NICHD

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

National Institutes of Health

Uterine Fibroids

Fast Facts:

Common name:	Uterine Fibroids
Medical name:	Uterine Leiomyoma (pronounced YOU-ter-in lee-oh-my-OH-mah)
Number of women affected:	At least 25 percent of women in the United States have clinically symptomatic fibroids, which means they have symptoms that are typical of fibroids (Crum 1999); estimates suggest fibroids could affect as many as 77 percent of women in the United States (Cramer & Patel 1990).
Common symptoms:	May include heavy periods, bleeding between periods, pelvic pain or "fullness," reproductive problems, including infertility and multiple miscarriages.
Common treatments:	Some women do not receive treatment because they do not have symptoms. Other treatments include: pain medication, medical therapy, and surgery to remove just the fibroid, to cut off the blood supply to the fibroid, or to remove the entire uterus. Doctors are exploring less-invasive surgeries and hormone therapy as other options.
Does this disorder affect fertility/childbearing?	Most women who have fibroids do not have problems with fertility and are able to get pregnant. In some cases, fibroids can prevent a woman from getting pregnant naturally.

Uterine fibroids are the most common, non-cancerous tumors in women of childbearing age. They are the cause of more than 200,000 hysterectomies every year (Easterday et al 1983). They have no known cause and only a few treatment options. Uterine fibroids not only affect the women who have them, but they also impact the partners, spouses, and families of these women, sometimes to a great degree. Despite the fact that they may affect one-quarter of all the women in the United States, fibroids continue to baffle health care providers and scientists.

The National Institute of Child Health and Human Development (NICHD), part of the National Institutes of Health (NIH) within the U.S. Department of Health and Human Services (DHHS), is trying to learn more about uterine fibroids, through research into their causes and treatments. As part of this research, NICHD scientists are exploring genetics, hormones, the immune system, and environmental factors that may play a role in starting the growth of fibroids and/or in continuing that growth. This information could lead to a cure for uterine fibroids that does not involve taking out the uterus. Someday, health care providers may even be able to prevent uterine fibroids from growing at all.

U.S. Department of Health and Human Services
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What are uterine fibroids?

Uterine fibroids are tumors or lumps made of muscle cells and other tissue that grow within the wall of the uterus.

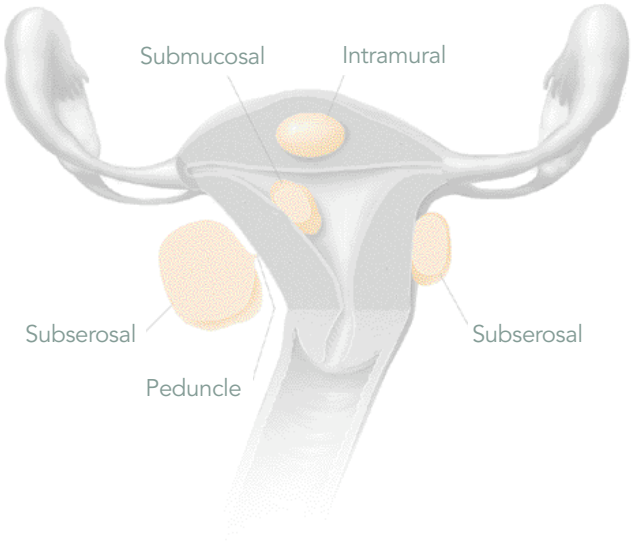
Fibroids may grow as a single tumor or in clusters. A single fibroid can be less than one inch in size or can grow to eight inches across or more. A bunch or cluster of fibroids can also vary in size.

