



# A Patient's Guide to Fibroids

Northwestern Medicine Comprehensive Fibroids Program



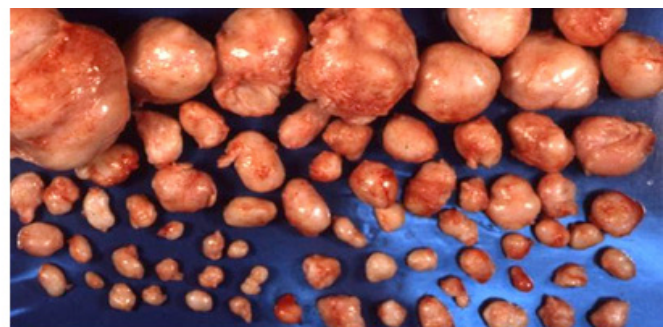
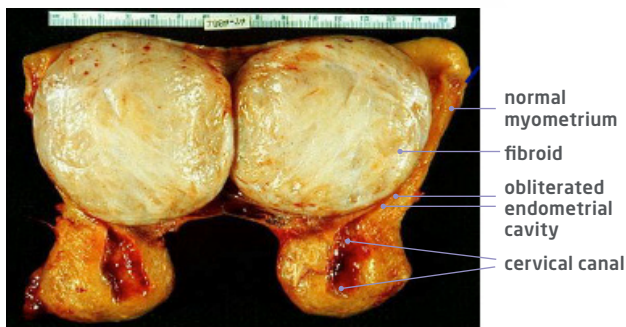
# What are fibroids?

Fibroids are the most frequently seen tumors of the female reproductive system.

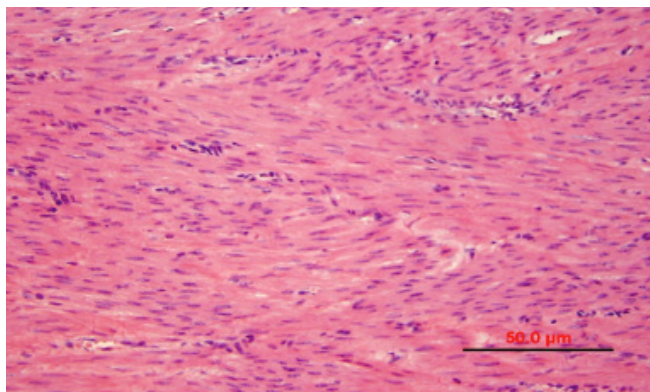
Fibroids, also known as uterine myomas or leiomyomas, are firm, compact tumors that are made of smooth muscle cells and fibrous connective tissue that develop from the uterine muscle (Figure 1). It is estimated that up to 80 percent of women will develop a fibroid sometime during their childbearing years, although only about one-third

of these fibroids cause symptoms such as irregular and excessive uterine bleeding, anemia, recurrent miscarriages and infertility.

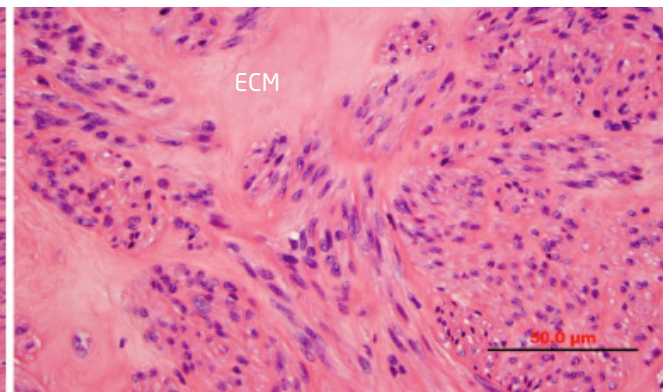
In more than 99 percent of fibroid cases, the tumors are benign (non-cancerous). These tumors are not associated with cancer and do not increase a woman's risk for uterine cancer. They may range in size, from the size of a pea to the size of a soccer ball. Most symptomatic fibroids vary in size from a golf ball to a grapefruit.



