

Our Ebb & Flow
An Ayurvedic Approach to Female Hormonal Imbalance

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In women, hormones are a pivotal part of keeping mind, body and spirit balanced. A healthy woman is a woman whose hormones are in balance. Irregular fluctuations, lack or excessive amounts of reproductive hormones in females can cause a plethora of physical & psychological disease. Throughout a woman's life she is faced with constant increases & decreases in her reproductive hormones, through major body shifts such as the onset of menses, through the monthly 28-day cycle, during pregnancy, and menopause. Ayurveda looks at regulating hormones with the use of diet and lifestyle techniques along with specific herbs for more demanding pathologies & symptoms.

In today's western world, the amount of women who are suffering from issues due to hormonal imbalances is ever increasing. Women are experiencing symptoms such as painful menstruation, emotional instability, and infertility due to stress, poor diet, environmental toxins, and having an unhealthy diet & lifestyle. Rebalancing the female hormonal system is a pivotal part of a woman taking control of her life again. Many women are operating at the mercy of their hormone fluctuations which impedes each and every part of their life. In order to live in a more peaceful, natural state, Ayurveda teaches women to gain their life back through creating body awareness & thus taking a hold of their diet & lifestyle routines to create better rhythms throughout their whole system.

According to the Astanga Hrdayam "Without aggravation of Vata, the vagina does not become disordered in women; hence that should be won over first and the others treated next"[1]. Imbalances in the female reproductive system are a result of vata dosha and therefore that dosha should be pacified initially through diet and lifestyle techniques. Variable routines, intake of cold, dry, light foods, excessive exercise, travel and stress can all lead to a vata imbalance. Low ojas can also be a contributing factor. Establishing stable routines (Dinacharya) to balance out Vata's inherent variability or instability is of the utmost importance. Reducing the overall amount of activity and practicing gentle yoga or tai chi, meditation to promote inner calmness is also important.[2]

A vata pacifying diet of warm, nourishing food is the best antidote to counter Vata's cold, dry and light qualities. Sweet, sour and salty tastes best pacify Vata dosha; Conversely, pungent, bitter and astringent tastes aggravate Vata and hence should be avoided. It is also best to avoid refined foods (white flour, bread), junk foods, and frozen foods, excessive amounts of dairy and meat products, cold drinks, caffeine and alcohol.

Disorders of the Vagina, Yoni Vyapat can also be due to "improper postures during lying/sleeping, excess of sexual intercourse, vitiation of the menstrual flow, use of bad materials (as substitutes for the phallus), disorders of the seed (ovum) and effects of actions of previous lives-by these causes vata gets aggravated and produces pain, prickling and dilating types of pain, loss of sensation, feeling of ants crawling, loss of movement, roughness & noise (gas coming out with noise) and discharge of menstrual blood which is frothy, slight reddish black, thin and dry (non

unctuous) drooping of groins and flanks, discomfort and gradual development of abdominal tumor [3]”.

Shifting diet and lifestyle techniques is the first way any female hormonal imbalance should be treated, as most symptoms will be alleviated with that. Also, “vagina origin-oleation, sudation, enema, and such other therapies, which mitigate vata are highly valuable, especially in those which are caused by vata.” Body therapies, such as Uttara Basti (vaginal oil basti), Anuvasana Basti (oil enema) and abhyanga (self-oil massage) can be beneficial for women experiencing hormonal issues. Some women experience deeper pathologies such as ovarian cysts, dysmenorrhea, uterine fibroids and infertility which may still be symptomatic even after diet and lifestyle shifts have been put into place. This is where Ayurveda would then use specific herbs to assist the body with these diseases.

In order to fully understand the imbalance of hormones, we must look at what hormones are most prevalent in female reproductive disorders. There are 5 main reproductive hormones that affect the female reproductive system; Luteinizing Hormone-Releasing Hormone (LHRH), Luteinizing Hormone (LH), Follicle Stimulating Hormone (FSH), estrogen and progesterone. These hormones are in constant fluctuation throughout a woman’s reproductive years.

Luteinizing Hormone-Releasing Hormone (LHRH) is released by the hypothalamus and travels to the pituitary gland. LHRH stimulates the pituitary gland to release two hormones called Luteinizing hormone (LH) and Follicle-Stimulating Hormone (FSH). These hormones act upon the ovaries. Luteinizing Hormone (LH) is released by the pituitary gland in response to LHRH. The hormone travels to the ovaries and affects the development of the follicle (developing egg). It stimulates the follicle to grow and mature & to be released when ready. Follicle-Stimulating Hormone (FSH) is released by the Pituitary gland in response to LHRH and travels to the ovaries working with luteinizing hormone to stimulate growth and development of the follicle. As follicle matures, estrogen is released. Estrogen is the hormone responsible for qualities associated with femininity such as maturity of the sexual organs, development of breast tissue, stimulates bone growth, increases body fat, and thickens the skin making it more vascular and soft. Estrogen levels fluctuate throughout the month long female menstrual cycle. When estrogen levels are higher there is greater sodium in the body and therefore water retention that could result in mild edema.

