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## A review on natural and dietary supplements used to cure hormonal imbalance: A crucial concern in females

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### Abstract

The review focuses on different types of herbals, food and plant based supplements used to treat hormonal imbalance. Hormonal imbalance refers to increase or decrease in levels of hormone secretion in our body. In present scenario we have observe that hormonal therapy, drugs cause major side effects like vaginal bleeding, hot flushes, hair thinning, muscle and bone changes and weight gain. Also leads to diseases like PCOS/PCOD, infertility problems, irregular periods, hypogonadism, acromegaly etc. 60-80% of females and 30-50% of males are facing problems of hormonal imbalance. So, in order to eradicate these major side effects and effectively treat hormonal imbalance natural supplements have emerge as boon. Some of herbs, food and plant-based supplements used to cure hormonal imbalance are maca, liquorice root, chasteberry, ashwagandha, probiotics, omega-3 fatty acid, DIM, DHEA are also used to treat hormonal imbalance effectively.

**Keywords:** Hormonal imbalance, DIM, DHEA, probiotics, PCOS/PCOD, acromegaly

### Introduction

Historically natural supplements like herbal and plant based materials were used to treat diseases like hormonal imbalance and eradicate the major side effects caused by it. The acceptance of natural supplements has been escalated as it does not cause any side effect or harm to human body [1]. The market of natural supplements has been raised by 15% for balancing estrogens and progesterone level in human body [2].

Hormones are chemical messengers that are emanating by endocrine glands required to maintain reproductive and metabolic health of humans. Decrease or increase in level of hormones secretion leads to hormonal imbalance. Approx 59.6% women in India are facing problem of hormonal imbalance because of lifestyle causes [3]. Natural supplements like maca, liquorice, omega 3 fatty acid, vitamin B and D, ashwagandha, probiotics, turmeric, DIM, DHEA etc are used to cure hormonal imbalance effectively as drugs used to treat hormonal imbalance leads to major side effect like PCOS/PCOD, infertility problems, irregular periods, hypogonadism, acromegaly etc [4].

The continuous upgrades have done to emphasise on more use of natural supplements and organic substances to cure hormonal imbalance in order to eradicate these major side effects. Recently herbal natural supplements like Fenugreek, Black Cohosh, Vitex, Fennel, Soya, Anise, Ginseng, etc are used to balance estrogens and progesterone imbalance [5]. The plant based natural supplements like DIM, DHEA, lavender oil, clarry sage oils, mushroom and adaptogens plants are also used to cure hormonal imbalance. Moreover, dietary natural supplements like probiotics, omega 3 fatty acid, vitamins etc also used to improve hormonal activity in human body [6]. The objective of this paper is to highlight these natural supplements usage for hormonal imbalance to eradicate side effect like vaginal bleeding, hot flushes, hair thinning, muscle and bone changes and weight gain.

### Hormonal Imbalance

Increase or decrease in level of secretion of hormones by endocrine glands is termed as hormonal imbalance. It has been emerging as major concern and epidemic disease for women. It is a major concern because in 59.6% of women suffering from hormonal

imbalance root cause is unknown. Any disruption in hormones leads to several diseases like PCOS/PCOD, infertility problems, irregular periods, hypogonadism, acromegaly etc. Moreover, it can cause disturbance menstrual cycle [7].

### Causes of hormonal imbalance

- **Lifestyle changes** - improper lifestyle changes such as improper sleep, poor diet, lack of exercise and physical activities can emerge as source of hormonal imbalance.
- **Stress** - chronic stress for longer period of time cause disruption in secretion of hormones from endocrine glands.
- **Natural changes** - during body's natural changes like puberty, menopause and andropause hormones get shift which can lead to hormonal imbalance.
- **Genetics** - some time it is transfer through genes from mother to baby.
- **Medications** - some of drugs, hormonal contraceptives and hormonal therapies can alter the hormonal levels.
- **Medical conditions** - several diseases that may peruse in human body can also be cause of hormonal imbalance like hypothyroidism, diabetes, PCOS/PCOD, Addison's disease, acromegaly etc.
- **Obesity and weight gain** - increase in weight or obesity leads to several problems that in turn disturbs body's metabolism and cause hormonal imbalance [8].

### Symptoms of hormonal imbalance

- Dark skin tone under arms, around neck which is called as acanthosis nigricans.
- Obesity and weight loss
- Dry skin and hair in different parts of body.
- Cold and hot temperature or changing weather cannot be tolerated.
- Slow heart beat (tachycardia)
- Hair loss
- Hirsutism
- Hot flashes
- Vaginal atrophy
- Vaginal dryness
- Heavy periods<sup>8</sup>

### Natural herbal supplements used to cure hormonal imbalance

Few decades ago, natural herbal supplements have been used as alternative tool for treating hormonal imbalance. Near about 300 herbs are effectively used to treat hormonal imbalance. The medicinal plants or herbs contain substance like phytoestrogen and phytoprogestosterone that mimics the action of estrogen and progesterone [9]. Moreover, some herbal plant supplements have anti-androgen activity which reduces the conversion of testosterone and androstenedione to estrogen in peripheral tissue. These natural herbal plant supplements help to diminish the symptoms like hot flashes, vaginal bleeding, heavy periods etc. Some of them are listed below [10].

