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Exploring herbal medicines in the treatment and management of endometriosis

Introduction

Herbal Medicine is an ancient worldwide practice of using plants to prevent and cure disease. Almost anyone can benefit from herbal remedies and is especially useful when given as a tonic. However, some conditions respond particularly well including rheumatic conditions such as arthritis, skin problems such as eczema, psoriasis or acne. Herbalists are frequently consulted for gynaecological problems such as menstrual irregularities or infertility. Herbs are also useful in a range of digestive disorders and in treating hormonal imbalances that give rise to a number of physical and psychological problems. Many with mental health disorders such as depression, stress, anxiety and irritability have gained valuable help from herbal alternatives. Western herbal medicine is not to be confused with Traditional Chinese Medicine (TCM) or Ayurveda.

The main purpose of this talk is to provide an alternative viewpoint to the treatment and management of endometriosis in the modern female patient. In this respect, the impact of stress and modern lifestyles will be discussed highlighting case studies and successful management through a combination of natural remedies and therapies. The wider implications of endometriosis on patients' lives and how it impacts on all aspects of their health & well-being will be discussed.

Clinical Presentation

Signs & Symptoms

Summary clinical features exhibited in endometriosis:

Common Symptoms	• Pelvic pain • Painful periods • Painful intercourse • Infertility • Painful defaecation
Less Common Symptoms	• Blood in urine • Rectal bleeding • Urgency • Coughing up of blood

	• Nodules under the skin • High levels of prolactin hormone in the blood
Physical Findings (Signs)	• Pelvic tenderness & abnormal hardness of tissue • Nodules in pouch of Douglas • Mass in adjoining parts of the body • Uterine fixity • Nodules along utero-sacral ligament

Problems in diagnosis

Endometriosis is a complex and debilitating disease that can affect any woman. It is a chronic and progressive condition characterised by acute episodes. Parity of data relating to its prevalence in the population has been difficult to establish simply because in many instances, it is only discovered during investigative or exploratory surgery (ie. laparoscopy) when the patient presents with infertility or obscure abdominal pain. One of the difficulties in determining the incidence is due, in part, to the criteria for diagnosis. Before the advent of laparoscopy, the basis for accurate diagnosis rested largely on the symptoms and the subtle but non-specific clinical signs, or findings at laparotomy. Moreover, determining whether the association between pelvic pain and endometriosis is genuine appears crucial, given how commonly endometriosis can be found at laparoscopy and given the poor correlation between the severity of a woman's symptoms and the extent of the condition.

The global perspective is complex, particularly when there is a paucity of data relating to epidemiology and making direct comparisons of clinical presentations proves virtually impossible. This is not surprising considering the lack of medical resources in some poorer countries and the difficulty in making a definitive diagnosis. However, cases not being documented do not preclude its existence; even in the US where women have arguably greater access to laparoscopy, 27% of women with endometriosis in a retrospective study had been symptomatic for at least 6 years before a diagnosis was finally made. Not surprisingly, many women believe that a delayed diagnosis leads to increased personal suffering, more prolonged ill health and a disease state that is more difficult to treat.

Ultrasound is of limited diagnostic value in endometriosis but is particularly helpful in the detection of ovarian cysts. MRI (magnetic resonance imaging) is more beneficial in detecting invasion of surrounding organs such as the bowel, bladder or rectovaginal septum. However, in almost all cases, laparoscopy remains the gold standard means of diagnosing endometriosis.

Predisposing & Excitatory Factors:

There appear to be a number of problems in establishing predisposing and sustaining factors in endometriosis owing to the difficulties faced in gathering incontrovertible and compelling evidence of pathogenesis that conforms to scientific protocol. The combination of endometrial

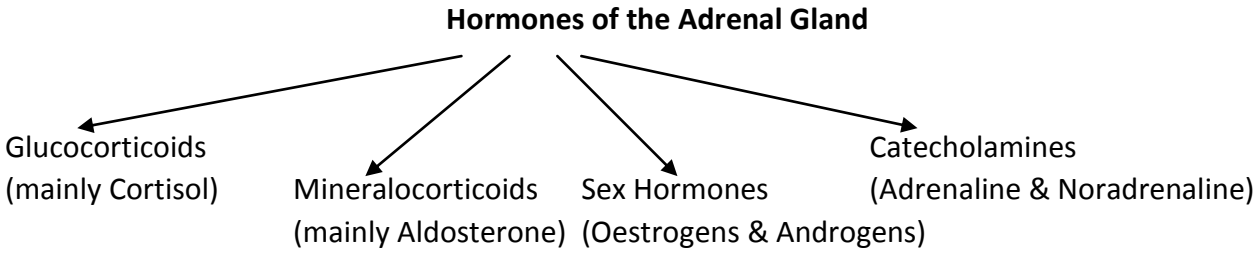
transplantation and immunological dysregulation may explain most cases but the role played by genetic and environmental factors that predispose or sustain endometriosis respectively, is currently under extensive study. Other risk factors have been summarised below.

