

# Botanical Solutions for Acute and Chronic Pelvic Pain in Women



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# Table of Contents

<b>Introduction.....</b>	<b>1</b>
<b>Endometriosis: Possible causes.....</b>	<b>1</b>
Immune system .....	1
Environmental factors .....	2
Known hormone disrupting chemicals.....	2
Sunscreen and endometriosis .....	2
<b>Endometriosis and estrogen.....</b>	<b>2</b>
<b>Alternative management .....</b>	<b>3</b>
Immune modulation .....	3
Alleviating inflammation .....	3
Modulating the influence of estrogen.....	4
Detoxification.....	4
Diet and endometriosis.....	4
<b>Treating pain relief .....</b>	<b>4</b>
Acute pain .....	4
Chronic pain .....	5
<b>Botanicals and endometriosis.....</b>	<b>5</b>
Turmeric .....	5
Green tea .....	6
<b>Chronic endometriosis sample treatment plan .....</b>	<b>6</b>
<b>Primary dysmenorrhea .....</b>	<b>7</b>
Prevention.....	7
Ginger and dysmenorrhea .....	7
Valerian and dysmenorrhea.....	8
Cramp bark and Black haw .....	8
Fennel essential oil .....	9
Black cohosh .....	9
Others .....	9
<b>Chronic dysmenorrhea sample treatment plan .....</b>	<b>9</b>
<b>Conclusion .....</b>	<b>10</b>
<b>Contributor.....</b>	<b>10</b>

# Introduction

Menstrual cramps and endometriosis are two of the most common gynecologic problems in reproductive aged women. There is a robust historical tradition of treating acute and chronic pelvic pain with plants. Modern research provides both some evidence, as well as a theoretical basis for using these plants in clinical practice.

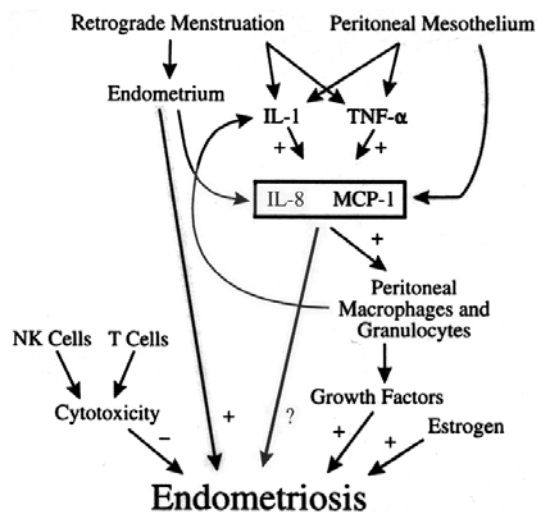
With the right botanical regimen, women can find much needed relief from painful symptoms without the harsh side-effects associated with more traditional medications. There are many botanicals that can be used to treat these issues. Some of them include ginger, turmeric, cramp bark, valerian, black cohosh, pine bark, chaste tree, dandelion root, prickly ash, motherwort, turmeric, and green tea.

Learn how these herbs affect physiological health and how the right combinations can produce effective and long-lasting relief from common gynecologic issues.

## Endometriosis: Possible causes

### *Immune system*

The possible causes of endometriosis are vast. Some theories say that this disease is related to the immune system, caused by abnormalities in both cell-mediated and humoral components, increased cytokine production or decreased phagocytic activity. Interleukin 6 is thought to upregulate the endometriotic production of a protein called Endo I (endometriotic epithelial cells) and decrease natural killer cells. High concentrations of growth factors, cytokines and an increase in angiogenesis can lead to endometriosis lesions. These lesions then produce inflammatory ingredients and oxidative compounds, which, in turn, stimulate new endometrial cell growth.



## *Environmental factors*

Environmental factors might also be to blame as animal models and some human data suggest that chemicals may play a role in the development of this disease. One chemical of particular concern is dioxin. Belgium has the highest dioxin pollution in the world, and has the highest incidence of endometriosis and the highest prevalence of severe endometriosis. No epidemiological study to date definitively links these elevated rates to one class of chemicals, although estrogen-like compounds have been suspected.

## *Known hormone disrupting chemicals*

Some chemicals that are known to disrupt hormone levels include dioxins, PCBs, phthalates, BPA, pesticides, formaldehyde, solvents and cadmium. While there has not been much research linking these hormone-disrupting chemicals to endometriosis, several studies have identified that these chemicals have an effect on fertility, a clue that these chemicals could have effects on hormonal issues associated with endometriosis.

