

## Fibroids (Uterine Leiomyomata)

### Overview

Uterine Leiomyomata (singular, *leiomyoma*, also known as *fibroids*) are benign tumours arising from smooth muscle cells of the uterus. They are often surrounded by a thin layer of compressed collagen tissue and muscle fibres.

### Classification

Fibroids are described by their location within the uterus. The location and size of a fibroid can vary according to fibroid growth, stage of menstrual cycle and the means used to assess it. Interestingly fibroids that lie in different positions in the uterus have a different genetic make-up, so they probably reflect subtly different diseases.

#### **Intramural Fibroids**

Lie within the wall of the uterus. They may enlarge sufficiently to distort the outside of the uterus or the cavity of the uterus and may even extend from one side to the other.

#### **Sub mucosal Fibroids**

Sub mucosal fibroids chiefly lie beneath the lining (endometrium) of the uterus. They are a particularly potent cause of heavy and irregular bleeding. The extent of the protrusion into the endometrial cavity is described by the European Society of Hysteroscopy Classification system:

1. A type 0 fibroid is completely intra-cavity
2. A type 1 fibroid has at least 50% of its volume in the cavity
3. A type 2 fibroid has at least 50% of its volume in the uterine wall

Type 0 and 1 can be removed by hysteroscopic resection. Those that lie within the muscle of the uterus can often only be removed in part this way and may need laparoscopy.

### **Sub serosal Fibroids**

Lie in the outer layers of the uterus. They may have a narrow base in which case they are described as *pedunculated*. Sometimes they can extend from the outer uterine surface to lie within the broad ligaments, which are the peritoneal coverings covering the fallopian tubes and blood vessels that enter the uterus. These can be difficult to remove.

### **Cervical Fibroids**

Cervical fibroids are located in the cervix or lower body of the uterus.

### **How common are fibroids?**

The overall prevalence is reported between around 40-80%. They are chiefly a problem of reproductive age women. They have not been described in pre-pubertal girls but have been described anywhere from the teens onwards.

### **Why do some women have fibroids and some not?**

1. Having had one or more pregnancies beyond 20 weeks decreases the risk of fibroids.
2. Early onset of periods is associated with an increased risk of fibroids.
3. Generally speaking, oral contraceptives reduce the risk of fibroids.
4. Smoking decreases the risk of fibroids.
5. There appears to be a familial predisposition to fibroids.
6. Alcohol and beer consumption increases the risk of fibroids.
7. Progesterone only Injectable contraceptives, i.e., Depo Provera and Implanon, appear to be associated with a decreased risk of fibroids.
8. It is uncertain whether obesity is associated with an increased risk of fibroids.
9. Although oestrogen exposure can enhance the growth of fibroids, there is no evidence that oestrogen itself causes fibroids to begin growing from the onset.
10. Vitamin D deficiency may in time cause fibroid growth.

### **What does a woman with fibroids notice?**

Fibroids can range in size anywhere from the size of a grain of rice to a term pregnancy. Sometimes surprisingly large fibroids can go unnoticed. As late as the early twentieth century they were occasionally large enough to be fatal through compressing of surrounding vital organs! This is thankfully now unheard of. Nowadays, they are commonly diagnosed in the 4 – 10 cm range. Some women have completely asymptomatic fibroids and some are symptomatic from relatively small fibroids. The crucial factor appears to be where the fibroid lies within the uterus.

## Pelvic Pressure and Pain

The bigger the fibroid the more likely a woman is to experience pressure symptoms. These can be local, i.e., due to pressure on the surrounding structures within the pelvis such as the bowel and bladder, or due to blockage of ureters and the ends of the large or small intestine. Large fibroids are often associated with painful sex and difficulty performing cervical screening. Occasionally fibroids cause acute pain due to bleeding inside the fibroid. Occasionally pedunculated fibroids, i.e., those lying on a small stalk outside the uterus can also twist, again causing acute pain.

