Patient education: Abnormal uterine bleeding (Beyond the Basics)

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INTRODUCTION

The inside of the uterus has two layers. The thin inner layer is called the endometrium. The thick outer muscular wall is the myometrium (myo = muscle) (figure 1). Menstruation occurs 10 to 14 days after ovulation. In women who ovulate and menstruate regularly, the endometrium thickens every month in preparation for pregnancy. If the woman does not become pregnant, the endometrial lining is shed during the menstrual period. With menopause, ovulation stops and the lining stops growing and shedding.

Under normal circumstances, a woman's uterus sheds a limited amount of blood during each menstrual period (less than 5 tablespoons or 80 mL). Bleeding that occurs erratically or excessive regular menstrual bleeding is considered to be abnormal uterine bleeding. Once a woman who is not taking hormone therapy enters menopause and the menstrual cycles have ended, any uterine bleeding is considered abnormal.

Abnormal uterine bleeding can be caused by many different conditions. This topic review discusses the possible causes of abnormal bleeding, how it is evaluated, and treatments that may be recommended.

CAUSES OF ABNORMAL UTERINE BLEEDING

Most conditions that cause abnormal uterine bleeding can occur at any age, but some are more likely to occur at a particular time in a woman's life.

Abnormal uterine bleeding in young girls — Bleeding before menarche (the first period in a girl's life) is always abnormal. It may be caused by trauma, a foreign body (such as toys, coins, or toilet tissue), irritation of the genital area (due to bubble bath, soaps, lotions, or infection), or urinary tract problems. Bleeding can also occur as a result of sexual abuse.

Adolescents — Many girls have episodes of irregular bleeding during the first few months after their first menstrual period. This usually resolves without treatment when the girl's hormonal cycle and ovulation normalizes. If irregular bleeding persists beyond this time, or if the bleeding is heavy, further evaluation is needed.

Abnormal bleeding in teens can also be caused by any of the conditions that cause bleeding in all premenopausal women, including: pregnancy, infection, and bleeding disorder or other medical illnesses. These and other causes are discussed in the next section.

Premenopausal women — Many different conditions can cause abnormal bleeding in women between adolescence and menopause. Abrupt changes in hormone levels at the time of ovulation can cause vaginal spotting, or small amounts of bleeding. Erratic or unpredictable bleeding can also occur in premenopausal women who use hormonal birth control methods.

Some women do not ovulate regularly and may experience unpredictable light or heavy vaginal bleeding. Although irregular ovulation is most common when periods first begin and during perimenopause, it can occur at any time during the reproductive years. (See "Patient education: Absent or irregular periods (Beyond the Basics)".)

Some women who ovulate regularly experience excessive blood loss during their periods or bleed between periods. The most common causes of such bleeding are uterine fibroids, uterine adenomyosis, or endometrial polyps. Fibroids are benign masses in the muscle layer of the uterus (myometrium), while adenomyosis is a condition in which the lining of the uterus (endometrium) grows into the myometrium. Endometrial polyps are fleshy (usually benign) growths of tissue which project into the uterine cavity. These conditions are common causes of abnormal uterine bleeding. Fibroids, adenomyosis and polyps can also occur in anovulatory women. (See "Patient education: Uterine fibroids (Beyond the Basics)" and "Patient education: Heavy or prolonged menstrual bleeding (menorrhagia) (Beyond the Basics)".)

Other causes of abnormal uterine bleeding in premenopausal women include:

- Pregnancy
- Cancer or precancer of the cervix or the endometrium (lining of the uterus) (see "Patient education: Endometrial cancer diagnosis and staging (Beyond the Basics)")
- Infection or inflammation of the cervix or endometrium
- Clotting disorders such as use of anticoagulant medications, von Willebrand disease, platelet abnormalities, or problems with clotting factors
- Medical illnesses such as hypothyroidism, liver disease, or chronic renal disease

Hormonal birth control — Girls and women who use hormonal birth control (eg, pills, ring, patch) may experience "breakthrough" bleeding between periods. If this occurs during the first few months, it may be due to changes in the lining of the uterus. If it persists for more than a few months, evaluation may be needed and/or a different birth control pill may be recommended. Initially, women using injectable contraception often experience irregular bleeding; over time, bleeding stops occurring in such women. Irregular bleeding is common in women using the contraceptive implant. In women using progestin-releasing intrauterine devices (IUDs), bleeding is often irregular at first. Over time, bleeding becomes lighter; long-term, such women often experience scant bleeding, spotting, or no bleeding. Infections of the cervix (including those caused by chlamydia or trichomoniasis) can cause irregular bleeding, particularly after sexual intercourse. (See "Patient education: Hormonal methods of birth control (Beyond the Basics)".)

