

# CELLULAR MEDICINE and **UTERINE FIBROIDS**

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Cellular Medicine and Uterine Fibroids

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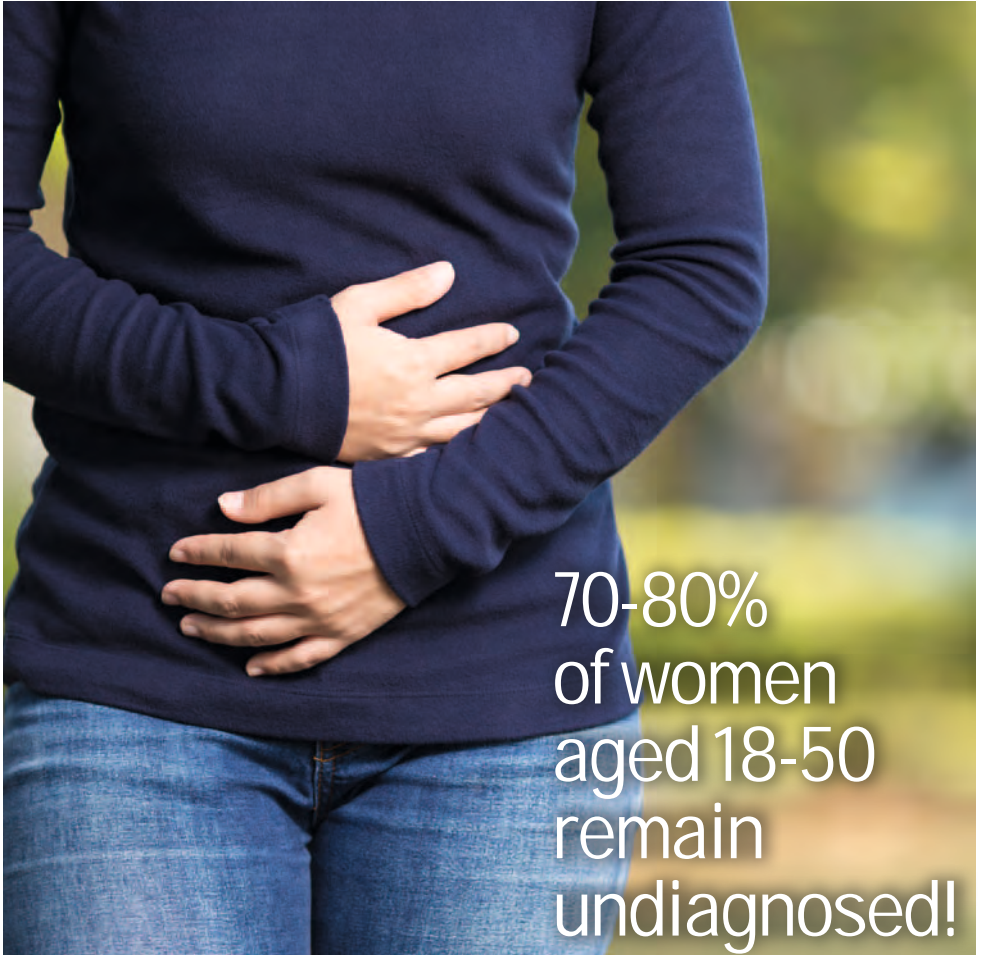
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70-80%  
of women  
aged 18-50  
remain  
undiagnosed!

## Cellular Medicine and Uterine Fibroids

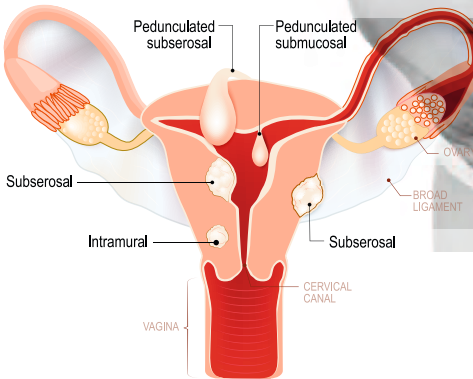
If you suffer from painful menstruation, pelvic pain, or bleeding between periods, this is a good reason to see your doctor and check whether you have developed fibroids in the uterus. Fibroids can occur at any age starting from late teens, and approximately 20-50% women aged 18-50 get diagnosed with

fibroids. However, by some estimates as much as 70-80% women in this age group remain undiagnosed. The best protection against developing and also in managing uterine fibroids is by applying effective and safe measures that support the body in fighting fibroid problems.