Summary of predisposing and excitatory factors associated with the clinical presentation of endometriosis:

Associated (Predisposing)	Unproven / Inconclusive (Excitatory or Sustaining)	Not associated
• First degree relations	• Obesity	• Age
• Second degree relations	• Smoking	• Race
• Menstrual cycle ≤ 27 days	• Exercise	• Social class
• Menstrual duration ≤ 7 days	• Height/Weight ratio (BMI)	• Age & duration of marriage
• Genital outflow obstruction	• Age at menarche	• Miscarriage
	• Combined contraceptive pill	• IUD
	• Uterine retroversion	

<u>Impact of stress & the hormonal profile</u>

The modern female patient is subjected to a great deal of stress considering modern lifestyles and the hectic pace of life. Stress has a powerful impact on the body and should not be ignored when considering the clinical presentation of any disorder especially reproductive ones which have an absolute reliance on hormonal balance. Normal stress responses are an important part of life but continual exposure to it produces abnormally high levels of cortisol which can, over time, lead to adrenal exhaustion. This has a significant impact on the hormone profile, particularly in the sex hormone production pathways and the delicate homeostatic balance involving the brain and feedback mechanisms which maintain normal function is severely disrupted.



Patient Profile

Much has been argued about the type of person that suffers from endometriosis. Through research and professional dialogue, it is clear that endometriosis patients do not fit a 'typical patient profile'. The disease does not fit a particular criterion since it affects women and teens from all walks of life, countries, races and socioeconomic status. Further still, not all patients have the same symptoms, nor do all patients respond the same way to the same treatments. It is one of those situations where the natural therapeutic approach of 'treating the patient and not the condition' derives the greatest clinic benefit. One of the common themes throughout the lives of many endometriosis patients is pain.

In order to achieve quicker diagnoses and therefore quicker treatment of a patient's pain, an effective screening process must be developed in order to build a subsequent patient profile. To begin with, if a woman or adolescent has painful periods, she should be considered for an endometriosis diagnosis. However, it is important to consider this again and establish any patterns such as the 'career-driven single woman', high achievers, a goal-driven mentality, daily stress exposure, intense emotion, expectations of women in society and the increasingly competitive world we live in. This is not to be perceived as a negative trait as the merits of being ambitious is always judged harshly and viewed critically when it comes to women. Much of the stress in the lives of women appear to go 'straight to their reproductive organs' – it is debated whether this is due to diet, environment or lifestyle but with an increased incidence of female reproductive disorders such as PCOS, fibroids, menstrual irregularities and infertility it is a significant consideration. Additionally, the emotional aspect of patients also has huge bearing on patient profile and there has been some interesting studies conducted on emotional responses and disease pattern.

Treatment rationale

Holistic Medicine

The main difference in these two medical practices lies in how illness and disease is viewed. Modern medicine focuses on the symptoms whereas traditional therapists such as medical herbalists also consider the context in which illness has occurred. This also holds true for the treatment. Often, herbs are used as a preventative measure in fighting infection or illness and it is popularly used to enhance or maintain optimum health and well-being.

Viewing a person's illness in a holistic context is all about seeing them as a whole and not just focussing on the part of the body that is not working or is damaged. Taking into account a person's well-being must give due consideration to their psychological as well as their spiritual aspects of health. A holistic approach to physical problems would attempt to identify the cause(s) of the condition or illness having taken the initial steps to address the symptoms in order to alleviate any discomfort or pain. By taking a simple case history, the herbal practitioner will be able to gather the most important points regarding the patient and the outside influences which may be contributing to the illness. Examples of these factors could include bereavement, stress, divorce, work pressure (eg. staff appraisal, performance-related incentives), moving house etc…

Stress-related disorders are numerous and diverse. Stress can affect each person in a unique manner and whilst some will cope remarkably well under the most stressful situations, many others simply 'fall apart' displaying physical and mental signs and symptoms. The real purpose of holistic healing is to examine these factors in close detail but importantly, to see if there is a real discernable difference between these outside factors and a connection to illness compared to the signs and symptoms of mere organic disease.