The last major female reproductive hormone is progesterone. Secreted initially by the maturing follicle in response to FSH and LH. A large amount is later produced by the corpus luteum (tissue that is left over in the ovary after the egg is released). Progesterone is responsible for the thickening of the endometrium of the uterus during the second half of a woman’s monthly cycle. This allows for proper implantation, should the egg become fertilized. Progesterone prevents uterine contractions inhibiting menstruation. Should pregnancy occur, it is progesterone that prepares the breast for lactation. This is why, when there is no pregnancy, a woman’s breasts may swell and become tender in the week or two before menses.

Progesterone also causes uterine endometrial proliferation in preparation for implantation, decreases uterine contraction preventing miscarriage, prepares the breast for lactation, and can cause breasts to swell and become tender [4].

These hormones are the key players in the life of women. They circulate on an average 28 day cycle in females starting as early as age 11 until menopause. The menstrual cycle, Rajodharshana, is broken up into 2 phases.

The first phase is the Follicular Phase. FSH & LH increase and stimulate the growth and maturation of the follicle. As the follicle matures, it begins producing estrogen, which is responsible for beginning the development of the endometrial lining. Estrogen levels rise gradually throughout the follicular phase and then surge between days 9 & 12. On day 12, Estrogen, LH, & FSH are all peaking together in order for ovulation to take place.

The second phase is the Luteal Phase. At the beginning of the second phase of the menstrual cycle, the corpus luteum is formed in the ovary from the remains of the follicle. The Corpus Luteum's main function is to secrete large amounts of progesterone, which stimulates the rapid growth of the uterine endometrium. Also, a small amount of estrogen is produced. Estrogen & Progesterone increase at the first part of this phase, but progesterone is increasing most dramatically. Both peak from days 23-25 and then begin to decline as the corpus luteum becomes inactive. Estrogen & Progesterone reach their low point at day 28. The drop off of progesterone is what causes uterine tissue to become necrotic and hemorrhage triggering menstruation. The first day of menstruation is the first day of the cycle.

During menses, a woman can really tune in to whether her hormones are balanced or not depending on the discomforts she may face throughout the month & when she feels these symptoms.

One of the most common symptoms of hormonal imbalance is Premenstrual Syndrome (PMS). One week after ovulation, and thus one week before menstruation, the level of progesterone in the body reaches its cyclical high as estrogen levels are decreasing. Just before menstruation, levels of both estrogen and progesterone drop abruptly. A number of studies suggest that during the first 3 weeks of the menstrual cycle, increasing levels of estrogen stimulate feel-good hormone releasing beta-endorphin, which reduces pain and elevates mood. Rising levels of progesterone at the same time make this natural opium like substance even more potent-that is until reproductive hormones decline prior to menstruation. Then this endorphin drops too. The result can be feelings of anxiety, along with fatigue, insomnia, pain, & irritability [5]. PMS manifests differently for all females experiencing it. Common symptoms include nervousness, depression, emotional imbalance, irritability, inability to concentrate, anger, digestive issues such as nausea, vomiting, and constipation, acne, fatigue, breast tenderness, weight gain, water retention & neurological issues such as headaches, palpitations, and paresthesias.

PMS is triggered from a hormonal basis but the cause is unclear. In Ayurveda, PMS is defined as a collection of imbalances that vary in women due to

hormonal imbalances in the premenstrual phase. The causes are primarily due to low ojas, most symptoms are due to or pushed by vata dosha, management of ama is primary and long term tonification is needed. PMS can manifest as a vata, pitta, or kapha imbalance.

Vata rupa can manifest as irritability, anxiety, nervousness, inability to concentrate, mood swings, constipation, neurological symptoms, and fatigue. Vata-type PMS would be treated with a Vata-pacifying diet, tonifying body therapies, regular routines, and stress reduction. Female reproductive tonics such as dong quai, shatavari, wild yam and vitex would be administered as well.

Vitex is one of the best herbs for vata type PMS because it "specifically influences LH, FSH and gonadotropin-releasing hormone which act on the hypothalamus and pituitary glands to normalize secretions of hormones. It increases the ratio of progesterone to estrogen which helps with PMS.

"A randomized double blind study on a vitex extract with 170 women found that the improvement of numerous symptoms in over half the women taking vitex was twice that of women taking a placebo." [6]

Pitta type PMS can manifest as anger, intensity, and acne. This would be treated with a Vata/Pitta pacifying diet emphasizing sweet taste with 5 meals per day, purifying then tonifying body therapies, with a short fast in first half of the cycle, along with a purge then follow with tonification. Herbs that would be administered would be cool reproductive tonics such as shatavari, wild yam, ashoka. Also, alteratives to cool the rakta such as dandelion root, burdock root, & aloe vera.