# What are uterine fibroids?

The term 'uterine fibroids' describes a non-cancerous growth of muscle and connective tissue that forms rubbery knots which are distinct from the surrounding tissue in the uterus (womb). This fibrous mass, also known as leiomyoma or myoma, mostly originates from smooth muscle cells lining the wall of the uterus. Researchers don't exactly know what causes fibroids, but they think that each myoma tumor occurs as a result of a formation of abnormal muscle cells in the uterus. These cells tend to divide rapidly and develop into a lump with help of the female sex hormone estrogen, which tends to speed up the growth of many things in the body.

## Types of uterine fibroids



The uterine fibroids vary greatly in size, from being microscopic to sometimes as large as 8-10 inches (20-25 cm) in diameter. They may remain small for a long time and a woman may not be even aware

of having them, then a sudden growth spurt can cause a variety of symptoms.

Most often fibroids grow within the thickest middle layer of the uterine smooth muscles (Intramural). Sometimes they can form on the outside of the uterus just under the outer covering (serosa) and are called subserosal fibroids. Fibroids can also occur within the thin innermost layer of the uterus called the endometrium, these are called submucosal fibroids.

Most women diagnosed with a fibroid growth are concerned about developing cancer. Luckily, in most cases fibroids do not lead to uterine cancer, however without pathological examination it is difficult to evaluate whether the uterine mass is benign or cancerous. Fibroids tend to shrink naturally after the menopause.

## Symptoms associated with fibroids

Many women may not be aware of having fibroids as they can go undetected for a long time without causing any symptoms. Concerns about fibroids usually start when special symptoms appear which may surface at different times and include:

During or between menstruation:

- Painful and heavy menstruation sometimes with blood clots
- Periods that last longer than normal
- Bleeding that occurs between periods

Feeling of pressure and abdominal discomfort:

- Fullness in the lower abdomen
- Pelvic pain
- Bloating and weight gain
- Frequent and sometimes difficult urination
- Larger fibroids may cause constipation
- Painful intercourse



## Most frequent health issues related to fibroids

- **Anemia:** Heavy menstruation causes iron and nutrient loss, which may lead to anemia.
- **Complications in pregnancy:** Larger fibroids may cause difficulty in getting pregnant. In women who are pregnant fibroids may induce preterm labor or cause an abnormal attachment of the placenta, which increases the chance of miscarriage or require deliveries with Caesarean section. Large fibroids also pose a higher risk of sustained post-partum bleeding which can be dangerous.
- **Constipation and urinary problems:** Sudden and rapid growth of fibroids can obstruct the digestive and urinary systems, causing difficulty or pain with bowel movements such as constipation or cause increased urinary frequency and incontinence. Conversely, fibroids may interfere with emptying the bladder by causing obstruction or contribute to recurrent urinary tract infections.
- **Pain and other issues:** Fibroids are attached to the uterine wall by a stalk. They can be twisted around the stalk (torsion) causing excruciating pain, nausea, vomiting, abdominal infection and internal bleeding and require emergency surgery.



## How fibroids are diagnosed

- Larger fibroids can be diagnosed by a physician through pelvic examination.
- Smaller and symptomatic fibroids may need other tests such as ultrasonography, MRI, CT scans or pelvic X rays.
- A specific test known as hysterosalpingogram involves injection of a dye in the uterus to distinguish the size and number of fibroid tumors within the uterine wall.
- Occasionally, exploratory surgeries may be required for a confirmed diagnosis.



## Most common risk factors for developing fibroids

Although the exact cause of uterine fibroids is yet unrecognized, certain risk factors increase the chance of developing this problem.

**Age:** The chances of developing fibroids increase with age and the peak age at diagnosis tends to be late 30s to early 50s. Fibroids usually shrink after menopause.

**Ethnicity:** African American women are at an increased risk of developing fibroids that are larger and develop at a younger age than white, Hispanic and Asian women. Recent studies have also shown that the fibroid growth rates are equalizing between Caucasian and African American women under the age of 35.

**Hormones:** Earlier onset of menstruation increases the chances of fibroids due to a woman's extended exposure to the female hormone estrogen. Similarly, women with fewer or no pregnancies, late age at first birth, and early use of oral contraceptives between ages 13-16, are more likely to develop fibroids. Ironically, oral contraceptives later in life are not known to increase such risk and are also used as part of the fibroid treatment.

**Diet and Lifestyle:** Consumption of red meat, obesity, stress, and a chronic deficiency of vitamins A and D have been also shown to increase the chances of developing fibroids.