## *Sunscreen and endometriosis*

In this study, concentrations of five Benzophenone derivatives were measured in urine collected from 625 women in Utah and California. The Benzophenone derivative in this case was 2,4-dihydroxybenzophenone (2,4OH-BP), a common ingredient found in different personal care products for the protection of the skin and the hair from ultraviolet radiation. The association of urinary concentrations of BP derivatives with an increase in the odds of a diagnosis of endometriosis was examined in 600 women who underwent laparoscopy or pelvic magnetic resonance imaging from 2007 to 2009. In the end, the study showed that women with 25% of concentrations of 2,4OH-BP in their blood had significantly higher rates of endometriosis.<sup>1</sup>

# **Endometriosis and estrogen**

Endometriosis is a hormonally responsive condition. Endometriotic lesions contain hormone receptors, including estrogen, progesterone, and androgen receptors. Estrogen receptor levels in endometriosis are more than 100 times higher than normal endometrial tissue, and high levels of this estrogen receptor beta have been shown to suppress alpha expression. A high estrogen receptor beta to estrogen receptor alpha ratio in those same endometriotic stromal

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<sup>1</sup> Environ. Sci. Technol. Publication Date (Web): March 14, 2012

cells is associated with suppressed progesterone receptor and increased cyclo-oxygenase-2 levels, contributing to progesterone resistance and a possible increase in inflammation. Adding progesterone in the luteal phase (the normal menstrual cycle phase in which progesterone is produced) can help reduce this inflammatory response.<sup>2</sup>

## Alternative management

There are general considerations that must be addressed when treating endometriosis. Therapies used should help with immune modulation and the reduction of inflammation. They should decrease the influence of estrogen, enhance liver function and detoxification, provide pain and symptom relief, and help with psychosocial influences and consequences. Therapies should also help prevent the progression of disease, decrease oxidative damage, and inhibit growth factors. Using anti-angiogenesis agents to interfere with extra angiogenesis that occur in endometriosis can also provide some relief for this disease.

### *Immune modulation*

A systematic approach to addressing these issues can be achieved with botanical treatments. Boswellia and Omega-3 oils can help decrease cytokines and increase natural killer cells. Astragalus, coriolus versicolor and withania somnifera can help increase phagocytosis. Flavonoids, especially pine bark, vitamins E, C and A as well as selenium, carotenes and melatonin, are effective antioxidants that can help treat this disease. Plants like silymarin, quercetin and soy can inhibit growth factors.

### *Alleviating inflammation*

Some common botanicals that can help reduce inflammation include zingiber officinalis, scutellaria baicalensis, turmeric, and quercetin.

Ginger is perhaps one of the best anti-inflammatories and incredibly useful in the treatment of menstrual cramps. That's because ginger works by blocking the transmission of COX-2 and helps treat pelvic inflammation and congestion. While it is most commonly used to treat anxiety and stress disorders, ginger is also an effective anti-inflammatory. Turmeric is perhaps the most robust anti-inflammatory, and the most widely used. Flavonoids in general, including quercetin, can help reduce inflammation. And though it is not a botanical, high EPA fish oil provides many useful anti-inflammatory effects.

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<sup>2</sup> Copyright Dr. Marchese

## *Modulating the influence of estrogen*

Many ingredients can modulate estrogen metabolism, including diindolylmethane, soy, flaxseeds and fish oils. Resveratrol, agaricus and pomegranate work as aromatase inhibitors. Lactobacillus works in the gut, enhancing liver detoxification pathways and colon ecology.

## *Detoxification*

Some classic liver detoxification herbs include function-enhancing herbs like silymarin, taraxacum root, and lipotropic factors.

## *Diet and endometriosis*

Diet can have a direct effect on endometriosis. A study compared 504 women with laparoscopic confirmed endometriosis and 504 women without endometriosis. A 40% decrease risk of endometriosis was found in women who ate high amounts of green vegetables and fresh fruit. On the other side of the spectrum, an 80% increase risk for endometriosis was found in women who ate high amounts of beef, other red meats, and ham.<sup>3</sup>

# Treating pain relief

An effective treatment plan will address the various stages of pain that can occur with endometriosis. For example, recurring acute pain during or before menses is common. Developing a treatment plan that will address both the short-term and long-term needs for the patient is crucial. Treating chronic pain, fatigue and constipation is also important. And because endometriosis can cause infertility, considering treatment options that address that concern can be helpful. Lastly, often treating endometriosis therapeutically will require the use of medications. It's important to choose pain medications with the least complications, both for immediate side effects and for their potential drug dependency effects.

## *Acute pain*

Acute endometriosis pain can be treated with valerian, cramp bark, ginger, fennel, guava, essential oils, vitamin b3, vitamin b6, thiamine, vitamin c and rutin, calcium, magnesium, and manganese.

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<sup>3</sup> Hum reprod 2004;19:1755-1759

## *Chronic pain*

Chronic endometriosis pain can be treated with turmeric, high EPA fish oils, and pine bark extract.