Kapha type PMS can manifest as water retention, weight gain, breast tenderness, and nausea. This would be treated with a Vata/Kapha pacifying diet with 5 small meals a day and diuretic herbs like cinnamon and juniper berries to help the body release extra water weight that collects during PMS. Shiliajit is also a great herb to use to regulate the ambuvahasrotas (water regulating channel).

The psychological effects from PMS can alter a woman's day to day based upon many studies. "An evaluation of 44 studies in fertile women found a positive correlation between suicide attempts and menstrual phases that are characterized by low estrogen levels. In healthy women, some studies report negative premenstrual changes in mood as common and suggest that the majority of women of reproductive age describe a cycle dependent increase in negative emotions, such as irritability, impulsivity, fear and low mood. [7]" Common western treatments for these mood swings include pain medications, antidepressants, diuretics, and progesterone or estrogen-progesterone birth control pills.

Ayurveda chooses lifestyle changes over medications to help alleviate these mental strains. Studies also show "relaxation methods such as yoga, meditation, and aerobic exercises such as running, walking, swimming, and bicycling can relieve PMS symptoms. They do so by altering brain chemistry and boosting endorphins. Regular exercise helps ease the mild depression of PMS. Women with PMS who exercise on a regular basis not only feel less sadness, guilt, fear, and

hostility, they also develop better concentration and have less pain and water retention. They feel less anxiety when faced with stressful task & can relax more easily. [8]"

A woman experiencing mood fluctuations before her cycle does not have to cause herself to suffer any longer. Dramatic mood shifts are a sign that her body is not in sync and there are simple lifestyle shifts she can make to have a more fluid and painless period.

An imbalance in female hormones can also cause Raktaja Gulma, which are tumors of the female reproductive system. In western terms, these can be seen as uterine fibroids, ovarian cysts, and polycystic ovarian syndrome (PCOS).

The direct cause of tumors can be due to recent miscarriage, childbirth, suppressing menses, and unwholesome food or conduct. To treat reproductive tumors, pacifying vata would be primary and the use of herbs such as palasha, guggul and pippali that will disintegrate and ripen the tumor to decrease the size and/or eliminate its presence. Herbs like lodhra, ashok and manjishta can also be used for excess bleeding.

Uterine Fibroids are a type of Raktaja Gulma and the condition is at least in part mediated by estrogen. Estrogen stimulates growth and the tumors have more estrogen receptors on them than normal tissue. Progesterone may also stimulate growth. During menopause, as estrogen levels decrease, the tumors tend to shrink as well. The cause of these fibroids could be early menarche, overweight, high estrogen appears to play a role. The treatment for these fibroids would be to block or reduce estrogen levels with drugs or herbs.

Ayurvedically speaking in uterine fibroids, there is a Kapha imbalance in the mamsa dhatu of the artavavaha srotas, which would be treated with a Kapha pacifying diet, herbs such as palasha, vitex, milk thistle, lodhra, ashok, guggul, pippali and castor oil packs to help break and disintegrate the fibroids

Ovarian Cysts are the most common in women with irregular cycles. Cysts can commonly be a result of a follicle that keeps growing and does not rupture releasing its egg. This may occur if LH surge is insufficient to stimulate ovulation. The cause of cysts are due to hormonal imbalance.

In Ayurveda we see this as vata pushing Kapha out of balance in the shukravaha srotas. This would be treated by pacifying vata first, then locally treating cysts with castor oil pack, a vata pacifying diet, regular routines, panchakarma including niruha basti with shatavari and dashmool. The herbs that are prevalent to treat this condition are ashoka, chandraprabha, and kachanar guggulu.

Polycystic Ovarian Syndrome (PCOS) may be due to excess LH production from the pituitary gland resulting in excess male hormone production. The signs and symptoms may be amenorrhea, menstrual irregularities, acne, decreased breast size, hirsutism (masculine characteristics such as facial and body hair), infertility, weight gain/obesity, and acanthosis (dark thick skin around the folds in the neck, arms, thighs, or breasts).

Ayurveda sees this as a tridoshic (Sannipattika) condition, where the excess testosterone is responsible for the pitta aspects of the condition. The treatment of polycystic ovarian syndrome is similar to ovarian cysts, with an emphasis on cooler treatments to manage pitta.

Female infertility is largely in part due to PCOS and Shilajatu Rasayana has shown significant results in regulating hormones, reducing the cystic follicles, maturation of ovarian follicles and decreasing the increased ovarian and uterine weight in a study done with letrozole induced PCOS in lab rats. Shilajatu Rasayana contains shilajit bhasma, loha bhasma, vaikranta bhasma, triphala churna, and trikatu churna having antioxidant, immunomodulatory, hypoglycemic, and hypolipidemic effects, and various elements such as zinc, magnesium, chromium, Vitamins B, A, Omega Fatty acids, enzymes and phytosterols having hormonal balancing and estrogenic effects which have shown a significant result in letrozole induced PCOS [9].

