often shrink and disappear as they are estrogen sensitive. Fibroids are quite common, rarely malignant, and most of them cause few problems. They occur in about 20 percent of women over 35 years of age. Fibroids can interfere with pregnancy, causing miscarriages.

TREATMENT The treatment varies. If there are no symptoms, treatment may be unnecessary.

SURGICAL TREATMENT With heavy and painful menstrual periods, a hysterectomy may be recommended. For some women who would like to preserve fertility, it is possible to surgically remove the myomas (myomectomy).



■ ENDOMETRIAL POLYPS

This occurs when the uterine lining (endometrium) grows too thick, which is caused by the lack of progesterone that is released by ovulation. It is easy to treat but must be distinguished from a precancerous condition (adenomatosis hyperplasia).

DRUG TREATMENT Hyperplasia can be reversed by using cyclic progesterone or oral contraceptives with progesterone-like hormones in the formula.

SURGICAL TREATMENT Polyps can be removed by dilatation and curettage (D&C) or with a hysteroscope.

■ CANCER OF THE UTERUS

This is also called endometrial cancer because it starts in the endometrium. It is one of the more common cancers in women. It occurs most frequently after menopause, between the ages of 50 and 70. There is a higher risk with obesity, continuation of menstruation after the age of 50, chronic anovulation, no pregnancies, and the use of estrogen alone with no progesterone. In the early phase, there are no symptoms. Pap smears do not accurately screen for cancer of the endometrium but will occasionally detect abnormal endometrial cells in the smear. The disease is highly curable in the early stages but very difficult to cure in late stages when metastases (spreading to other organs) has occurred.

SURGICAL TREATMENT The primary treatment is surgery (hysterectomy).
Radiation is also used if the disease has spread to other pelvic organs. Some anti-estrogen hormones may be used for advanced disease.

■ HYDATIFORM MOLE/CHORIOCARCINOMA

A rare growth called hydatiform mole sometimes develops at the beginning of a pregnancy from tissue surrounding the fertilized egg that would normally produce the placenta. In these cases, the fertilized egg does not develop or survive. The malignant (cancerous) form of a hydatiform mole is called choriocarcinoma.

TREATMENT If the tumor is not malignant, it can be removed by suction curettage, which is curative.

DRUG TREATMENT If choriocarcinoma (cancer) occurs, it is treated with chemotherapy for several months. If successful, treatment can be stopped and fertility renewed in one to three years.



■ ENDOMETRIOSIS

Endometriosis occurs when the lining of the uterus somehow escapes and grows outside of the uterus on the surface of the uterus, ovaries, and the fallopian tubes. The mislocated cells imitate the menstrual cycle, first thickening and then bleeding as menstruation begins. Because the cells are embedded within other tissue, and there is no place for the blood to go, blood blisters or cysts are formed. They can then scar and form adhesions. Many women have no symptoms but some are disabled with secondary pain. The cause is unknown but it does occur more often in women who have not had children. It is predominant in families. It can cause infertility and will disappear during menopause. Pregnancy, if conception is possible, will reverse the growth of the lesions.

DRUG TREATMENT The ideal treatment is pregnancy. Progesterone, Danazol, and Gonadotropin agonists may be effective.

SURGICAL TREATMENT Surgical ablation (laser or electrocautery) and surgery to remove the lesions may be done through a laparoscope. Occasionally, hysterectomy and removal of the ovaries and fallopian tubes are necessary in advanced disease, which is nonresponsive to drug therapy.

■ ADENOMYOSIS

In adenomyosis, some of the endometrial tissue migrates and grows with the muscular walls of the uterus. This often occurs in late reproductive life. Most women have no symptoms. Some women may experience heavy menstrual flow and cramps. The treatment is dependent on childbearing plans.

SURGICAL TREATMENT A hysterectomy may be considered if no children are desired.

■ PELVIC INFLAMMATORY DISEASE

This is an infection of the fallopian tubes and is also known as salpingitis. The bacteria responsible for the inflammation are usually sexually transmitted. Spermicide, diaphragms, or condoms may give some protection from the infection. If an intrauterine device is in place, the severity of the infection may be more severe.

SIGNS AND SYMPTOMS An extremely tender cervix and uterus; fever; chills; discharge from the cervix.

DRUG TREATMENT The treatment is antibiotics. If the infection is generalized, treatment will be given in the hospital with intravenous fluid and nutritional support.

SURGICAL TREATMENT If the infection does not respond to medication, an abscess can form requiring incision and drainage or removal of the pelvic organs. With early treatment, this is rarely needed.