**Family history:** Having a blood relative with fibroids triples the chance of a woman developing fibroids.



# What conventional medicine offers for this problem

Current medical treatments focus on alleviating symptoms associated with fibroids, such as heavy bleeding, related anemia, pain and painful periods. Some doctors do not recommend early intervention and rather advise just to wait and observe whether fibroids grow further. However, in cases of large fibroids causing severe symptoms a surgery is recommended, even removing the uterus (hysterectomy). This is the number one reason why women in the United States have hysterectomies (about 200,000 a year).

## ***Medical management of painful menstruation, anemia:***

- Pain management usually starts with non-steroidal anti-inflammatory drugs (NSAIDs) such as acetaminophen (Tylenol), ibuprofen (Advil, Motrin), and naproxen (Aleve).
- Excessive bleeding is sometimes treated with the medicines that promote blood clotting (antifibrinolytics). Although these drugs reduce heavy bleeding within hours, they also — especially if taken with hormonal contraceptives — show a tendency to cause blood clots and can result in serious strokes.
- In cases of severe anemia, iron and multivitamin oral or intravenous supplements are given.

## ***Hormonal treatments:***

- Contraceptives containing both estrogen and progesterone or progesterone only pills are given to control menstrual bleeding, as well as cramps during menstruation. It may take a few weeks to months to see the effects. It is important to know that hormonal treatments have other serious side effects since they may increase the risk of endometrial cancer, deep vein thrombosis and stroke.
- Certain drugs that modify actions of the hormone progesterone are becoming the first line of treatment for fibroids. These drugs help in shrinkage of fibroids and reduce bleeding.
- Agonists of gonadotropin-releasing hormone (GnRHa). This hormone is secreted by the pituitary gland in the brain and stimulates the synthesis and secretion of two intermediate hormones affecting the menstrual cycle—FSH and LH—that in turn regulate the production of estrogen and progesterone by the ovary. It has been shown that synthetic derivatives of GnRHa (i.e. Lupron, Sinarel) can decrease the volume of existing fibroids and are often used before surgery

to shrink a tumor. However, these drugs increase the risk of recurrence because they obscure smaller fibroids that re-grow when the effects of the GnRHa wear off. Also, they are associated with side effects which include menopausal symptoms, thinning of the bones, hot flushes, dry vagina, headaches, depression, loss of libido and night sweats. As such, GnRha treatment is not recommended for longer than 3-6 months.

**Surgery:** Women who have larger fibroids and those who experience pressure symptoms as a result have a choice of various surgical treatments.

- **Myomectomy:** Removal of fibroids through different types of abdominal surgery is used by women who wish to get pregnant. However, there is about 25% chance of recurrence of fibroids after the surgery.
- **Uterine artery embolization:** This is a specific procedure that cuts off blood supply to a fibroid in order to shrink it. However, it is never a good idea to block off arteries in the body. This procedure does not provide a long-lasting solution as it has a high rate of fibroid recurrence. Also, it is not recommended for women who may want to become pregnant.
- **Endometrial ablation:** The inner lining of the uterus (the endometrium) is destroyed using laser. After this procedure it is difficult to get pregnant and there is a higher chance of pregnancy occurring outside the uterus (ectopic pregnancy), which is a medical emergency.
- **Hysterectomy:** This is the surgical removal of the uterus, while leaving the ovaries and cervix. However, this is a major surgery requiring longer recovery time (4-6 weeks) and is associated with many complications.

# Natural prevention and management of uterine fibroids

The risk of developing uterine fibroids can be significantly reduced using natural approaches that don't involve going under the knife, cutting off the blood supply in your arteries, or going into medical menopause. A good diet supplemented with the proper nutrients, as well as a healthy lifestyle, play a major role in the prevention of fibroids in all women and especially those at a higher risk of fibroids.

## ***Avoid pro-inflammatory food containing additives and artificial hormones:***

Non-organic meat and dairy are contaminated with preservatives, chemicals, and hormones, which have been linked to tumor growth in numerous studies. It is prudent to avoid red meat (nitrates), processed foods, refined sugar and carbohydrates, and alcohol (maybe with the exception of occasional red wine) all of which have been linked to inflammation. Inflammation can lead to weight gain, diabetes, and hormonal imbalances. On the other hand, drinking lots of water can help detoxify the body and curb inflammation. Drinking unsweetened tea is also good, especially green, ginger and chamomile tea.

Organically grown green vegetables, such as lettuce, kale, and spinach have anti-inflammatory properties that can help prevent fibroids from growing. Green vegeta-

bles are also high in vitamin K, which can help control menstrual bleeding and prevent blood clotting. The fiber in green vegetables can further help reduce inflammation and promote an alkaline environment that makes it hard for tumors to grow. A recent study conducted in China showed that a greater intake of cruciferous vegetables, tomatoes and apples may reduce the incidence of uterine fibroids.