Amenorrhea or Nashta Rakta (Destroyed Blood) is another hormonal disorder many women experience. There are two types of amenorrhea. It is primarily categorized by a woman who has not reached menarche by 16 and secondarily seen as the absence of menstruation for greater or equal to 3 months in women who are post-menarche, pre-menopausal, non pregnant, or non lactating. This condition implies a failure to ovulate due to an endocrine disorder and also seen due to stress most common cause resulting in Low FSH & LH.

Ayurvedic sees this condition as a depletion of the shukra and/or rasa dhatus due to vitiation of vata and pitta doshas. The cause is Vata provoking regimens and most particularly excessive exercise, extensive travel & stress. Dryness of the eyes, skin, hair, nails & constipation can be seen throughout the body along with a lack of menses. To treat this condition, reversing the nidana with a vata pacifying diet (nourishing/oily), rest, yoga, and meditation. Also, using essential oils such as clary sage, rosemary, and myrrh diffused or in a carrier oil and applied on the abdomen can help stimulate the menses. Female reproductive tonics such as shatavari, vidari kand, wild yam can be used along with a tonic emmenagogue such as dong quai which stimulates menses while also providing nourishment to the tissues of the body.

The importance of having a regular menses can not be undermined. It is a part of the female experience and the ability to carry life. Having a menses is not only a signifier for a whole, healthy system, it actually helps clean out your reproductive system.

“Menstrual blood is rich in immune cells and is the only blood in the body that doesn’t clot. This means that when menstrual blood flows, it freely bathes and cleanses the uterus, cervix, and vagina with its antibacterial, antiviral properties. It is unhealthy to suppress menstruation, especially when women are sexually active. This is an especially timely concern with the increased availability and popularity of chemical birth control that seeks to all but eliminate a woman’s cycle[10].”

Another major disease caused by hormonal imbalance is infertility. There are many causes that may include hormonal abnormalities due to hypothalamic or pituitary dysfunction. Infertility is diagnosed after a couple's inability to conceive after one year of unprotected sex most commonly due to fallopian tube dysfunction/blockage due to scarring, ovulatory dysfunction and acidic cervical mucus. This condition can be caused by "an increase in FSH in women which may indicate a reduction in the production of good quality eggs and embryos for fertilization. A woman's chances for pregnancy may be lower than expected for her age. Higher than normal levels of LH in a woman may mean the ovaries are absent or not functioning. In a young woman, high levels may mean that puberty is early. Low levels of LH in the blood may indicate anorexia, an issue of the pituitary gland, stress or damage to the hypothalamus[11]." Most women who experience infertility are overweight or obese. This is because estrogen is produced by the fat cells and primary sex organs, thus state of high body fat or obesity causes increase in estrogen production which the body interprets as birth control, limiting the chances of getting pregnant [12]."

In Ayurveda infertility can be due to vata, pitta, or kapha. Infertility can be caused by a vata diet & lifestyle due to its depleting nature and overstress. This would be treated with a vata pacifying diet with lots of milk and ghee, rejuvenative body therapies, stress reduction, and cultivation of faith. Herbs that would be used are reproductive tonics like shatavari, wild yam, and vidari kand.

Pitta can cause infertility due to past infections causing scarring, acidic mucus due to pitta lifestyle and diet. This would be treated with a pitta pacifying diet with milk and ghee, panchakarma followed by rejuvenation, stress reduction, lunar pranayama, and cool reproductive tonics such as shatavari, wild yam, and vidari kand. Kapha can be behind infertility with obstructions due to a Kapha lifestyle and diet, thickened fallopian tubes, and compression of the tubes by body fat. Kapha type infertility can be treated with a strongly purifying and kapha pacifying diet, panchakarma, an increase in exercise and movement, and obstruction cleaning herbs such as pennyroyal and guggul.

Menopause, although a natural transition for all women, is due to hormonal shifts in the body. The natural cessation of the reproductive capability of women is marked by the decrease in estrogen levels, and an increase in FSH and LH in response. This decrease in estrogen can cause women to experience vaginal dryness, along with overall dryness, hot flashes, nervousness, depression, anxiety, insomnia, anger, irritability, impatience, fatigue, lethargy, weight gain, bone loss and water retention [13]. Perimenopause is the 1-10 year period during menopause in which hormones fluctuate, menses is still present but not as regular. The onset of "the perimenopausal phase represents a vulnerability period for developing a depressive illness which is supported by evidence for a high rate of new onset major depressive episodes.[14]"

Ayurveda looks at menopause as a natural transition out of the childbearing years of a woman. To ease the transition Ayurveda would first use diet & lifestyle

changes. If symptoms are still not alleviated, herbal remedies would be administered. Reproductive tonics like shatavari, ashwagandha, and kappikachu may be given in warm milk to help alleviate symptoms. Herbs like shatavari are considered a phytohormone specifically a phytoestrogen.