Breakthrough bleeding can also happen if a hormonal birth control method is forgotten or taken late. In this situation, there is a risk that the woman could become pregnant if she has sex. An alternate or "back-up" form of birth control (eg, condoms) is recommended if the pill/patch/shot is not taken on time.

Women in the menopausal transition — Before menstrual periods end, a woman passes through a period called the menopausal transition or perimenopause. During the menopausal transition, the timing of periods begins to change as ovulation becomes less regular. While ovaries in perimenopausal women continue to make estrogen, progesterone secretion declines. These hormonal changes can cause the endometrium to grow and produce excess tissue, increasing the chances that polyps or endometrial hyperplasia (thickened lining of the uterus that can progress to cancer) will develop and potentially cause abnormal bleeding. The menopausal transition is a time when women are more likely to experience abnormal uterine bleeding.

Women in the menopausal transition are also at risk for other conditions that cause abnormal bleeding, including cancer, infection, and body-wide (systemic) illnesses. Further evaluation is needed in women with persistent irregular menstrual cycles or an episode of profuse bleeding.

Women in the menopausal transition still ovulate some of the time and can become pregnant; pregnancy itself can cause abnormal bleeding. In addition, women in perimenopause may use hormonal birth control medications, which can cause breakthrough bleeding.

Menopausal women — A number of conditions can cause abnormal bleeding during the menopause. Women who take hormone therapy may experience cyclical bleeding. Any other bleeding that occurs during menopause is abnormal and should be investigated. Causes of abnormal bleeding during menopause include:

- Atrophy or excessive thinning of the tissue lining the vagina and uterus, caused by low hormone levels
- Cancer or precancerous changes (hyperplasia) of the uterine lining (endometrium) (see "Patient education: Endometrial cancer diagnosis and staging (Beyond the Basics)")
- Polyps or fibroids
- Infection of the uterus
- Use of blood thinners or anticoagulants
- Side effects of radiation therapy

ABNORMAL UTERINE BLEEDING EVALUATION

Initial assessment — While taking a woman's medical history, a clinician will review the duration and amount of bleeding; factors that seem to bring the bleeding on; symptoms that occur along with the bleeding such as pain, fever, or vaginal odor; if bleeding occurs after sexual intercourse; whether there is a personal or family history of bleeding disorders; the woman's medical history and medications she is taking; recent weight changes, stress, a new exercise program, or underlying medical problems.

The clinician will perform a physical examination to evaluate the woman's overall health and a pelvic examination to confirm that the bleeding is from the uterus and not from another site (eg, the external genitals, urinary tract, or rectum). During the pelvic examination, the clinician will look for any obvious lesions (cuts, sores, or tumors) and will examine the size and shape of the uterus. He or she will examine the cervix to look for signs of cervical bleeding, and a Pap smear/human papillomavirus (HPV) test may be obtained to screen for cervical cancer (the cervix is at the lower end of the uterus, where it opens to the vagina). (See "Patient education: Cervical cancer screening (Beyond the Basics)".)

Lab tests — In premenopausal women, a pregnancy test is performed. If there is any abnormal vaginal discharge, a cervical test may be performed. Blood tests may also be done to determine if

anemia (low blood count) is present or if there are problems with blood clotting or other body-wide conditions, such as thyroid disease, liver disease, or kidney problems.

Tests to determine ovulatory status — As hormonal irregularities can contribute to abnormal uterine bleeding, testing may be recommended to determine if the woman ovulates (produces an egg) during each monthly cycle.

Endometrial assessment — Tests that assess the endometrium (lining of the uterus) may be performed to rule out endometrial cancer and structural abnormalities such as uterine fibroids or polyps. Such tests include:

Endometrial biopsy — An endometrial biopsy is often performed in women age 45 or older to rule out endometrial cancer or abnormal endometrial growths. A biopsy may also be performed in women younger than 45 years if they have risk factors for endometrial cancer or are felt to be at increased risk for an infection of the endometrium. Risks for endometrial cancer include obesity, chronic anovulation, history of breast cancer, tamoxifen use or a family history of breast cancer or colon cancer. (See "Patient education: Endometrial cancer diagnosis and staging (Beyond the Basics)".)

During the biopsy, a thin instrument is inserted through the vagina and cervix into the uterus to obtain a small sample of endometrial tissue. The biopsy (which often causes temporary severe uterine cramping) can be performed in a health care provider's office without anesthesia. Because only a small portion of the endometrium is sampled, the biopsy may miss some causes of bleeding and other tests are sometimes necessary.