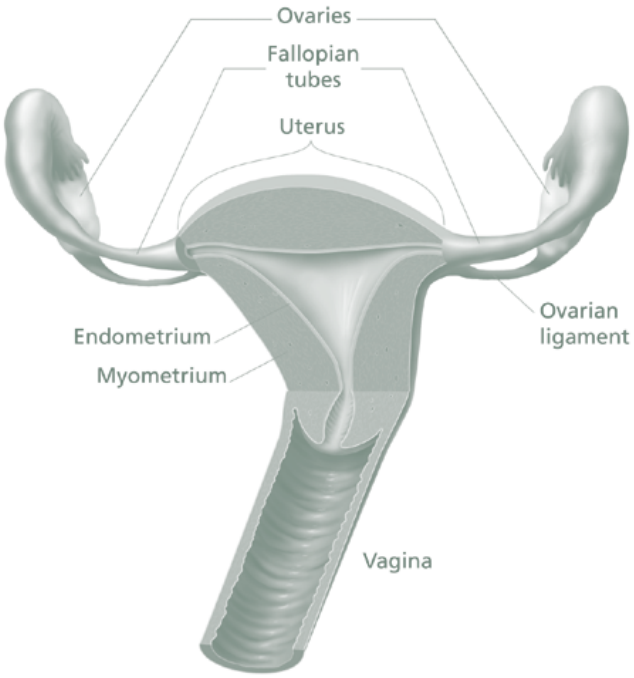
Where do uterine fibroids grow?

Most fibroids grow within the wall of the uterus. Health care providers put fibroids into three groups based on where they grow:

- **Submucosal** (pronounced sub-myou-co-sul) fibroids grow just underneath the uterine lining.
- **Intramural** (pronounced in-tra-myur-ul) fibroids grow in between the muscles of the uterus.
- **Subserosal** (pronounced sub-sir-oh-sul) fibroids grow on the outside of the uterus.

Some fibroids grow on stalks that grow out from the surface of the uterus, or into the cavity of the uterus. These are called *pedunculated* (pronounced ped-un-koo-LAY-ted) fibroids.





What are the symptoms of uterine fibroids?

Many women don't feel any symptoms with uterine fibroids. But fibroids can cause the following symptoms:

- Heavy bleeding or painful periods
- Bleeding between periods
- Feeling "full" in the lower abdomen—sometimes called "pelvic pressure"
- Urinating often (results from a fibroid pressing on the bladder)
- Pain during sex
- Lower back pain
- Reproductive problems, such as infertility, multiple miscarriages, and early onset of labor during pregnancy

What causes uterine fibroids?

Currently, we know little about what causes uterine fibroids. Scientists have a number of theories, but none of these ideas explains fibroids completely. Most likely, fibroids are the end result of many factors interacting with each other. These factors could be genetic, hormonal, environmental, or a combination of all three. Once we know the cause or causes of fibroids, our efforts to find a cure or even prevent fibroids will move ahead more quickly.

Who gets uterine fibroids?

Most of the time, fibroids grow in women of childbearing age. Research studies estimate that health care providers diagnose up to 30 percent (Newbold et al 2000) of women of childbearing age with uterine fibroids; but, because some women show no symptoms of fibroids, as many as 77 percent of women of childbearing age could have the condition, without knowing it (Cramer & Patel 1990). We don't know exactly how many new cases of fibroids occur in a year, nor do we know how many women have fibroids at any one time.

There have also been reports of rare cases in which young girls who have not yet started their periods (pre-pubertal) had small fibroids. Researchers have also found that fibroids sometimes run in families (Treloar 1992).

Researchers now recognize several risk factors for uterine fibroids.

- Current statistics place African American women at three- to five-times greater risk than white women for fibroids.
- Women who are overweight or obese for their height (based on body mass index or BMI*) are also at slightly higher risk for fibroids than women who are average weight for their height.
- Women who have given birth appear to be at lower risk for uterine fibroids.

But, because we don't know what causes fibroids, we also don't know what increases or decreases the risk.

* For more information on the BMI, go to http://www.nhlbi.nih.gov.

Does having uterine fibroids mean that I will be infertile or unable to have children?

Most women who have fibroids do not have problems with fertility and are able to get pregnant. In some cases, fibroids can prevent a woman from getting pregnant through natural methods. However, advances in treatments for fibroids and infertility have greatly improved the chances for a woman to get pregnant, even if she has uterine fibroids.