General Treatment Plan

- Symptomatic approach to the clinical presentation
- Identification of sustaining and excitatory factors (especially chronic cases)
- Addressing lifestyle choices and identifying risk factors
- Addressing any concurrent complications in the clinical presentation
- Addressing issues of infertility
- Establishing effective referral systems for a definitive diagnosis in suspected cases
- Addressing wider implications of the presenting complaint
- Preventative measures (where possible)

'Treating the patient & not the condition'

This concept probably defines many of the natural therapies and may account for the many successes seen. This approach considers important aspects such as the emotional and psychological health of the patient. The emphasis on the patient rather than the condition can yield more effective results, particularly in chronic cases, stress-related disorders and in diseases such as a cancer. Treatment of and understanding the individual has a greater bearing in holistic medicine than conventional medicine.

Alleviating pain & discomfort

Conventional pain killers can be very effective but many patients worry that they become heavily reliant on them as a way of coping. Herbal analgesics have much to offer and can alleviate some of the concerns that patients may have over long-term use of conventional drugs. It is usually the case that herbal pain relievers are given as part of the general treatment plan and is invariably addressed

in the wider context of the case history. Reducing morbidity is a primary concern for all healthcare practitioners and working together from all disciplines and therapies could produce better results but this will require greater support from medical organisations as well as the government.

Herbal Management

A sophisticated approach would not only encompass the symptomatic and endocrine aspects but also include a trophorestorative function that nourishes and tones, especially the lymphatic and immune systems in addition to optimising elimination. This would particularly benefit those chronic cases where there is multisystem involvement as a result of adhesions which has compromised the anatomy and physiology of essential systems.

Symptomatic Approach

Summary of herbs commonly indicated in the symptomatic approach to endometriosis:

Symptom	Phytochemical properties/ Pharmacological actions	Herbs of Choice
Chronic abdominal or pelvic pain	• pelvic tonic & astringent • anti-inflammatory • analgesic • antispasmodic	*Senecio aureus* (life root) *Viburnum opulus* (cramp bark) *Chamomilla recutita* (chamomile) *Piscidia erythrina* (Jamaican dogwood)
Ovulation pain (pain mid-cycle)	• hormone balancer • ovarian tonic	*Anemone pulsatilla* (pulsatilla) *Chamaelirium luteum* (false unicorn root) *Vitex agnus castus* (chaste berry)
Dysmennorrhoea (painful periods)	• antispasmodic • analgesic • anti-inflammatory	*Viburnum prunifolium* (black haw) *Cimicifuga racemosa* (black cohosh) *Anemone pulsatilla* (pulsatilla)
Menorrhagia (heavy periods)	• anti-haemorrhagic • astringent	*Achillea millefolium* (yarrow) *Trillium erectum* (beth root) *Mitchella repens* (squaw vine)
Menstrual irregularities	• hormone balancer (oestrogenic or progesteronal)	*Vitex agnus castus* (chaste berry) *Dioscorea villosa* (wild yam) *Smilax ornata* (sarsaparilla)
Deep dyspareunia (pain on intercourse)	• anti-inflammatory • analgesic	*Anemone pulsatilla* (pulsatilla)
Dysuria	• astringent	*Capsella bursa-pastoris*

(pain on passing water)	• demulcent • anti-inflammatory	(shepherd's purse) *Ulmus rubra* (slippery elm) *Zea mays* (corn silk)
Pain on defaecation (painful bowel movements)	• anti-inflammatory • astringent	*Achillea millefolium* (yarrow) *Hamamelis virginiana* (witch hazel)
Aggravated PMS	• hormone balancer (oestrogenic or progesteronal)	*Vitex agnus castus* (chaste berry) *Carduus marianus* (milk thistle) *Angelica sinensis* (Chinese angelica)
Pelvic congestion	• decongestants • circulatory stimulants • uterine tonics	*Zingiber officinale* (ginger) *Chamaelirium luteum* (false unicorn root) *Achillea millefolium* (yarrow)

Complications & treatment of underlying pathology

Ectopic endometrial tissue embeds most frequently on the serosal aspect of the intestine, specifically the sigmoid colon and rectum. Cyclical pain, bleeding, diarrhoea and constipation can be treated with herbal preparations on a symptomatic level. Complications through adhesions that cause non-specific obstruction may be more difficult to treat although *Centella asiatica* (Gotu Kola) and *Salvia miltiorrhiza* (dan shen) are recommended for significantly reducing the rate of adhesion formation. Addressing the underlying pathology of any clinical presentation is always favoured in any holistic approach to treatment. The various mechanisms of underlying pathology in endometriosis and the herbs that are commonly indicated for each aspect are summarised below.