Transvaginal ultrasound — An ultrasound uses sound waves to measure an organ's shape and structure. In a transvaginal ultrasound, an ultrasound probe is inserted into the vagina so that it is closer to the uterus and can provide a clear image of the uterus. The lining of the uterus is evaluated and measured; postmenopausal women normally have a thin endometrial lining; in postmenopausal women with uterine bleeding, if the lining is thicker than 4 or 5 mm, additional evaluation with an endometrial biopsy may be appropriate. Ultrasound cannot distinguish between different types of abnormalities (eg, polyp versus cancer) and further testing may be necessary.

Saline infusion sonography (sonohysterography) — In this test, a transvaginal ultrasound is performed after sterile saline is infused into the uterus. This procedure gives a better picture of the inside of the uterus, and small lesions can be more easily detected. However, because tissue samples cannot be obtained during the procedure, a final diagnosis is not always possible and additional evaluation, often hysteroscopy or dilation and curettage (D&C), may be necessary.

Hysteroscopy — During hysteroscopy, a small scope is inserted through the cervix and into the uterus. Air or fluid is injected to expand the uterus and to allow the physician to see the inside of the

uterus. Tissue samples may be taken. Anesthesia may be used to minimize discomfort during the procedure. Hysteroscopy may be performed in the office or in a same-day surgery in an operating room.

Dilation and curettage (D&C) — In a D&C, the cervix or opening of the uterus is dilated and instruments are inserted and used to remove endometrial or uterine tissue. A D&C usually requires anesthesia. (See "Patient education: Dilation and curettage (D&C) (Beyond the Basics)".)

ABNORMAL UTERINE BLEEDING TREATMENT

The treatment of abnormal bleeding is based upon the underlying cause.

Birth control pills — Birth control pills are often used to treat uterine bleeding that is due to hormonal changes or hormonal irregularities. Birth control pills may be used in women who do not ovulate regularly to establish regular bleeding cycles and prevent excessive growth of the endometrium. In women who do ovulate, they may be used to treat excessive menstrual bleeding. Nonsteroidal anti-inflammatory drugs (NSAIDs; eg, ibuprofen, naproxen sodium) may also be helpful in reducing blood loss and cramping in these women.

During the menopausal transition, birth control pills or other hormonal therapy may be used to regulate the menstrual cycle and prevent excessive growth of the endometrium. (See "Patient education: Heavy or prolonged menstrual bleeding (menorrhagia) (Beyond the Basics)".)

Progesterone — Progesterone is a hormone made by the ovary that is effective in preventing or treating excessive bleeding in women who do not ovulate regularly. A synthetic form of progesterone, called progestin, may be recommended to treat abnormal bleeding. Progestins are usually given as pills (eg, medroxyprogesterone acetate, norethindrone acetate) and are taken once a day for 10 to 12 days each month or taken continuously (every day). In women taking monthly cyclical progestin therapy, vaginal bleeding may occur cyclically. Cyclical progestin therapy does not provide consistent contraception. In women using cyclical progestin therapy and experiencing cyclical bleeding, if the expected bleeding does not occur, the possibility of pregnancy should be explored.

Progestins may also be given in other ways, such as in an injection, an implant, or an intrauterine device (IUD). These treatments are discussed in detail in a separate topic review. (See "Patient education: Heavy or prolonged menstrual bleeding (menorrhagia) (Beyond the Basics)".)

Intrauterine device — An IUD that secretes progestin (eg, Mirena, Liletta, Kyleena, or Skyla) may be recommended for women who have abnormal uterine bleeding. IUDs are T-shaped devices inserted by a health care provider through the vagina and cervix into the uterus. IUDs include an attached

plastic string that projects through the cervix, enabling the woman to check that the device remains in place (figure 2).

Progestin-releasing IUDs decrease menstrual blood loss by more than 50 percent and decrease pain associated with periods. Some women completely stop having menstrual bleeding as a result of the IUD, which is reversible when the IUD is removed. Use of progestin-releasing IUDs allows some women with abnormal uterine bleeding to avoid surgery. (See "Patient education: Long-acting methods of birth control (Beyond the Basics)".)

Surgery — Surgery may be necessary to remove abnormal uterine structures (eg, fibroids, polyps). Women who have completed childbearing and have heavy menstrual bleeding can consider a surgical procedure such as endometrial ablation. This procedure may be performed in a gynecologist's office or in an operating room as a same-day surgery, and uses heat, cold, electrical energy, or a laser to destroy the lining of the uterus. More information about endometrial ablation is available in a separate topic review. (See "Patient education: Heavy or prolonged menstrual bleeding (menorrhagia) (Beyond the Basics)".)