Researchers are still looking into what role, if any, uterine fibroids play in infertility. Currently, though, there are few answers. One study's results suggest that only submucosal fibroids have a negative impact on fertility (Pritts 2001), but these results are not yet confirmed. The relationship between fibroids and infertility remains a very active research area.

Does having uterine fibroids mean I will need a hysterectomy?

Hysterectomy (removal of the uterus) is not the best option for every woman with uterine fibroids. If you want to have children, then you would want to avoid this treatment. Likewise, if you don't have symptoms of uterine fibroids, or your fibroids are small, you may have better results from pain medications or hormone treatments. Health care providers are also exploring less-invasive surgical treatments for fibroids that save the uterus. See the What are the treatments for uterine fibroids? section of this fact sheet for more information.

In some cases, though, a hysterectomy is the best method of treatment. If you have uterine fibroids and are thinking about hysterectomy, make sure you talk over **all features** of the

surgery with your doctor and your family. Having a hysterectomy means that you will no longer be able to have children. This process cannot be reversed, so be certain about your choice before having the surgery.

Keep in mind that the physical scars of the procedure may heal quickly, but some of the effects of hysterectomy are long-lasting. You may want to talk to women who have had the procedure before you decide to have your surgery. Many health care centers, women's clinics, and hospitals offer support groups for women who have had, or are in the process of having hysterectomies.

How do I know that I have uterine fibroids?

Unless you start to have symptoms, you probably won't know that you have uterine fibroids.

Sometimes, health care providers find fibroids during a **routine gynecological exam**.

- During this exam, the health care provider checks out the size of your uterus by putting two fingers of one hand into the vagina, while applying light pressure to your abdomen with the other hand.
- If you have fibroids, your uterus may feel larger-than-normal; or, if you have fibroids, your uterus may extend into places that it should not.

If your health care provider thinks that you have fibroids, he or she may use imaging technology —machines that create a "picture" of the inside of your body without surgery—to confirm the diagnosis. Some common types of imaging technology include:

- *Ultrasound*, which uses sound waves to form the picture;
- *Magnetic resonance imaging or MRI*, which uses magnets and radio waves to build the picture;
- *X-rays*, which use a form of electromagnetic radiation to "see" into the body; and
- *CT or "cat"-scan*, which takes x-rays of the body from many angles to provide a more complete image.

Sometimes, health care providers use a combination of these technologies.

Sometimes, however, the only way to confirm the presence of uterine fibroids is through surgery.

- *Laparoscopy* (pronounced lapp-are-ah-skoe-pee)—In this procedure, the surgeon makes a small cut into the abdomen, after inflating it with a harmless gas; then, using a small viewing instrument with a light in it, the doctor can look for fibroids.
- Your health care provider may suggest a procedure called a *hysteroscopy* (pronounced hiss-tur-ah-skoe-pee), which involves inserting a camera on a long tube through the vagina directly into the uterus to see the fibroids.

Keep in mind that because these are surgical procedures, you will need time to recover from them. However, the amount of recovery time you'll need may vary.

What are the treatments for uterine fibroids?

Health care providers consider a number of things when recommending treatment for fibroids, including:

Does the woman have symptoms of uterine fibroids?

Does she want to become pregnant?

How large are the fibroids?

What is the woman's age?

If you have uterine fibroids, but show no symptoms or problems, **you may not need any treatment.** Your health care provider will check the fibroids at your routine gynecological exam to see if they have grown. Also, because fibroids rely on hormones to grow, your fibroids may decrease in size during/after menopause.

If you have pain now-and-then or feel mild symptoms, your health care provider may suggest **pain medication**, ranging from over-the-counter remedies to stronger prescription drugs.

Medical Therapy

If you have many symptoms or feel pain often, you may benefit from **medical therapy**—that is, therapy using certain medications rather than surgery. Keep in mind that many medications have side effects, some of them serious.