## Effects on fertility

The relationship between fibroids and fertility is extremely complex. Roughly speaking, it appears that any fibroid of greater than 3 or 4 cm lying within the uterus (intramural) may affect the chance of pregnancy. They can also be linked to endometriosis and tubal blockage. *Please see separate paper on fibroids and fertility on this website.*

## Increased Uterine Bleeding

Increased bleeding (menorrhagia) is the commonest symptom of fibroids particularly if they lie under the lining of the uterus (sub mucosal). These fibroids may be safely resected in many cases, which may greatly improve periods. Fibroids that lie within the muscle of the uterus (intramural) may also be associated with heavy periods however removal of these fibroids causes a variable improvement in menstrual flow. This probably implies that there is other pathology within the uterus contributing to the problem.

## Fibroids and Pregnancy

This is also a very complex subject. It is often a reflex reaction on the part of the clinician or patient to seek to remove fibroids prior to pregnancy however once again; the relationship between fibroids and pregnancy is extremely complex. Fibroids almost always grow during pregnancy however they do not always cause complications. The kind of complications described have been malpresentation, i.e., baby transverse or breech, early labour, placental accidents and antepartum haemorrhage just to name a few. Removal of small to moderate sized fibroids prior to pregnancy in order to purely prevent pregnancy complications is not always required. Everything depends on the size of the fibroid, the potential for future growth, the age of the patient and moreover the patient's wishes. If pregnancy complications have previously occurred with fibroids, the case for removal is stronger. Recommendations need to be made on a case by case basis.

## Diagnosis of Fibroids and Their Positions

The best test for assessing sub mucosal fibroids is still hysteroscopy under general anaesthetic. Ultrasound scan and MRI scanning are also very useful, but ultrasound is occasionally misleading and is very operator dependent.

## Ultrasound Scan

Ultrasound scan is the most commonly used test. It can be combined with saline infused sonography (SIS) offered by specialised gynaecology ultrasound providers to give more exact information about fibroid position.

## Magnetic Resonance Imaging (MRI)

This is probably the best way to assess the size and location of multiple uterine fibroids and can distinguish between fibroids, and the similar looking adenomyoma. *MRI scans may help distinguish, in combination with blood tests, between benign and malignant fibroids.* This is reserved for select cases and may be expensive.

Reference: A. Goto, S. Takeuchi, K. Sugimura, T. Maruo. International Journal of Gynecological Cancer, Volume 12, Page 354, July 2002

## CT Scanning

CT scanning is of little clinical use in assessing fibroids in most cases although fibroids are occasionally found incidentally on a CT scan performed for other reasons.

## Are All Fibroids Benign?

Malignant fibroids are called **sarcomas**. An often quoted risk of sarcoma is around 1:1000 however in post-menopausal women who present with a pelvic mass, pain and bleeding, the risk may be higher.

It is important to realise that the chance of sarcoma in any given fibroid is low but is never zero. Ultimately the diagnosis is made upon pathology, i.e., a segment of fibroid is removed and placed under the microscope. Sometimes mild sarcomas are difficult to distinguish from completely benign fibroids and second opinions will be necessary. In skilled hands, ultrasound is a good indicator of benign versus malignant fibroids. A combination of blood tests (LDH) MRI scanning is probably the best non-invasive means of distinguishing between benign and malignant fibroids. The two are different diseases- that is; fibroids do not “become” malignant but are malignant from the outset.

## Do All Fibroids Need to Be Removed?

The short answer is no. Fibroids are very commonly diagnosed incidentally and as ultrasound scanning becomes more sophisticated and the images more detailed, smaller fibroids will be diagnosed. These often cause a great degree of anxiety. Patients often ask me if I can guarantee fibroids are benign and the answer of course is NO. Fibroids must be assessed on a case-by-case basis. Generally speaking, if a completely asymptomatic fibroid reaches the umbilicus (belly button), we recommend removal or hysterectomy, simply because fibroids of this size can cause significant problems by direct pressure effects within the pelvis. Submucosal fibroids are important to remove for fertility reasons.