Phytohormones are plant-based chemicals that are not actual hormones but mimic the effects of hormones in the body. There is some controversy over whether the benefits outweigh the risks in using even plant based hormones. "A litany of health benefits including lower risk of osteoporosis, heart disease, breast cancer, and menopausal symptoms are frequently attributed to phytoestrogens but many are also considered endocrine disruptors, indicating that they have the potential to cause adverse health effects as well. The question of whether or not phytoestrogens are beneficial or harmful to human health remain unresolved. The answer is likely complex and may depend on age, health status, and even the presence or absence of specific gut microflora. Dose, dietary composition, phytoestrogens administered and duration of use vary considerably across epidemiological studies making them difficult to intercompare.[15]" Phytoestrogens are found naturally in different food products such as tofu, soy milk, seeds (flax), nuts, whole grains, clover, alfalfa sprouts, beer, coffee, candy licorice and in common herbs like shatavari, dong quai, black cohosh, red clover, licorice, thyme, turmeric, lodhra, and verbena. "Consumers should be aware that soy contains endocrine disrupting compounds and make dietary choices accordingly. For a typical consumer, alarm over soy products is likely unnecessary but so is the belief that a soy-rich diet will alleviate all ills. Moderation is likely key and the incorporation of real foods as opposed to supplements or processed foods to which soy protein is added, is probably essential for maximizing health benefits.[16]" When weighing the pros and cons of phytohormones, it is key to remember that plant based diets are always safest and healthiest and contain naturally occurring phytohormones that are easily recognizable by your body's system.

Societally, many women do not look forward to this transition due to the fear of years of uncomfortable symptoms when in reality, a woman should feel empowered to enter this time. "This period of time marks a major turning point for a woman. It's a time of transition when she is naturally suited to begin an inner journey. Up to now in her life, it was natural for her to educate herself, raise a family, develop her profession, and engage full in the world. Menopause is the time to reverse the momentum of her involvement in the activities of the world, turn this energy inward, and begin to plumb the depths of her soul.[17]"

Many women turn to Hormone Replacement Therapy (HRT) as a common treatment to relieve the discomforts of the transition into menopause. Besides managing diet, lifestyle and stress a woman may look to supplements to ease the symptoms of menopause. There are a few options many women are guided towards which are Hormone Replacement Therapy (HRT), Estrogen Replacement Therapy (ERT), and Bioidentical Hormones. If a woman decides to use Hormone replacement therapy this should be a temporary supplementation & should be used for the least

amount of time as there are known and unknown detrimental side effects with long term use including increasing risk of breast cancer. Bioidentical hormones have gained popularity “in the aftermath of the unexpected adverse results of the Women’s Health Initiative (WHI) trial in 2002¹. Women in the U.S. began to look for options other than traditional hormone replacement therapy for the reduction of menopausal symptoms. A popular alternative hormone replacement therapy is bioidentical hormone replacement therapy. These hormones are derived from plant sources and are termed bioidentical because it is claimed that they are structurally identical to endogenous hormones, not just human hormone receptor binders. Like synthetic & semi synthetic hormones, bioidentical hormones are derived in a laboratory, not harvest from endogenous sources.[18]”

Using synthetic or naturally occurring hormones is ultimately up to the individual and a patient should be briefed by their practitioner or physician on the least detrimental option to optimize their transition into the non-child bearing years of life.

There is also a group of synthetic hormones, called xenoestrogens, that when exposed to, bring about concern of increased risk of cancer, especially breast. These hormones are commonly seen in plastic water bottles (BPA), skin creams containing parabens, and many other chemicals found in insecticides, detergents, and soaps. It is nearly impossible to avoid contact with xenoestrogens in our world today. The best way to decrease your exposure is to use organic, naturally occurring products in your home and on your body whenever possible.

Throughout these major transitions in a woman’s life she will experience fluctuations in her hormones which can impact her physically but there is large amounts of evidence that show how these transitions can mentally shift a woman as well. As we saw with many of the disorders previously mentioned, there is always a mental component that works in addition with a physical symptom.

“The brain represents an important target for estrogen and progesterone effects. The classical estrogen receptors and progesterone receptors are highly expressed in brain areas involved in emotion and cognition such as amygdala and hippocampus. Ovarian hormones can act on multiple receptor types such as serotonin and dopamine.[20]” Meaning that dramatic increases and decreases in estrogen and progesterone can affect a woman’s contentment, cause depression, anxiety, memory bias, and decision making.