- One way to reduce symptoms of uterine fibroids is using one of a group of hormones called *gonadotropin releasing hormone agonists (GnRHa)*. These hormones block the body from making the hormones that cause women to menstruate or have their periods. If you have symptoms, have health conditions that make surgery less advisable, and are near menopause or do not want children, you may receive GnRHa therapy to treat your fibroids.
- *Antihormonal agents*, such as mifepristone, also slow or stop the growth of fibroids.
- Medical therapy is often used before a woman has surgery for her fibroids.
- This therapy offers only temporary relief from the symptoms of fibroids; once you go off the therapy, fibroids often grow back.

Surgical Therapy

If you have moderate symptoms of fibroids, **surgery** may be the best form of treatment. Surgery can be a major or a minor procedure. Talk to your health care provider about the different types of surgery, the possible risks of the procedure, and the side effects.

- *Myomectomy* removes only the fibroids and leaves the healthy areas of the uterus in place. This procedure can preserve your ability to have children. Sometimes a laparoscope is used to see inside the abdomen during this procedure. A hysteroscope may be used to see the size, shape, and location of the fibroids inside the uterine lining. The surgeon may also use the instrument to remove the fibroid.
- *Hysterectomy* is used if your fibroids are large, you have heavy bleeding, and you are either near or past menopause or don't want children. Hysterectomy is the only sure way to cure uterine fibroids. In general, recovery time from a hysterectomy is one to two months. Health care providers now have hysterectomy options that differ in how invasive they are. If you are pre-menopausal, talk to your doctor about keeping your ovaries. The ovaries make hormones that help maintain bone health and sexual health. Sometimes surgeons use a laparoscope to see inside the uterus during hysterectomy.
    - *Abdominal hysterectomy* is a procedure that involves a cut into the abdomen to remove the uterus.
    - *Vaginal hysterectomy* is less invasive because the doctor reaches the uterus through the vagina, instead of making a cut into the abdomen. This procedure may not be an option if the fibroids are very large.
- *Uterine Artery Embolization (UAE)*—also called Uterine Fibroid Embolization or UFE—cuts off the blood supply to the uterus and the fibroids, which makes them shrink. Recovery time for UAE is much shorter than for hysterectomy. Because this procedure can affect how the ovaries function and can limit fertility, health care providers do not recommend UAE for women who want to have children.

Are there developing treatments for uterine fibroids?

Currently, researchers are looking into other methods of treating uterine fibroids. Keep in mind that these methods are not yet standard treatments for uterine fibroids, which means your health care provider may not offer them, or your insurance company may not pay for them. But, it's possible that research to confirm the safety and effectiveness of these "experimental" treatments may advance our ability to treat uterine fibroids. These developing treatments include:

- *MRI-guided ultrasound surgery* uses a high-intensity ultrasound beam to send high temperatures to the fibroids to make them shrink. The MRI scanner helps to visualize the fibroid, and the ultrasound sends out sound waves to destroy the fibroid.
- Some health care providers use *lasers* to remove a fibroid or to cut off the blood supply to the fibroid, making it shrink.

Do uterine fibroids lead to cancer?

Uterine fibroids are not cancerous. Fibroids are not associated with cancer; they rarely develop into cancer (in fewer than 0.1 percent of cases). Fibroids do not increase your risk for uterine cancer (Levy et al 2000).

Do uterine fibroids ever go away?

In most cases, fibroids stop growing or shrink once a woman passes menopause. But, this is not the case for all women. Some studies suggests a relationship between hormone replacement therapy or HRT, used to reduce the symptoms of menopause, and uterine fibroids, but the nature of this relationship is still unclear (Schwartz et al 2000). More research is needed in this area.

Is research being done to learn more about uterine fibroids?

The NICHD continues to study and learn about uterine fibroids. The NICHD established a *Reproductive Medicine-Gynecology Program* within its Reproductive Sciences Branch to support research on women's health conditions that aren't cancerous, including uterine fibroids.