Multiple fibroids removed from the same uterus ▲



Normal myometrial tissue ▲



Fibroid tissue ▲

Figure 1. Anatomy and histology of fibroids. Upper left panel: A single large fibroid may occupy the entire uterine body and obliterate the endometrial cavity. Upper right panel: A large number of fibroids of varying size can grow in a single uterus. Lower left panel: Normal uterine muscle tissue contains well-organized smooth muscle cell bundles with relatively small nuclei and abundant cytoplasm. Lower right panel: Islands of disordered smooth muscle cells separated by abundant extracellular matrix (ECM) are prominent in fibroid tissue. Fibroid smooth muscle cells contain relatively large and conspicuous nuclear material (from Bulun Serdar E, New England Journal of Medicine, 2013).

# What causes fibroid tumors?

Each fibroid tumor seems to develop from a single abnormal smooth muscle cell of the uterus. First, the genetic material of a uterine muscle cell mutates and then, the mutated cell multiplies to start a tumor. Interestingly, the sex steroid hormones estrogen and progesterone greatly stimulate the growth of a fibroid tumor.

## **Who is at risk for fibroid tumors?**

Women who are approaching menopause are at the greatest risk for fibroids because of their long exposure to high levels of estrogen. Women who are obese and of African-American heritage are also at an increased risk, although the reasons for this are not clearly understood.

Research has also shown that some factors may protect a woman from developing fibroids. Studies have indicated that women who have had two live-born children have one-half the risk of developing uterine fibroids, compared to women who have had no children.

Scientists are not sure whether having children actually protected women from fibroids or whether fibroids were a factor in infertility in women who had no children. At Northwestern Medicine, we conduct extensive research on this topic and other factors that may affect the diagnosis and treatment of fibroids.



# What are the symptoms of fibroids?

Some women who have fibroids will experience few, if any symptoms, while other women have more severe, disruptive symptoms.

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The following symptoms are most common:

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Heavy or prolonged menstrual periods

Abnormal bleeding between menstrual periods

Pelvic discomfort or pain (caused as the tumor presses on pelvic organs)

Frequent urination

Pain during intercourse

A firm mass, in lower abdomen, which can be felt by the physician

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Because they are very common, fibroids may mask the symptoms and delay the diagnosis of coexisting malignant conditions such as ovarian cancer.

In some cases, heavy and prolonged menstrual periods, or abnormal bleeding between periods, can lead to iron-deficiency anemia, which also requires treatment.

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There are four primary types of fibroids:

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**Submucosal fibroids** develop just under the inner lining of the uterus and grow into the uterine cavity. Although encountered less frequently than other types of fibroids, they often cause severe symptoms such as very heavy and prolonged menstrual periods, recurrent miscarriages and infertility.

**Intramural fibroids** are the most common type and develop and expand inside the uterine wall, which make the entire uterus feel larger than normal (and may cause “bulk symptoms”). Symptoms associated with intramural fibroids are heavy menstrual flow, pelvic pain, back pain, frequent urination and pelvic discomfort.

**Subserosal fibroids** develop from the outer surface of the uterus and continue to grow outward. These typically do not affect a woman’s menstrual flow, but can cause discomfort due to the size and pressure on other organs.

**Pedunculated fibroids** occur when the fibroid grows on a “stalk” in or out of the uterus.

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# How are fibroids diagnosed?

Fibroids are most often found during a routine pelvic examination. This, along with an abdominal examination, may indicate a firm, irregular pelvic mass.

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Your physician will request one or more of the following diagnostic tests to evaluate the size and location of the uterine fibroids:

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**Transvaginal ultrasound (also called ultrasonography):** An ultrasound test using a small instrument, called a transducer, that is placed in the vagina.

**Magnetic resonance imaging (MRI):** A non-invasive procedure that produces a three-dimensional evaluation of an internal organ or structure.