¹ Women’s Health Initiative (WHI) was a massive study that involved sixteen thousand women aged 50-69. Studied the effects of taking synthetic estrogen and progestin supplements. The study had been scheduled to last until 2005 but was halted in the summer of 2002 when its authors found that women in the study who were taking the estrogen-progestin supplement has a significantly increased risk of breast cancer (29%), heart attacks (26%), blood clots, and strokes (41%). Women also suffered weight gain, fatigue, depression, irritability, headaches, insomnia, bloating, low thyroid, low libido, and gallbladder disease as a result of being on Hormone Replacement Therapy (HRT). [19]

For women, hormonal transitions across their lifespan represent periods of elevated vulnerability to development of mood disorders: elevated & fluctuating sex hormones seems to predispose women to mood-disturbance, beginning with a heightened risk of developing a depressive episode following puberty.

Ayurveda manages hormonal imbalances in women from a holistic approach. Looking at the person's daily regiment, the food/senses they are absorbing and the stressors they are encountering. Once those aspects are managed, herbs are the next step in relieving symptoms of hormonal imbalance.

Shatavari is a key female reproductive herb that treats a wide variety of hormonal symptoms such as PMS, menstrual cramps, mood changes, menopausal hot flashes. It also increases fertility and balances female hormones. An indication to use this herb would be in any case of debility of female organs, infertility, sexual debility, impotence, and menopause[21]. "Its use increases the secretion of semen, cures barrenness in women and removes disorders of the female genitals. [22]"

Another herb that works with the female reproductive system is vidari kand. This herb is used as an aphrodisiac, alterative, demulcent, diuretic, lactagogue, and rasayana. Indications to use this herb would be in cases of amenorrhea, peri-menopause, infertility, and low milk supply. "Powder of the root macerated in its own juice and given with honey and ghee is recommended for use as an aphrodisiac. Powdered sun-dried root boiled in sugar and butter has the effect of moderating menstrual discharge. [23]"

Dong Quai is another sacred female herb that is antifungal, anti-inflammatory, an emmenagogue, muscle relaxant, circulatory stimulant and tonic, and increases estrogen. It is used for vata-type PMS, dysmenorrhea (uterine cramping), amenorrhea, menopause, and yeast infections.

Cramp bark is used in the female reproductive system as an emmenagogue and antispasmodic in cases of menstrual cramping and pain. Its bitter and astringent qualities make it most beneficial for vata and kapha.

Ashok is great for the reproductive system due to its hemostatic, analgesic, and astringent actions. It is indicated in cases of excess bleeding, anemia, and dysmenorrhea. Its cool, astringent and pitta qualities make it best for pitta and kapha.

Wild yam has a great effect on the reproductive system as a hormone regulator, restores fertility, and impotence. Wild yam has the ability to increase semen, milk, and other hormonal secretions as well as promoting body weight. It is an effective tonic for the female reproductive system [24].

Aloe vera is a special herb that has many special uses for the female reproductive system. Its cooling, sweet, and pungent nature makes it useful for all three doshas. Aloe Vera called "kumari" or "virgin" is said to restore the energy of youth and to renew the female nature. It is a main tonic for the female reproductive system and due to its sweet, bitter and cooling nature it especially benefits pitta and combines well with shatavari [25]. It is also used to promote menstruation and balance the menstrual cycle.

Black Cohosh can be used in the female reproductive system in cases of hot flashes during menopause, amenorrhea, delayed labor, and dysmenorrhea (cramping). It has alterative, emmenagogue, antispasmodic, antimicrobial, and muscle relaxant actions. This herb also contains phytoestrogens [26]

Manjishta, with its bitter, sweet, and pungent qualities is best used for pitta and kapha. In the reproductive system it can be beneficial in treating amenorrhea, dysmenorrhea, menopause, and bleeding disorders. It induces menstrual bleeding and stimulates and contracts the uterus, which is useful in amenorrhea[27].

Kappikachu is a reproductive tonic that can be used in cases of infertility and increasing libido. Its bitter and sweet qualities are best used for kapha and vata. It is contraindicated for use during menses [28].

When a woman is in balance it is classically stated that “Artava (menstrual blood) [should] resemble the juice of lac or the blood of rabbit and which does not stain the cloth after washing (is suitable for producing the embryo)[29]”. This most likely refers to having a consistency of menstrual blood that is not too heavy or clotting. Classically it is also said that the menstruating woman is “The woman whose face is rundown (slightly emaciated) but pleasant (calm); pelvis and breast having throbbings, eyes and abdomen slightly drooping down and who longs for a male (for company and copulation).[30]” This statement is definitely far off from how we currently would describe menstruating women. Many women do not have a calm demeanor during this time due to the high rate of imbalances that are seen in our society.

Ayurvedic techniques can alleviate many symptoms of hormonal imbalances with just a few changes in daily routines for most women. Many women are convinced that feeling intense shifts during each month or times like menopause are normal. These symptoms are actually their bodies telling them that things are not balanced and in sync internally. Instead of accepting these symptoms, women can take back their bodies by working with their diet, lifestyle, routines and herbs to better manage hormonal transitions and thus live a more balanced life.