***Your lifestyle is important too:*** Since imbalanced estrogen levels have been linked to fibroids it is important to take steps to reduce their effects. One is by limiting the exposure to estrogenic-like chemicals contained in pesticides, many beauty products, plastic containers, even household cleaning products. Stress can also contribute to hormonal imbalance and has been linked to fibroids. Stress causes the adrenal glands to release a hormone called cortisol, which can increase fatty tissue, which in turn can store estrogen. Incidentally, higher body fat has been associated with the development of fibroids. Cortisol can also contribute to estrogen dominance by decreasing progesterone. Therefore, stress management, an intake of nutrients supporting optimum function of the adrenals (vitamin C, B vitamins) and maintaining a healthy body weight can help in fibroid problems.

**Supplementation with specific micronutrients is important:** Scientific studies show that many micronutrients with anti-inflammatory properties and specifically selected nutrient combinations supporting healthy cell growth and female metabolism are beneficial in preventing and reducing the growth of fibroids.

### **Phytobiological compounds**

Many dietary plant compounds that can interfere with key cellular mechanisms involved in tumor growth have been tested as therapeutic agents in the treatment of fibroids (Islam et al., 2014). Among these, polyphenols found in turmeric (curcumin), ginger and green tea are important in supporting the body in eliminating toxins and fighting inflammation. Green tea extract, specifically epigallocatechin gallate (EGCG), could inhibit the growth of leiomyoma cells and induce their death by a natural process of apoptosis (Zhang et al., 2010). Moreover, in a pilot clinical trial on 39 women with fibroids, the supplementation with EGCG showed significant shrinkage in fibroid size, reduction in bleeding and improvement in anemia. The study also reported significant improvement in other symptoms related to fibroids and improved quality of life (Roshdy et al., 2013). Also, curcumin can induce cell death in leiomyoma cells, which is important in shrinking fibroids (Malik et al., 2009). Grape polyphenol (resveratrol) demonstrated anti-fibroid effects in leiomyoma cells (Catherino et al., 2011; Christman et al., 2012). The potency of these nutrients can increase when they are combined together with a complex containing cruciferous plant extracts. Active compounds in cruciferous vegetables, such as Indole-3-carbinol, have anti-inflammatory properties and can promote the normal, healthy growth of cells lining the uterus.



## **Micronutrients support healthy female metabolism**

For maintaining a healthy metabolism it is important for women to alleviate hormone imbalances and reduce estrogen dominance in the body in a natural way, such as by using nutrients with anti-estrogenic properties. Some of them, such as genistein and daidzein are contained in soy. These phytoestrogens do not have hormonal properties themselves, but they can block the biological effects of estrogen by binding to specific sites on the cells that respond to estrogen. Studies show that genistein at higher concentrations can decrease human uterine leiomyoma cell proliferation and other metabolic pathways associated with fibroids (Moore et al., 2007; Di et al., 2008).

Vitamin C, together with B vitamins, are also important in supporting healthy adrenal function and hormonal balance. Kelp, as a natural source of iodine, helps in supporting thyroid function. This small but powerful gland regulates the body's metabolism, including our hormonal and immune systems. Poorly functioning thyroid has been associated with the development of fibroids. Other nutrients important in women's health issues also include vitamin E and selenium which support immune system function: our best defense against abnormal cells in the body.



## **Micronutrients supporting healthy cell growth**

All cells that build the body, including the uterus, regenerate and die in an orderly fashion. All of them are surrounded by a fibrous connective tissue built of collagen which forms a strong barrier confining cellular growth and expansion. Under healthy conditions this barrier can be broken down in a controlled and balanced way by specific enzymes. Micronutrients such as vitamin C, lysine, green tea extract and others are important in controlling the activity of these collagen-digesting enzymes. They also support the optimum formation of collagen, support cell metabolism and protect cells against damage by free radicals. All these are required in order to maintain orderly, controlled cell multiplication and prevent their overgrowth (Roomi et al., 2009).

## **Omega 3 Fatty Acids**

The essential omega fatty acids found in fish oil have shown to be effective in reducing inflammation and restoring proper hormone balance within the body.