In 1998, the NICHD established the *Women's Reproductive Health Research Career Development Centers*. These Centers support obstetricians and gynecologists in becoming researchers, so that they can study topics on women's health. In 2004-2005, the NICHD funded 20 new and competing continuation Centers at institutions throughout the country.

In addition to these Centers, the NICHD's Reproductive Sciences Branch also supports research on uterine fibroids and on other topics that affect women's health, including research on environmental factors, genetics, and diseases that affect the reproductive health of men and women. Long-term goals of this research include understanding how fibroids develop and grow, and finding more effective, conservative treatments. Such findings will help preserve the fertility and reproductive health of all women.

The Division of Intramural Research (DIR) at the NICHD also supports research on these topics. DIR scientists are studying the basic causes of uterine fibroids, as well as the potential of certain drugs for treating them. For more information on DIR research on fibroids, visit *http://fibroids.nichd.nih.gov/general.html*.

In October 1999, researchers from the NICHD joined scientists from the National Institute of Environmental Health Sciences, the DHHS Office of Women's Health, the Society for Women's Health Research, and Wyeth-Ayerst Pharmaceuticals to hold a conference on uterine fibroids. The report, titled *Women's Health and the Environment: The Next Century—Advances in Uterine Leiomyoma Research* (2000), is available at ***http://ehpnet1.niehs.nih.gov/docs/2000/suppl-5/toc.html***.

In addition, the Agency for Healthcare Research and Quality issued an evidence-based report about managing uterine fibroids in 2001. This report reviewed the available literature on the benefits, risks, and costs of uterine fibroid treatments in the United States and provided recommendations for future research (AHRQ 2001). The report is posted at ***http://www.ahrq.gov/clinic/utersumm.htm***.

In February 2005, the DHHS and the NIH sponsored *Advances in Uterine Leiomyoma Research: 2nd International Congress*, in Bethesda, Maryland. This two-day conference, which involved members of the academic, clinical, and medical communities that take part in fibroid research, allowed experts to exchange scientific information, outline research needs, and provide recommendations for future research directions. The report summarizing this meeting is in preparation.

The efforts of the NICHD, NICHD-supported scientists, and other researchers will continue until we know the causes, treatments, and, someday, the cures for uterine fibroids.

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Where can I go for more information about uterine fibroids?

The NICHD supports and conducts research on topics related to the health of children, adults, families, and populations, including uterine fibroids. The mission of the NICHD is to ensure that every person is born healthy and wanted, that women suffer no harmful effects from the reproductive process, and that all children have the chance to fulfill their potential for a healthy and productive life, free of disease or disability, and to ensure the health, productivity, independence, and well-being of all people through optimal rehabilitation. You can contact the NICHD at:

NICHD Information Resource Center
Phone: 1-800-370-2943 (TTY: 1-888-320-6942)
Mail: P.O. Box 3006, Rockville, MD 20847
Fax: (301) 984-1473
E-mail: NICHDInformationResourceCenter@mail.nih.gov
Internet: http://www.nichd.nih.gov

These organizations also provide information about the diagnosis and treatment of uterine fibroids and offer support to women and their families affected by this disease.

- **American College of Obstetricians and Gynecologists (ACOG)** is the nation's leading group of professionals providing health care for women. For more information, contact:

  Phone: (202) 863-2518
  Mail: 409 12th Street, SW, P.O. Box 96920, Washington, DC 20024-2188
  Fax: (202) 484-1595
  E-mail: resources@acog.org
  Internet: http://www.acog.org

- **American Society of Reproductive Medicine (ASRM)** is an organization devoted to advancing knowledge and expertise in reproductive medicine and biology. For more information, contact:

  Phone: (205) 978-5000
  Mail: 1209 Montgomery Hwy., Birmingham, Alabama 35216-2809
  Fax: (205) 978-5005
  E-mail: asrm@asrm.org
  Internet: http://www.asrm.org

In addition, the **National Library of Medicine**, part of the NIH, offers information about uterine fibroids at http://www.nlm.nih.gov/medlineplus/uterinefibroids.html.

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