Pine bark extract has been shown to be an extremely effective method to treat chronic pain. In fact, a case study looked at 58 women suffering from persistent symptoms after laparoscopic surgery to treat endometriosis. They were given 30mg twice daily for 48 weeks. Researchers compared this group to another who were given Lupron six times every week for four weeks. The pine bark group showed a 33% reduction in symptoms. The Lupron group showed more efficient symptom reduction, but also showed a relapse 24 weeks post treatment, making pine bark extract the more effective long-term treatment option.<sup>4</sup>

## **Botanicals and endometriosis**

There is significant evidence that suggests botanicals can be effective at treating endometriosis. For instance, a study on endometriosis used an herbal formula that consisted of frankincense, corydalis, salvia, cinnamon Chinese angelica, dahurian angelica, licorice, myrrh, and white peony. In the study, endometrial biopsies were used to generate cell cultures from subjects with endometriosis and from controls. At the end of the study, the herbal formula was shown to inhibit proliferation, induce apoptosis, and blunt CCL5 gene and protein expression in endometriotic stromal cells.<sup>5</sup>

### *Turmeric*

Turmeric is an effective anti-inflammatory herb that can be used to effectively treat endometriosis. The volatile oil fraction of the turmeric is the curcumin which possesses anti-inflammatory activity in a variety of experimental models. Turmeric has many anti-inflammatory actions due to its ability to inhibit leukotriene formation and platelet aggregation. Turmeric promotes fibrinolysis, inhibits neutrophil response to various stimuli involved in the inflammatory process. It also stabilizes cell membranes, preventing the release of inflammatory mediators and may increase and potentiate cortisol action.

Dosages of 400-600mg of turmeric can be administered three times daily to provide anti-inflammatory effects.

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<sup>4</sup> J Reprod Med 2007;52

<sup>5</sup> Biol Repro 2009 Aug;81(2):371-7.

## *Green tea*

Green tea has many health benefits, including its ability to treat symptoms of endometriosis. A case study looked at human endometrium from a small group of women with endometriosis.

Researchers transplanted the endometrium into immuno-compromised mice, and those mice were randomly treated with epigallocatechin-3-gallate (EGCG). This was compared to a control group given vitamin E. When compared to control, the EGCG group showed

inhibited angiogenesis, a mechanism that needs to be targeted in the treatment of endometriosis.<sup>6</sup>



## **Chronic endometriosis sample treatment plan**

The following is a sample treatment plan that can be used for the treatment of endometriosis.

- Diet:
  - Garlic, onions, curries, cold water fish, fruits, veggies, nuts/seeds
  - Decrease saturated fats, sugar, salt, caffeine
- EPA: 1,080 mg/DHA 720 mg
- Anti-oxidant combinations: robust dosing
- Pine bark, 30mg two times per day
- Lipotropic product, two per day
- Probiotics 8-24 billion per day
- Turmeric (1,000mg, two times per day) or ginger (500mg three times per day)
- Consider green tea, dandelion root and milk thistle
- OMP 200mg daily, days 15-26
- OCPs /contraceptive patch

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<sup>6</sup> Fertil Steril. 2011 Oct;96(4):1021-8.



# Primary dysmenorrhea

Menstrual cramps are not always solely a result of endometriosis. Primary dysmenorrhea is a prostaglandin problem in which a patient suffers from functional menstrual cramps that are not due to endometriosis. This functional problem can be caused by numerous factors such as diet, lifestyle, emotional environment, and exercise. Integrating conventional pain management techniques with botanicals can be an effective way to treat this problem. There is even a possibility that conventional pain management through over-the-counter drugs and prescription medications could be replaced solely with botanical treatments.

## *Prevention*

There are numerous prevention strategies that can be used to treat primary dysmenorrhea including improving posture and spinal alignment, reducing stress, finding the right form of contraception, avoiding smoking, sensitivities and allergens, managing weight, exercising, and eating a healthy diet.

## *Ginger and dysmenorrhea*

Ginger has many positive effects on symptoms of dysmenorrhea. A 2009 study looked at 150 reproductive-aged women with primary dysmenorrhea. The women were divided into three groups in a double-blind clinical trial. Group one was given ginger rhizome capsules, 250mg four times a day for three days starting day one of their menses. Group two was given 250mg mefenamic acid capsules, four times daily day one through three of their period. And group three was given 400mg ibuprofen capsules four times daily on days one through three of the menses.