## **Vitamin D**

Vitamin D regulates cell proliferation, inhibits the formation of fibrosis in the uterine smooth muscles, inhibits excessive blood supply (angiogenesis), and induces apoptosis in uterine fibroids. A widespread deficiency of vitamin D has been known to increase the incidence of uterine fibroids. Clinical trials focusing on the effects of vitamin D supplements in women with uterine fibroids have reported significant benefits such as symptom reduction, shrinkage of fibroids and reduced progression, thereby decreasing the need for surgical treatment after vitamin D supplementation (Sabry et al., 2013; Ciavattini et al., 2016).

## **Vitamin A**

Supplementation with vitamin A may also reduce the growth of uterine fibroids. Vitamin A can be produced in the body from beta-carotene according to metabolic need, thus excess vitamin A levels may be avoided.

## **Vitamin B-complex**

Taking B vitamins is a good way to make sure your cells have the energy they need to fight off toxins and inflammation. B vitamins in combination with magnesium can also aid in the reduction of menstrual cramps.





## What is Cellular Medicine?

The fundamental principle of Cellular Medicine relates to the smallest unit in the human body, the cell. Health and disease are determined at the level of the billions of cells which make up our bodies and not, as previously assumed, at the level of organs. Cells are the smallest and most important units in the body. They make up the organs and require a constant supply of specific bio-energetic nutrients to perform a huge number of biochemical reactions. Chronic deficiencies of one or more of these cellular nutrients leads to cellular malfunctioning and disease. Because of this, providing the cells with an optimum daily supply of vitamins and other essential nutrients is the key to the successful prevention of and defense against deficiency symptoms.

## What are cellular nutrients?

The human body is composed of billions of cells which need a constant supply of biological catalysts for many different biochemical reactions. From the scientific standpoint of Cellular Medicine, these substances are considered together under the umbrella term 'cellular nutrients', a phrase which embraces vitamins, minerals, trace elements, certain amino acids, biologically active plant substances (phytobiologicals) and other micronutrients important for normal metabolism. When available in the right quantities and proportions, they make a major contribution to the healthy functioning of our cells and thus of our bodies.



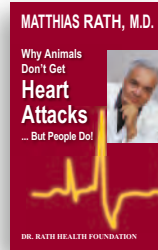


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## Conclusion

Uterine fibroids are the primary cause for more than 200,000 hysterectomies performed in the United States every year, with an annual cost exceeding \$6bn. In the United Kingdom approximately 55,000 hysterectomies are performed each year, of which around one-third are due to fibroids. Surgical treatment for uterine fibroids cost NHS England £119 million in 2015 alone. Women who suffer from fibroids experience a significant reduction in their quality of life due to widespread symptoms. It is important to prevent their occurrence through a healthy diet, with appropriate micronutrient supplementation and other lifestyle modifications.

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# DR. RATH RESEARCH INSTITUTE

The Dr. Rath Research Institute in Cellular Medicine is located in the Silicon Valley, in California. The Institute is staffed with experts in the fields of medicine, biochemistry, and nutrition. Here, world-class molecular biology, biochemistry scientists conduct innovative research utilizing the principle of nutrient synergy, to investigate the role of micronutrients in preventing and treating various aspects of human health and diseases.

Researchers at the Dr. Rath Research Institute are pursuing breakthrough research based on Dr. Rath's discoveries in heart disease, cancer, infectious diseases, and other aspects important in human health. Their scientific work has been widely recognized and published in numerous scientific journals and other media around the world.



# RESEARCHERS



## **Matthias Rath, M.D.**

Dr. Rath is a world-renowned physician and scientist, who is known for his pioneering research in natural and cellular health. He is the founder of the scientific concept of Cellular Medicine - the systematic introduction into clinical medicine of the biochemical knowledge of the role of micronutrients as biocatalysts in a multitude of metabolic reactions at the cellular level.



## **Aleksandra Niedzwiecki, Ph.D.**

Currently the Director of Research at the Dr. Rath Research Institute, Dr. Niedzwiecki is a leading biomedical researcher in the development of nutrient synergy approaches in various aspects of health and disease. Her work in the areas of cardiovascular health and cancer has won her recognition for her research into the biochemical link between disease and nutrients.



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Dr. Bhanap earned her medical degree from the University of Nagpur, India. Prior to joining Dr. Rath's Research Institute, she was a practicing physician and has worked in hospitals as well as at outpatient medical practice. She is certified in Clinical Trials Design and Management from the University of California, Santa Cruz. She has conducted many educational outreach programs across the US presenting Dr. Rath's research to patients and health practitioners.

### Disclaimer:

This booklet is not intended as a substitute for the medical advice of a physician. The reader should regularly consult a physician in matters relating to his or her health and particularly in respect to any symptoms that may require diagnosis or medical attention.



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