Treatment of underlying pathology in endometriosis:

Underlying Pathology	Herbs influencing the Mechanisms
Regulation of ovarian function	*Vitex agnus castus* (chaste berry)
Immune support (modulation & stimulation)	*Echinacea spp* (Echinacea) *Astragalus membranaceus* (membranous milk vetch) *Picrorrhiza kurroa* (kutki or kuri) *Phytolacca decandra* (poke root)
Nervine tonics for stress/ anxiety	*Scutellaria laterifolia* (skullcap) *Verbena officinalis* (valerian) *Hypericum perforatum* (St John's Wort) *Turnera diffusa* (damiana) (could also incl. adaptogens eg. the

	ginsengs)
Control of benign growths (anti-neoplastic)	*Thuja occidentalis* (tree of life) *Echinacea spp* (Echinacea)
Liver support (hepatics that accelerate the breakdown of oestrogen)	*Silybum marianum* (milk thistle) *Schisandra chinensis* (Chinese magnolia vine)

Evidence of Phytopharmacological Efficacy

An important focus is examining how effectively the body is eliminating and assess regulatory functions. This is partly a naturopathic philosophy. Another crucial aspect is circulation; part of the analgesic approach is to administer herbs that influence circulation in the pelvic region. In this respect, herbs such as *Crataegus* (hawthorn)*, Zingiber* (ginger) or *Capsicum* (cayenne) can all be helpful. Currently, there is a suggestion that thyroid antibodies are implicated in cases of endometriosis. Many of the herbs that influence immune function are also anti-inflammatory. *Echinacea* will modulate immune function whereas *Glycyrrhiza* (licorice) will directly influence the adrenal glands whilst stimulating the immune responses that result from the augmentation of inflammatory processes. Further, pain control is important and though dosages are higher, more analgesic cover is required at the beginning, with gradual reduction for subsequent treatments. Equally, treatment outcomes ought to be measured in the context of other medical or health problems with a view to modifying treatment strategies that prioritises more pressing concerns.

Hormonal influences of some herbs, particularly those that contain steroidal saponins (eg. *Dioscorea villosa* (wild yam), *Chamaelirium luteum* (false unicorn root) and *Vitex agnus castus* (chaste berry) have all been indicated in endometriosis, though in minimal dosages. Steroidal saponins are a specialised group of phyto-oestrogens that have very similar chemical structures to the endogenous oestrogens. Their precise action is unknown but they seem to interact with receptors in the hypothalamus and pituitary glands and increase fertility and ovulation (and, therefore progesterone production). They are primarily indicated for complaints associated with oestrogen excess and progesterone deficiency. *Vitex* has been shown to influence pituitary function thereby exerting an indirect effect through gonadotrophin (GnRH) action. *Trillium erectum* (beth root) is strongly indicated in cases of excessive bleeding or flooding. In Chinese medical theory, liver stagnation contributes to endometriosis by causing hormonal imbalances. Emphasis is on correcting liver malfunction. Moreover, the Chinese herb *Keishi-bukuyo-gan* has been shown to suppress adenomyosis (ingrowth of the endometrium) in mice.

Other measures

A range of natural therapies are proving very useful for a number of patients, particularly in the management of pain, depression and stress effects. Therapies such as acupuncture and massage therapy (eg. aromatherapy) are excellent for reducing pain and the impact of stress. Simple measures of other therapies may give local relief of pain by applying poultices of herbs such as chamomile, lavender, cramp bark, pulsatilla or valerian to the lower abdomen. Some patients find

homeopathic medicines of some benefit whilst others find relaxation techniques and exercises such as yoga, tai-chi or meditation particularly soothing and calming.

Dealing with infertility

Radical aspects of conventional management cause considerable distress, particularly when total removal of the reproductive organs impacts dramatically and irreversibly on fertility. This is an important consideration and the psychological wellbeing must have equal emphasis in patient care. Effective herbal treatment using a range of nervines to address the psychological and emotional aspects of endometriosis remains an essential component of the management approach. A holistic approach is therefore essential in addressing the wider implications of endometriosis, particularly, in coming to terms with infertility, but equally, in dealing with the physical and mental wellbeing of all patients afflicted with this condition. Counselling and psychotherapy should be a vital aspect of the management when dealing with infertility.