OVARIAN DISORDERS

■ OVARIAN CYSTS AND BENIGN TUMORS

A cyst is a sac and often filled with fluid. Most ovarian cysts are harmless and disappear on their own. These rarely require treatment. Occasionally, however, a benign cyst will persist. An ovarian tumor is solid and noncystic. Benign (noncancerous) tumors do not spread to other tissues. If a tumor is large, leaks fluid rapidly, or if it twists, severe pain is experienced.

DRUG TREATMENT Persistent ovulatory cysts may be treated with ovulatory suppressive hormones using oral contraceptives.

SURGICAL TREATMENT If the cyst or tumor causes pain, surgery is done for drainage or removal of the cyst or tumor.

■ CANCER OF THE OVARY

Cancer of the ovary occurs in approximately one in 70 women in the U.S. It can be life-threatening. In its earliest stages, it produces few noticeable symptoms and is usually found during routine physical examinations. If not found early, it eventually becomes painful and forms fluid in the abdomen causing distention (ascites). Ovarian cancer most often occurs after menopause in women who have never been pregnant, have trouble conceiving, or has a family history of this cancer. Women who have had several pregnancies or used oral contraceptives in the reproductive time of life are less likely to develop ovarian cancer. Ovarian cancer can be treated if found early, but the overall survival is 30 to 40 percent.

SURGICAL TREATMENT Aggressive surgery, chemotherapy, radiation therapy, and bone marrow transplantation are used, often in combination.

■ POLYCYSTIC OVARIES

This is a disease of young women who often have never had a normal menstrual period or menstrual rhythm. The patients often have more facial hair, acne, and tend to be overweight. Most of the time, they do not ovulate and are infertile. Follicle cysts do develop, but ovulation may not occur. Laboratory tests often confirm an increased amount of androgen (male-like hormone) in the blood.

TREATMENT Cosmetic management of facial hair and acne is possible.

DRUG TREATMENT Ovulatory-inducing medication for fertility is used. Ovarian suppression with oral contraceptives may be helpful if fertility is not desired.

SURGICAL TREATMENT Surgery with a wedge resection of the ovaries has been done in the past but is used less often now there are better medical treatments using drugs as described.



BLADDER AND URETHRA DISORDERS

The bladder lies between the pubic bone and the uterus. It is a sac where urine is stored after it has been excreted by the kidneys and flowed to the bladder through the ureters.

■ CHRONIC URETHRITIS

Prolonged irritation and inflammation of the urethra can persist over weeks or months, with or without evidence of bacterial infection. The chronically inflamed urethra becomes narrow and trigonitis (inflammation of the bladder opening) is often found.

SIGNS AND SYMPTOMS Frequent need to urinate; painful urination.

TREATMENT Treatment often includes stretching (dilating) the urethra with an instrument.

DRUG TREATMENT If there is an acute infection, antibiotics are given.

■ URINARY INCONTINENCE AND IRRITABLE BLADDER SYNDROME

Urinary incontinence and other related disorders are discussed in the Urinary System chapter.

GYNECOLOGICAL SURGERY AND SCREENING

A variety of surgical and diagnostic techniques are available for preserving women's health. Newer instrumentation with cold and intense light sources allow inspection and treatment through small openings. The following are some of the most common surgical procedures:

■ HYSTERECTOMY

Hysterectomy is removal of the uterus. This surgery is performed approximately 600,000 times each year. There is controversy regarding alternative medical and surgical management. A woman should research health care options before deciding on this surgery. Understanding these options may influence a decision.

DECIDING ON A HYSTERECTOMY

Necessary Cancer of the uterus, cervix, ovaries (with or without adjunctive treatments, such as chemotherapy and radiation therapy).

Acceptable Large or rapidly growing fibroid tumors; severe endometriosis; chronic pain from organic illness (as infection or endometriosis); loss of pelvic support.

Questionable Precancerous cervical or endometrial changes; small fibroids without symptoms; benign ovarian cysts.

Avoidable Benign perimenopausal bleeding by the use of estrogen replacement therapy (out of cycle bleeding or simple endometrial hyperplasia with no atypical cells), sterilization, convenience of avoiding menstruation.



SURGICAL APPROACHES FOR HYSTERECTOMY

Abdominal Hysterectomy Performed through an incision into the abdomen

Vaginal Hysterectomy Performed through the vagina

Laparoscopy-assisted Vaginal Hysterectomy Performed through the vagina with the use of a laparoscope for guidance and assistance.

TYPES OF HYSTERECTOMIES

Partial Hysterectomy The cervix is not removed.

Total Hysterectomy The entire uterus is removed.

Hysterectomy with Bilateral Salpingo-oophorectomy The fallopian tubes and ovaries are removed with the entire uterus.