**Hysterosalpingography:** X-ray examination of the uterus and fallopian tubes that uses dye and is performed to evaluate the distortion of the interior of the uterus by a submucosal fibroid and to rule out tubal obstruction.

**Hysteroscopy:** Visual examination of the canal of the cervix and the interior of the uterus using a viewing instrument (hysteroscope) inserted through the vagina.

**Endometrial biopsy:** A procedure in which a sample of tissue is obtained through a tube, which is inserted into the uterus.

**Blood test:** A procedure to check for iron-deficiency anemia if heavy bleeding is caused by the tumor.

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# Treatment for fibroids

Since most fibroids stop growing or may even shrink as a woman approaches menopause, your physician may simply suggest “watchful waiting.” With this approach, your symptoms will be carefully monitored to ensure the fibroids aren’t growing, and that there aren’t any other significant changes or developments.

In women whose fibroids are large or are causing significant symptoms, treatment may be necessary.

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## Your treatment will be determined by:

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Your overall health and medical history

Extent of the disease

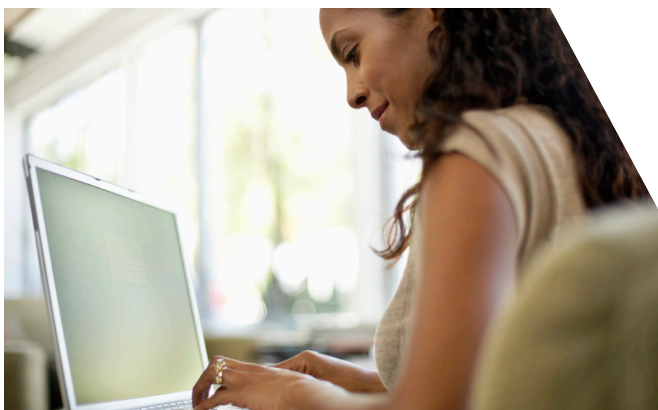
Your tolerance for specific medications, procedures, or therapies

Expectations for the course of the disease

Your opinion or preference

Your desire for pregnancy

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In general, treatment for fibroids may include:

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**Conservative surgical therapy** uses a procedure called a myomectomy. With this approach, physicians will remove the fibroids, but leave the uterus intact to enable a future pregnancy.

**Hysterectomy** involves the surgical removal of the entire uterus affected by many fibroids, which make the removal of individual fibroids technically very challenging. Fibroids remain the number one reason for hysterectomies in the United States.

**Gonadotropin-Releasing Hormone agonists (GnRH agonists)** lower levels of estrogen and progesterone and trigger a “medical menopause.” Sometimes, GnRH agonists are used to shrink the fibroid, making surgical treatment easier.

**Anti-hormonal agents** block the action of progesterone, are very effective in treating fibroids.

**Uterine Artery Embolization (UAE):** UAE is a procedure to treat fibroids without surgery, with a short recovery time. The arteries supplying blood to the uterus are identified and then embolized (blocked-off). The embolization cuts off the blood supply to the fibroids, thus shrinking them. Health care providers continue to evaluate the long-term implications of this procedure on fertility and regrowth of the fibroid tissue.

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# Helping women diagnosed with fibroids

Northwestern Medicine physicians are national leaders in providing accurate diagnosis and leading-edge surgical and non-surgical treatment options to meet your physical and personal needs. A multidisciplinary team at Northwestern Medicine Prentice Women's Hospital joins Serdar E. Bulun, MD and offers women innovative diagnostic testing as well as a personalized combination of treatments. Northwestern Medicine participates in many clinical trials that help us learn more about fibroids and how to best treat them.

If you come to Northwestern Medicine to be treated for fibroids, we will work with you to find an individualized treatment plan that is right for you.

To schedule an appointment or for more information, please call 312.694.6066 or visit [nmfibroids.nm.org](http://nmfibroids.nm.org).





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