Nutritional Therapy

By far the most important adjunct in the management of endometriosis is addressing nutrition, since dietary factors have been demonstrated on many occasions to be inextricably linked to health. An increased understanding of nutrition and the growing popularity of nutritional therapeutic strategies in addressing disease states has provided significant relief in some of the more common symptoms exhibited in endometriosis. On occasion, nutritional therapy considerably overlaps with herbal medicine, invariably when plant remedies prescribed therapeutically serve the role of nourishing the body and restoring raw materials. With this in mind, hormonal imbalances in endometriosis can be addressed on a nutritional level and controlling oestrogen is essentially a nutritional process. Very low intakes of certain vitamins and minerals may limit the degradation of oestrogen and preventing its accumulation is essentially the treatment strategy, particularly as its build up through poor elimination is responsible for cell proliferation. Furthermore, the control of oestrogen levels is disturbed significantly by excess sugar levels, insufficient protein and is almost incapacitated by a lack of the B vitamins, choline and inositol. Vitamin B_6 encourages production of progesterone to help rebalance the two main sex hormones.

Infertility and pain are two major symptoms that can be effectively addressed through diet; certain nutrients possess analgesic and anti-inflammatory properties which correspond to conventional medicines without the side effects. Essential fatty acids such as fish oils, evening primrose oil (EPO), starflower oil, borage oil and linseed oils metabolise within the body to form anti-inflammatory prostaglandins (PGE_1) which help reduce pain and inflammation. Moreover, fish oil supplementation has been shown to significantly reduce the size of endometrial deposits. However, a balance between animal, vegetable and fish oil intake is necessary in order to avoid the production of certain other prostaglandins that trigger inflammation. Other supplementary nutrients are also suggested below.

Selected nutrients of value and relevance in addressing manifestations of endometriosis:

NUTRIENT	COMMENT
Vitamin C	• reduces inflammation
B complex B_1 B_6 B_{12}	• anti-inflammatory effects • analgesic action
Mg^{2+} deficiency	• causes muscle cramping in abdomen • causes joint pains *(Mg^{2+} acts on nerves that influence the relaxation of muscles & reduce the cramping pains during menstruation)*
DL Phenylalanine; DLPA (amino acid)	• marked reduction in pain through augmentation of endorphin release
Dioxin (pesticide))	• accumulation in fat cells is implicated in immune system damage and endometriosis through interference with choline metabolism (American Endometriosis Assoc.) *(Choline = a B vitamin that is essential for liver function and oestrogen degradation)*
Phytooestrogens	• isoflavones (weak exogenous oestrogens) in soya may counter the effect of endogenous oestrogens (only fermented soybeans are beneficial to health – see below)* • broccoli, French beans, pomegranates & fish oils encourages production of endogenous oestrogens

***** Soybeans are the most nutritious beans of all, containing all the essential amino acids. Fermented soybean products provide many nutrients and flavourings. The best known and most widely used fermented soybean products are miso, shoyu, tempeh and tamari. These are used as flavourings for soups, stews and casseroles. The most commonly available soy sauce is a poor imitation of shoyu or tamari. Only fermented soy products are safe. Precipitated soy products or non-fermented soy products such as bean curd (tofu) and soya milk or those made from soy protein isolate and textured vegetable protein are new to the diet and pose a number of serious problems. Traditional Asian diets do not contain any of these new products and do not pose any of the health hazards of 'Western' soya products; an invention of the West for commercial gain and profit.

<u>Lifestyle modifications</u>

Though no lifestyle factor has been directly implicated in endometriosis, it is safe to state that following a healthy lifestyle is the best course of action for everyone. Limiting alcohol, not smoking, addressing dietary concerns, nutritional deficiencies, ensuring a healthy diet, taking regular exercise, making time for rest and relaxation etc…. are all the obvious choices. Some of these factors will have a greater bearing for some more than others.