The risks vary with each technique and the choice is determined by the gynecologist with full disclosure and informed consent from the woman. All techniques require a general anesthesia or regional anesthesia, such as a spinal or epidural block.

■ ENDOMETRIAL ABLATION

For women suffering from heavy menstrual flow without signs of cancer, and has a normal uterine anatomy, ablation (removal) of the endometrium is less invasive and less costly than hysterectomy. Endometrial resection (ablation) reduces or eliminates menstrual bleeding in over 80 percent of patients and menstrual pain in over 70 percent. Approximately 20 percent of patients require an additional procedure within five years of the first endometrial resection and nine percent eventually have a hysterectomy. Most often the additional treatment is performed in the first three years following resection of the endometrium.

■ CRYOTHERAPY

Cryotherapy involves freezing cells on the cervix to remove abnormal cells. Freezing destroys cells but does not remove them. The dead cells dissolve into the vaginal fluid and are washed away in normal secretions. This can cause an increased vaginal discharge for about two weeks after the procedure. It is done in an office with no anesthetic for benign (noncancerous) disease.

■ COLPOSCOPY

A colposcope is an instrument with an intense light and magnifying lens. It is used to examine the cervix, vagina, and vulva. When abnormal areas are detected, a sample is taken for further examination (biopsy). This is usually done in a physician's office without anesthesia.



■ DILATATION AND CURETTAGE (D & C)

This is a technique to scrape away the lining of the uterus. The cervix is widened (dilated), which requires an anesthetic, and the uterine lining is scraped with a curette (a spoon-like instrument). The harvested tissue is sent to a pathologist. This technique is also used to complete or perform abortions, remove placental fragments, stop severe bleeding when polyps or hyperplasia is present, or to diagnose cancer of the uterus. When only diagnostic biopsies are required, a small cannula may be used in the office setting without the use of anesthesia.

■ HYSTEROSCOPY

Using a small caliber instrument, the hysteroscope allows the inside of the uterus and the openings of the fallopian tubes using a video camera and monitor. The hysteroscope is a small telescope that is inserted to look at the walls of the uterus for disease. Surgical procedures to remove polyps, small myomas, or lysis adhesions can be performed in a doctor's office using local anesthesia.

■ LAPAROSCOPY

In laparoscopy, a lighted tube with a magnifying lens on the end allows the operator to see inside the body. Laparoscopy can be used to diagnose a condition, such as endometriosis; it can also be used to perform surgery. Laparoscopic surgery uses small holes or punctures rather than one large incision. These small incisions result in less postoperative pain and shorter recovery as compared to abdominal incisions. Women may return to normal functioning in one to three days in comparison to one to three weeks after a more extensive surgery. The procedures that can be performed through a laparoscope are cholecystectomy (removal of the gallbladder), removal of segments of the colon, assisting vaginal hysterectomy, removal of myomas, sterilization, removal of ovarian cysts, removal of tubes and ovaries after previous hysterectomy, and treatment of adhesions and lesions of endometriosis.

■ LASER SURGERY

Laser surgery uses a beam of very intense and focused light to perform surgery. It is used, among other procedures, to remove abnormal tissue from the cervix, destroy endometriosis, remove ovarian cysts, remove perineal warts. It is often performed at the same time as a laparoscopy.



■ LOOP ELECTROSURGICAL EXCISION PROCEDURE (LEEP)

A high intensity electrical current passes through a wire used to cut a thin slice of tissue from the cervix. This tissue can be examined under a microscope. In addition to obtaining samples of tissue for diagnosis, LEEP also can be used for treatment by removing abnormal tissue. A local anesthetic may be administered before the procedure.

■ ULTRASOUND

This is the use of high frequency sound to make a picture of the structures inside of the body. From this image, the physician or diagnostic expert can tell the size and shape of the ovaries, uterus, and other pelvic structures. It can determine the age and exact location of a fetus within the uterus. In some situations, physical details of a fetus can be identified. It is especially helpful in confirming a possible multiple pregnancy.

CONTRACEPTION, STERILIZATION, AND ABORTION

Many methods of birth control, or contraception are available that have a high degree of safety and effectiveness. These methods allow a woman to select if and when to have children and to plan a family. Without such methods, up to 85 percent of sexually active women using no contraception would be expected to become pregnant in a year. Some methods (condoms, spermicide, diaphragms) also provide protection against sexually transmitted diseases (STDs) and cancer of the cervix. All methods allow a woman to control reproduction.

■ HORMONAL METHODS

Hormones can prevent pregnancy by blocking the release of an egg from the ovary.