Women with fibroids can have surgical treatment of their fibroids, either by removing the fibroid(s) (eg, myomectomy) or by reducing the blood supply of the fibroids (eg, uterine artery embolization). The most definitive surgical treatment for abnormal uterine bleeding is hysterectomy, or removal of the entire uterus. At the time of hysterectomy, the ovaries may be left in place or removed. Hysterectomy may be performed by conventional laparoscopy or robotic laparoscopy ("belly button surgery"), through the vagina, or by an open incision on the abdomen. More information about these treatments is available separately. (See "Patient education: Uterine fibroids (Beyond the Basics)".)

WHERE TO GET MORE INFORMATION

Your health care provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for health care professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

Patient education: Uterine cancer (The Basics)
Patient education: Dilation and curettage (D&C) (The Basics)
Patient education: Endometrial ablation (The Basics)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

Patient education: Hormonal methods of birth control (Beyond the Basics)
Patient education: Absent or irregular periods (Beyond the Basics)
Patient education: Uterine fibroids (Beyond the Basics)
Patient education: Heavy or prolonged menstrual bleeding (menorrhagia) (Beyond the Basics)
Patient education: Endometrial cancer diagnosis and staging (Beyond the Basics)
Patient education: Chlamydia (Beyond the Basics)
Patient education: Gonorrhea (Beyond the Basics)
Patient education: Cervical cancer screening (Beyond the Basics)
Patient education: Dilation and curettage (D&C) (Beyond the Basics)
Patient education: Long-acting methods of birth control (Beyond the Basics)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

An overview of endometrial ablation
Abnormal uterine bleeding: Management in premenopausal women
Definition, clinical features, and differential diagnosis of polycystic ovary syndrome in adolescents
Dilation and curettage
Overview of the evaluation of the endometrium for malignant or premalignant disease
Approach to abnormal uterine bleeding in nonpregnant reproductive-age women
Differential diagnosis of genital tract bleeding in women
Postmenopausal uterine bleeding

The following organizations also provide reliable health information.

- National Library of Medicine

  (www.nlm.nih.gov/medlineplus/healthtopics.html)

- The American College of Obstetricians and Gynecologists

(http://www.acog.org/)

- The Nemours Foundation

  (www.kidshealth.org, search for menstrual)

- The Hormone Foundation

  (www.hormone.org)

[1-4]

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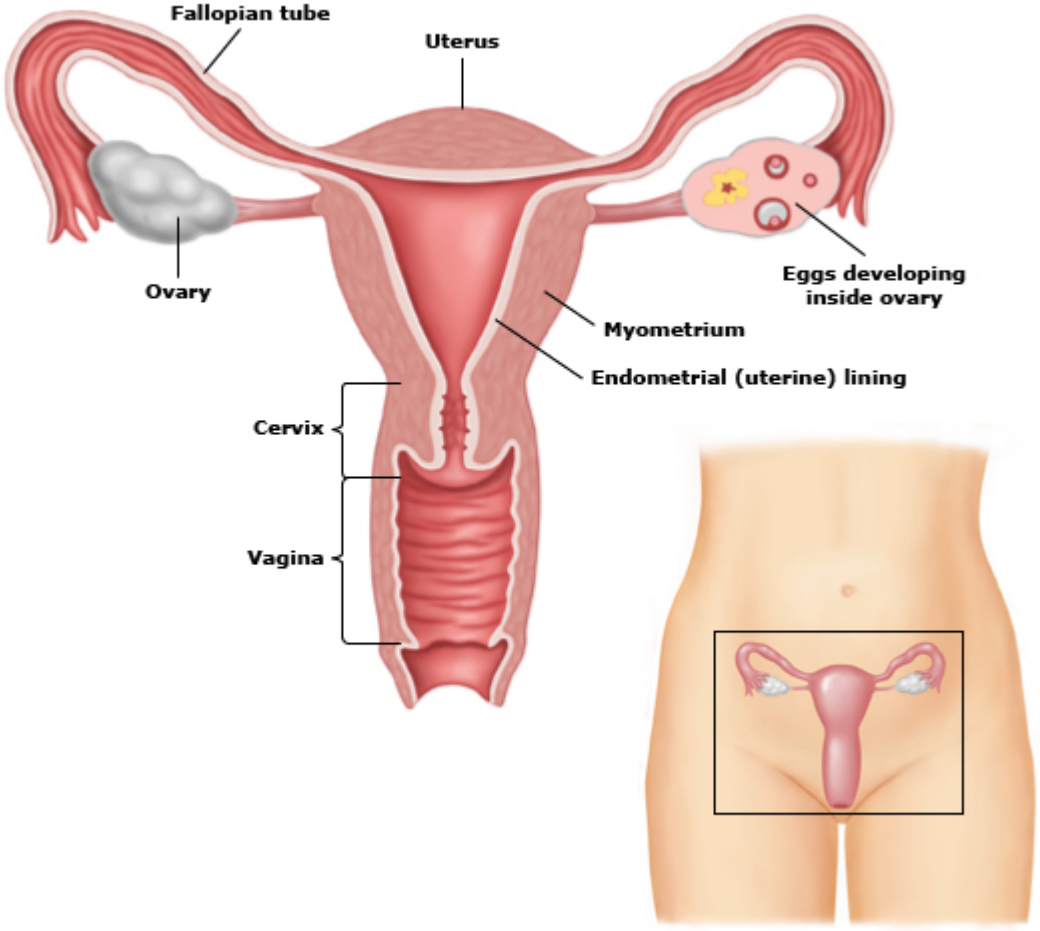
Topic 8401 Version 18.0