Endnotes

[1] Astanga Hrdayam volume 1 p. 361-363

[2] Dr. Marc Halpern, *Clinical Ayurvedic Medicine*, Sixth Edition, Chapter 5 p. 2-7, 61-117

[3] Astanga Hrdayam volume 1 p. 361-363

[4] Dr. Marc Halpern, *Clinical Ayurvedic Medicine*, Sixth Edition, Chapter 5 p. 2-7, 61-117

[5] Kathi Keville, *Women's Herbs: Women's Health*, 2007 p. 65-88

[6] Kathi Keville, *Women's Herbs: Women's Health*, 2007 p. 65-88

[7] Claudia Barth, Arno Villringer, & Julia Sacher, “Sex Hormones Affect Neurotransmitters and Shape the Adult Female Brain During Hormonal Transition Periods” *National Center for Biotechnology Information* (January 2015)

[8] Kathi Keville, *Women's Herbs: Women's Health*, 2007 p. 65-88

- [9] Vanitha Hosur Kumari, "Effects of Herbo-Mineral Formulation (Shilajatu Rasayana) in Letrozole-Induced Polycystic Ovarian Syndrome" *BLDE University Journal of Health Sciences* (December 2016)
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- [11] Dr. Claudia Welch, *Balance Your Hormones, Balance Your Life* (First Da Capo Press Edition 2011) 19, 22, 117-127
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- [15] Heather Patisaul & Wendy Jefferson, "The Pros and Cons of Phytoestrogens," *National Center for Biotechnical Information* (March 2010)
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Abstract

Kathi Keville, *Women's Herbs: Women's Health*, 2007 p. 65-88

One week after Ovulation, and thus one week before menstruation, the level of progesterone in the body reaches its cyclical high as estrogen levels are decreasing. Just before menstruation, levels of both estrogen and progesterone drop abruptly. A number of studies suggest that during the first 3 weeks of the menstrual cycle, increasing levels of estrogen stimulate feel-good hormone releasing beta-endorphin, which reduces pain and elevates mood. Rising levels of progesterone at the same time make this natural opium like substance even more potent-that is until reproductive hormones decline prior to menstruation.

Then this endorphin drops too. The result can be feelings of anxiety, along with fatigue, insomnia, pain, & irritability.

Specifically influences LH, FSH and gonadotropin-releasing hormone. These act on the hypothalamus and pituitary glands to normalize secretions of hormones. It increases the ratio of progesterone to estrogen which helps with PMS.

A randomized double blind study on a vitex extract with 170 women found that the improvement of numerous symptoms in over half the women taking vitex was twice that of women taking a placebo.

Certain Neurotransmitters are associated with emotional functioning and mood. Recent studies have shown that estrogen levels are related to levels of the neurotransmitter serotonin which has been directly implicated in PMS. As estrogen levels decrease before menstruation, so do serotonin and gamma-aminobutyric acid, causing emotional imbalance.

Common western treatments of PMS include pain medications, antidepressants, diuretics, and particularly progesterone or estrogen-progesterone birth control pills.

Various studies show that relaxation methods such as yoga, meditation, and aerobic exercises such as running, walking, swimming, and bicycling can relieve PMS symptoms. They do so by altering brain chemistry and boosting endorphins. Regular exercise helps ease the mild depression of PMS. Women with PMS who exercise on a regular basis not only feel less sadness, guilt, fear, and hostility, they also develop better concentration and have less pain and water retention. They feel less anxiety when faced with stressful task & can relax more easily”

Claudia Barth, Arno Villringer, & Julia Sacher, “Sex Hormones Affect Neurotransmitters and Shape the Adult Female Brain During Hormonal Transition Periods” *National Center for Biotechnology Information* (January 2015)

Many brain regions have been demonstrated to express high densities for estrogen and progesterone receptors such as the amygdala, the hypothalamus, and the hippocampus. The brain represents an important target for estrogen and progesterone effects. The classical estrogen receptors and progesterone receptors are highly expressed in brain areas involved in emotion and cognition such as amygdala and hippocampus. Ovarian hormones can act on multiple receptor types such as serotonin and dopamine.

Along with the major hormonal transition periods, subtle changes in endogenous sex hormones as occur during monthly cycle have also been associated with changes in mood.

Most experts agree that estrogen has an overall facilitating effect on dopaminergic neurotransmission. Recent studies report on the interaction between estrogen and dopamine on cognitive domains such as decision making, fear extinction, and memory bias.

The serotonergic system serves a multitude of role, most prominently balancing mood.

For women, hormonal transitions across their lifespan represent periods of elevated vulnerability to development of mood disorders: elevated & fluctuating sex hormones seems to predispose women to mood-disturbance, beginning with a heightened risk of developing a depressive episode following puberty.