Conclusions

Wider implications & impact on patients' lives

Despite the lack of confirmed statistics for incidence of endometriosis, many conventional and complementary therapy practitioners treating patients as well as self-help groups, charities and organisations agree that this condition is one that warrants significant attention and assistance. Examining the wider implications of endometriosis reveals the true extent to which patients' lives are disrupted, and in most cases, limited. Current estimates of prevalence are alarming and a considerable workforce in Britain is comprised of women; significant time off work due to sickness impacts not only on the patient, but also the employer. Addressing the needs of sufferers and providing support is a priority in as much as the therapeutic management, being particularly critical where there is considerable morbidity. The influences of endometriosis on a patient's life can be dramatic affecting their social and family life, professional life in addition to their psychological well-being. Coping with possible infertility is another issue that must be considered as part of the management programme and it may be the case where alternative strategies such as counselling or psychotherapy in addressing this aspect of the condition is required. Patients may greatly benefit from this type of treatments particularly in coming to terms with not being able to have children.

Psychosocial aspects

The impact of this condition has far-reaching consequences regarding work, relationships and general well-being. Moreover, the immense emotional distress connected with menstrual disturbances can often be overlooked, and along with the physical involvement, a whole burden of anxiety can accompany the clinical presentation. Effective herbal treatment of the psychological and emotional aspects of endometriosis remains an essential component of the management approach. Many patients worry about their most intimate relationships, in particular their sex lives as well as their ability to work, their sickness record and potential earnings. Much of what we do as practitioners must take into account these factors and give due consideration to the emotional aspects as this is directly linked to the healing process.

Preventative measures?

Varying degrees of obstruction to menstrual outflow in a young patient may present with severe dysmenorrhoea. More than half the patients who were noted to develop endometriosis during childhood and adolescence had varying degrees of genital tract obstruction. There is a clear need for early diagnosis of congenital abnormality of urinary, intestinal or genital tract lesion (infants with genital tract obstruction were noted to develop endometriosis in the 1st year of life). Moreover, prompt action through cervical dilatation is indicated in some cases, though not routinely recommended.

Recent study /Research

Recent studies on the effect of an interferon α-2b; an immune cytokine, can offer fresh hope to those who prefer drug-based therapies but find current medication incompatible. Laparoscopic intraperitoneal injection of human interferon α-2b in women with variable stages of endometriosis resulted in an exacerbation of symptoms and a reduction in the staging of the disease. Further, an *in vitro* study demonstrated that interferon α-2b inhibits the growth and DNA synthesis of endometrioma cell lines. This has been a valuable advance in the treatment possibilities for endometriosis and holds great promise for future clinical trials. Further, more recent research in mice has shown encouraging results for a non-toxic, antiangiogenic protein drug called endostatin. By blocking the development of new blood vessels (an essential component of endometriosis development), endostatin suppressed the growth of endometriotic lesions by 47% without affecting the reproductive cycle or the formation of the corpus luteum. This has important implications on fertility and offers a promising treatment option for patients.

Case studies
As discussed

Phytooestrogens

Over the last few years, there has been great interest in the role of naturally-occurring plant constituents that have a weak hormonal action in the body. These are collectively referred to as phyto-oestrogens (PO) of which there are 6 main types consumed by humans. POs occur widely throughout the plant world and can have a profound influence on human health particularly in oestrogen-deficient states such as the menopause. All types are naturally-occurring compounds and can be found in grains, seeds, legumes and medicinal plants in addition to other vegetable sources.

Classification of phyto-oestrogens; edible plants with recognised oestrogenically-active compounds:

PHYTO-OESTROGEN	COMMON SOURCES
Isoflavonoids • main ones = genistein & daidzein • glycitein in smaller quantities	• alfalfa • licorice* • mung beans • whole grains • red clover • soya*
Lignans	• linseed (flax)* • rye • legumes • beans • wholegrains

Saponins (similar structure to steroidal hormone oestrogen, progesterone & androgens. Some pharmaceutical companies use saponin-containing plants to manufacture steroid hormones) • many medicinal herbs in this category • pharmacological mechanisms may involve interaction with hypothalamus-pituitary hormones rather than interaction with oestrogen receptors	• black cohosh – *Cimicifuga racemosa* • licorice* - *Glycyrrhiza glabra* • Korean ginseng – *Panax ginseng* • wild yam – *Dioscorea villosa* • fenugreek – *Trigonella foenum-graecum* • root vegetables • grains
Coumestans	• alfalfa • soya sprouts* • green beans • kidney beans
Resorcylic Acid Lactones	• oats • barley • rye
Others	• fennel – *Foeniculum vulgare* • cabbage family • sage – *Salvia officinalis* • garlic – *Allium sativum*

Contains high levels of phyto-oestrogens

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