Severity of dysmenorrhea decreased in all groups and no differences were found between the groups in pain severity, pain relief, or satisfaction. Interestingly, however, more women in the ginger group became completely pain free when compared to the mefenamic acid and ibuprofen groups. The rate of satisfaction from the treatments was 20/50 women in the mefenamic acid group, 22/50 women in the ibuprofen group and 21/50 women in the ginger group.<sup>7</sup>

A second study looked at 105 Iranian women with moderate-to-severe primary dysmenorrhea. Ginger capsules were given in one of two methods. First, 500mg ginger capsules or placebo were given three times daily starting two days before the beginning of menses and continued

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<sup>7</sup> J Alternative and Complementary Med 2009; 15(2):129-132.

through day three of menses. Second, 500mg ginger capsules or placebo were given three times daily on days one, two and three of menses. Severity of pain was significantly reduced in the ginger group compared to the placebo group for both dosing methods, with better results in the first dosing method.<sup>8</sup>

### *Valerian and dysmenorrhea*

Valepotriates and valeric acid are capable of binding to the same receptors in the brain as valium. Valium relaxes spasmodic contractions of intestinal muscles and is thus, effective at treating issues of dysmenorrhea.

It can be given as a tincture in 1tsp doses every three to four hours as needed. One to two capsules can be given every three to four hours as needed.



In research, valerian has been shown to have many positive benefits for the treatment of dysmenorrhea symptoms. A randomized placebo controlled trial looked at 100 subjects with primary dysmenorrhea. Valerian was administered to 49 subjects and a placebo was given to the remaining 51. The valerian group was given 255mg of valerian three times a day for three days at the onset of menses for two consecutive cycles. Pain and severity

was significantly reduced and to a much greater degree in the valerian group versus the placebo group.<sup>9</sup>

### *Cramp bark and Black haw*

Cramp bark and Black haw are effective uterine relaxants, providing general anti-spasmodic actions. These botanicals can be given in several doses. Cramp bark tinctures can be given in ½ tsp doses every two to three hours and cramp bark capsules can be given in 1 capsule doses every two to three hours. Black haw can be given in ¼ tsp doses every two to four hours and capsules can be given in 1 capsule doses every three to four hours.

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<sup>8</sup> BMC Complement Altern Med. July 10, 2012;12(1):92

<sup>9</sup> Int J Gynaecol Obstet. 2011 Dec;115(3):285-8.

## *Fennel essential oil*

Fennel essential oil has an effect on uterine contractions. Different doses have been shown to significantly reduce the intensity of oxytocin and PGE 2-induced contractions. Frequency of contractions have also been shown to be reduced induced by PGE 2 but not with oxytocin.<sup>10</sup>

## *Black cohosh*

This botanical is helpful in both spasmodic and congestive menstrual cramps. It has traditionally been used for false labor pains.

## *Others*

Other traditional herbs that can treat dysmenorrhea include chamomile, passionflower, blue cohosh, hops, wild yam, curcumin, prickly ash, motherwort, and dandelion root.

# Chronic dysmenorrhea sample treatment plan

The following is a sample treatment plan that can be used for the treatment of dysmenorrhea.

- Exercise
- Diet:
  - Cold water fish, fruits, vegetables, nuts/seeds
  - Decrease saturated fats, sugar, salt, caffeine
- Niacin: 100mg twice a day
- B6 100mg + Mg 100mg every two hours during pain for six months
- Fish oils: 1,080mg EPA + 720mg DHA
- Vitamin E: 200-400 IU per day
- Cramp bark: 2 caps per day
- Consider: black cohosh, wild yam, milk thistle, dandelion root
- Progesterone cream: ¼ tsp twice a day, days 15-26 of cycle

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<sup>10</sup> Ethnopharmacol 2001 76(3)

## Conclusion

Treating menstrual cramps and endometriosis does not have to be accomplished solely with over-the-counter or prescription medications. Botanical treatments can provide lasting improvement for these issues. Numerous case studies have proven that often botanical remedies are as effective, or more effective than, traditional treatment methods. From ginger to turmeric, botanicals can address many of these physiological issues, providing much needed relief for the patient.

## Contributor

Dr. Tori Hudson, Naturopathic Physician, graduated from the National College of Naturopathic Medicine (NCNM) in 1984 and has served the college in several capacities, including: Medical Director, Associate Academic Dean, and Academic Dean. She is currently a clinical professor at The National College of Naturopathic Medicine (NCNM), Southwest College of Naturopathic Medicine and Bastyr University. Dr Hudson has been in practice for 29 years, is the medical director of her clinic, “A Woman’s Time” in Portland, Oregon, and director of product research and education for Vitanica.

Dr. Hudson was awarded the 1990 President’s award from the American Association of Naturopathic Physicians for her research in women’s health, the 1999 prestigious Naturopathic Physician of the Year award, the 2003 NCNM Alumni Pioneer Award, the 2009 Natural Products Association Pioneer Award, and in 2012 was inducted into the NCNM Hall of Fame.

She is a nationally recognized author (book: Women’s Encyclopedia of Natural Medicine second edition, McGraw Hill 2008), speaker, educator, researcher, and clinician. Dr. Hudson serves on several editorial boards, advisory panels and as a consultant to the natural products industry, including on the Scientific Advisory Board of Gaia Herbs Professional Solutions.