An evaluation of 44 studies in fertile women found a positive correlation between suicide attempts and menstrual phases that are characterized by low estrogen levels. In healthy

women, some studies report negative premenstrual changes in mood as common and suggest that the majority of women of reproductive age describe a cycle dependent increase in negative emotions, such as irritability, impulsivity, fear and low mood.

With the loss of ovarian function and the associated fundamental changes in the hormonal environment, it is not surprising that this phase of a woman's life is accompanied by changes in eating, metabolism, behavior, mood, sexuality, immune response, and cognitive function.

The concept that the perimenopausal phase represents a vulnerability period for developing a depressive illness is supported by evidence for a high rate of new onset major depressive episodes.

Vanitha Hosur Kumari, "Effects of Herbo-Mineral Formulation (Shilajatu Rasayana) in Letrozole-Induced Polycystic Ovarian Syndrome" *BLDE University Journal of Health Sciences* (December 2016)

Major cause of female infertility in recent years is polycystic ovarian syndrome. Shilajatu Rasayana has shown a significant result in letrozole induced PCOS by regulating hormones, reduction of cystic follicles, maturation of ovarian follicles, and decreasing the increased ovarian and uterine weight.

Shilajatu Rasayana contains shilajit bhasma, loha bhasma, vaikranta bhasma, triphala churna, and trikatu churna having antioxidant, immunomodulatory, hypoglycemic, and hypolipidemic effects, and various elements such as zinc, magnesium, chromium, Vitamins B, A, Omega Fatty acids, enzymes and phytosterols having hormonal balancing and estrogenic effects which have shown a significant result in letrozole induced PCOS.

Eileen Conaway, "Bioidentical Hormones: An Evidence-Based Review for Primary Care Providers," *Journal of the American Osteopathic Association* (August 2010) 153-163

In the aftermath of the unexpected adverse results of the Women's Health Initiative (WHI) trial in 2002, women in the U.S. began to look for options other than traditional hormone replacement therapy for the reduction of menopausal symptoms.

Bioidentical hormones are derived from plant sources and are termed bioidentical because it is claimed that they are structurally identical to endogenous hormones, not just human hormone receptor binders. Like synthetic & Semisynthetic hormones, bioidentical hormones are derived in a laboratory, not harvest from endogenous sources.

Ali Al-Fahham, "Hormonal Imbalance and Female Infertility," *ResearchGate* (January 2016)

Numerous medical conditions can contribute to infertility. In fact, most cases of infertility are due to other medical conditions. These disorders damage the fallopian tubes, interfere with ovulation, or cause hormonal complications.

Hormonal disturbances have been considered of great importance in the knowledge of causes and diagnosis of female infertility. An increase in FSH in women may indicate a reduction in the production of good quality eggs and embryos for fertilization. A woman's chances for pregnancy may be lower than expected for her age. Higher than normal levels of LH in a woman may mean the ovaries are absent or not functioning. In a young woman, high levels may mean that puberty is early. Low levels of LH in the blood may indicate anorexia, an issue of the pituitary gland, stress or damage to the hypothalamus.

Most of the studied women were either overweight or obese. Estrogen is produced by the fat cells and primary sex organs, thus state of high body fat or obesity causes increase in estrogen production which the body interprets as birth control, limiting the chances of getting pregnant

Significant increase levels of FSH with age, results in disturbances in the ovarian functions which are directly correlated with infertility

Heather Patisaul & Wendy Jefferson, "The Pros and Cons of Phytoestrogens," *National Center for Biotechnical Information* (March 2010)

A litany of health benefits including lower risk of osteoporosis, heart disease, breast cancer, and menopausal symptoms are frequently attributed to phytoestrogens but many are also considered endocrine disruptors, indicating that they have the potential to cause adverse health effects as well. The question of whether or not phytoestrogens are beneficial or harmful to human health remain unresolved. The answer is likely complex and may depend on age, health status, and even the presence or absence of specific gut microflora."

"Dose, dietary composition, phytoestrogens administered and duration of use vary considerably across epidemiological studies making them difficult to intercompare.

At SUNY Downstate Medical Center treated 3 women for a similar suite of symptoms including abnormal uterine bleeding, endometrial pathology, and dysmenorrhea. In all three cases, symptoms ameliorated after soy intake was reduced or eliminated, demonstrating that consumption of particularly high isoflavone levels can compromise female reproductive health. The youngest of the three had been on a soy rich diet since age 14 and was experiencing secondary infertility, a condition that resolved and resulted in a pregnancy once she reduced her soy consumption.

Consumers should be aware that soy contains endocrine disrupting compounds and make dietary choices accordingly. For a typical consumer, alarm over soy products is likely unnecessary but so is the belief that a soy-rich diet will alleviate all ills. Moderation is likely key and the incorporation of real foods as opposed to supplements or processed foods to which soy protein is added, is probably essential for maximizing health benefits.