Oral Contraceptives When used properly, oral contraceptives are very effective. To be effective, the pill should be taken daily at the same time. Aside from preventing pregnancy, oral contraceptives protect against cancer of the ovary and the endometrium. The longer the pill is taken, the greater the protective effect. Women who smoke, are over 35 years of age, and have a history of vascular disease (stroke or thrombophlebitis), uncontrolled hypertension, active liver disease (hepatitis), and cancer, should not take oral contraceptives.

Implants This involves inserting small plastic tubes containing hormones just under the skin of the arm. The implants require surgical removal. The hormones are contraceptively effective up to five years. Amenorrhea results.

Injections This involves the injection of a long acting progesterone into the body (intramuscular) every three months.



■ BARRIER METHODS

Some, but not all barrier methods of contraception provide some protection from STDs and combinations of the barrier methods prevent pregnancy.

Diaphragm The diaphragm is a reusable round rubber disk with a flexible rim that fits inside the vagina to cover the cervix. This may be inserted and removed as desired.

Cervical Cap This is similar to a diaphragm, although it is smaller. It should be fitted by a physician or nurse, then may be inserted and removed as desired.

Condom Condoms, for use by men and women, are all available without a prescription. They offer good protection against STDs, including the HIV infection that causes AIDS, as well as pregnancy, when used properly.

■ INTRAUTERINE DEVICES

There are currently two types of intrauterine devices (IUD) available. One is a plastic device with copper that can be used up to eight years, and the other is a device that releases the hormone progesterone (used for one year). The IUD must be inserted by a trained physician or nurse.

■ ABSTINENCE

This is also known as natural family planning or the rhythm method. Periodic abstinence relies on close observation of a woman's cycle to detect when ovulation occurs.

■ STERILIZATION

Women and men who no longer wish to have children may choose to undergo sterilization. Women undergo tubal ligation that is done by laparoscopy. The procedure is highly effective in preventing pregnancy. Complications are rare. For sterilization in men, see vasectomy on page 418.

■ ABORTION

The medical term for termination of pregnancy by any cause is called an abortion. Spontaneous abortion is a natural end of a pregnancy and is commonly called a miscarriage. An elective abortion refers to the surgical or medical termination of a pregnancy. If the abortion is done for medical indications, it is known as a therapeutic abortion.

Elective abortions may be performed in an office setting using a vacuum or suction curettage. The abortion can safely be done from the second week to the 13th week of a pregnancy. After 13 weeks, a more involved procedure is necessary.



WHAT TO DO

SEVERITY LEVEL

SYMPTOM

POSSIBLE DIAGNOSIS

	<p>Seek Medical Help Immediately!</p>	<p>Sudden fever (during menses), vomiting and diarrhea, dizziness, weakness, fainting and disorientation, rash</p> <p>Extremely tender cervix and uterus, fever, chills, discharge</p>	<p>Toxic shock syndrome</p> <p>Pelvic inflammatory disease</p>
	<p>Make an appointment to see your doctor</p>	<p>Bloating, fluid retention, weight gain, breast soreness, aching swollen hands and feet, fatigue, nausea, headaches, skin problems or respiratory problems, accompanied with depression, irritability, anxiety and mood swings</p> <p>Pain in lower abdomen (during menses) extending to hips and lower back or thighs, nausea, diarrhea, overall achiness</p> <p>Absence of menstruation at age 16, absence of menstruation for six months or longer</p> <p>Ongoing heavy bleeding</p> <p>Hot flashes, urinary tract infections, drying vaginal tissues, emotional changes</p> <p>Dry, itchy, reddened area on vulva; later becoming thickened and white</p> <p>Warts on the genitals</p> <p>Swollen glands around the genitals</p> <p>Unusual discharge, itching, irritation, painful intercourse, vaginal bleeding</p> <p>Frequent urination, stinging and burning with urination, lower abdominal pain</p>	<p>Premenstrual syndrome (PMS)</p> <p>Dysmenorrhea</p> <p>Amenorrhea</p> <p>Hypermenorrhea</p> <p>Menopause</p> <p>Atrophic vulvar dystrophy</p> <p>Genital warts</p> <p>Sebaceous cysts</p> <p>Vaginitis</p> <p>Nonspecific urethritis</p>



Make an appointment to see your doctor

Painful intercourse

Atrophic/postmenopausal vaginitis

Vaginal discharge or postcoital spotting, tenderness with intercourse

Cervicitis

Discharge with severe abdominal pain

Ovarian cyst

Pain and distention (from fluid) of the abdomen

Ovarian cancer

Acne, more facial hair, overweight

Polycystic ovaries

Frequent and painful urination

Chronic urethritis



Try the home treatment outlined in this chapter

Genital itching (if nontreatable, call a physician)

Vulvitis