GRAPHICS

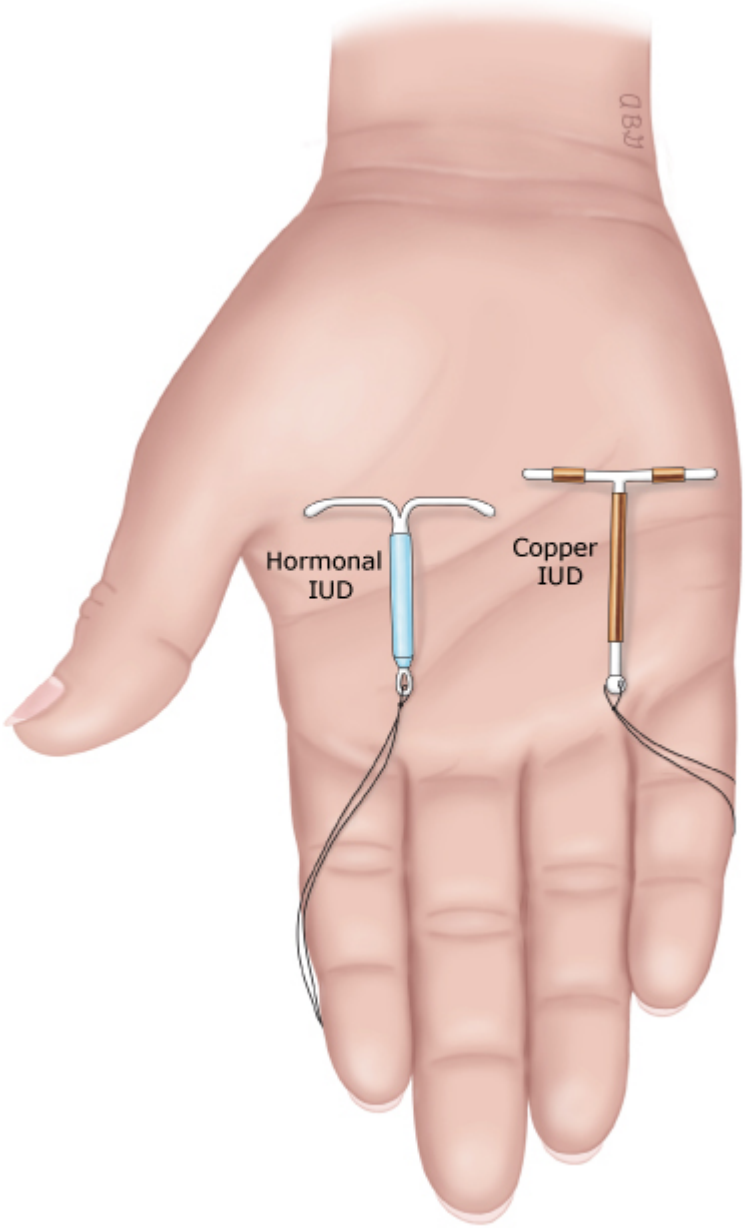
Female reproductive anatomy



These are the internal organs that make up a woman's reproductive system.

Graphic 80271 Version 5.0

IUDs



This picture shows 2 types of IUD. There are different IUDs available. They are placed inside the uterus to help prevent pregnancy.

Graphic 74378 Version 13.0

Contributor Disclosures

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Conflict of interest policy