1. **Ashwagandha:** Ashwagandha root powders, tea and herbal supplements have been widely used in market for treating hormonal imbalance. It helps to reduce primary symptoms of hormonal imbalance like decrease stress level, balance sleep, etc. Ashwagandha

supplements like capsule, tea and root powders act by reducing cortisol levels in human body [11].

2. **Lemon balm:** Lemon balm is available in form of tea that reduces the cortisol levels and increases dopamine level in human body therefore help in promoting calmness and improve mood which can be helpful to balance hormones [12].
3. **Valerian:** It is a multifaceted herbal supplement used in form of capsule and tea. It effectively treats symptoms like hot flashes, menopausal and postmenopausal symptoms in women. It contains phytoestrogen that helps to balance estrogen levels in human body, premenstrual symptoms are also balanced by this herb [13].
4. **Shatavari:** It is called as Queen of herbs. It is available in form of tea and capsule. The phytoestrogen present in shatavari is used to regulate ovarian cycle, treat female reproductive issues like infertility, PCOS etc. This herbal plant also has properties of aphrodisiac [14].
5. **Vitex:** This herb is present in capsule form in market. It acts by improving PMS, decreasing level of prolactin and increasing level of dopamine in body. It improves level of progesterone, promotes ovulation and fertility in females. Moreover, can be used to eradicate the menopausal symptoms in women [15].
6. **Ginger:** Ginger contains flavonoids and phytoestrogen which is used in equilibrating ratio of estrogens and progesterone. It is present in form of teas in market that help to regulate hormonal imbalance and cure disease like PCOS and PCOD. Ginger also contain active constituents gingerol, flavonoids etc that are used to maintain time period of menstrual cycle [16].
7. **Black cohosh:** It is present in form of capsule in tea. Black cohosh maintains hormone level by modulating effect of estrogen in human body, promoting ovulation in females and helps to improve fertility. It minimizes the symptoms like stress, sleep, and cure hormonal disorders like PCOS and PCOD [17].
8. **Evening promise oil:** This oil is obtained from seeds of primrose plant. Seeds contain GLA (Gama lanolic acid) and omega-6-fatty acid which are essential for promoting good hormonal health. It is used to eradicate symptoms like mastalgia, PMS, and menstrual cramps. GLA present in seeds is essential as it help in production of prostaglandin which is responsible for regulating hormone level in human body [18].
9. **Dandelion root:** This herbal drug supplement is available in powder and tea form in market. It is used as cleansing tool for removing the excess hormones produce in body. Therefore, dandelion root can be used to minimize the symptoms of hormonal imbalance [19].
10. **Fenugreek:** Fenugreek seeds and its soaked water are potential candidate to balance insulin hormone. It escalates the milk production by promoting growth of prolactin hormone. It is also responsible for elevating the testosterone levels by inhibiting enzyme that converts testosterone into estrogen [10].
11. **Sage:** It is an herbal supplement available in form of tinctures and syrups used for temperature changes that occurs during hormonal imbalance. It is used to cure symptoms like hot flashes, night sweats, and stress levels in women. Nervous exhaustion is major problem with those women suffering from hormonal imbalance which can also be cured by use of sage [10].

**12. Turmeric:** Turmeric contains curcumin present in it as active constituent which help to maintain blood sugar level that arise from the polycystic ovary syndrome. Curcumin also helps in maintaining liver condition which plays vital role in hormonal balance. Moreover, it decreases inflammatory markers that can lead to chronic conditions [20].

**13. Motherwort:** Hormonal symptoms like hot flashes, stress, night sweats, vaginal bleeding are often which directly affects our nervous system. To eradicate these symptoms of hormonal imbalance motherwort plays major role by reducing heart palpitations which relate to anxiety, stress, temperature change in body. Moreover, it helps to produce relaxation, support uterus, and is used to treat PMS and PCOS [20].



**Natural dietary supplements used balance hormones**

Hormonal imbalance which is a major concern of females has been observed in 70-80% of women. Medicines and pills have developed major side effects like vaginal bleeding, hot flushes, hair thinning, muscle and bone changes and weight gain, PCOS/PCOD, infertility problems, irregular periods, hypogonadism, acromegaly etc. Dietary supplements are primary source for balancing hormone. The food we consume is nowadays processed in industries or by harmful chemicals which destroys its nutrients hence, food rich in vitamins like vitamin C, B and D can help to regulate hormones in our body. Moreover, minerals or food rich in magnesium, zinc, selenium, omega3 fatty acid etc should be intake in diet as they have power of balancing hormone. Some of dietary supplements are listed below [21].

**1. Probiotics:** They are the products which contain live bacteria or yeast that helps to reinstate the stability of

healthy microbes. Stability of microbes in human body is destroyed by use of processed food, stress, and unbalance diet and lifestyle changes. Probiotics sauerkraut, kefir, and kombucha contains bacteria Lactobacillus, Bifidobacterium, or the yeast Saccharomyces boulardii that aid to contribute in balancing hormones like insulin, cortisol, melatonin, and leptin [21].

**2. Vitamin B rich foods:** Different types of vitamin B are used to regulate different hormones in our body. Various types of vitamin are given below in table 1 with hormone they balance. Vitamin B rich food like meat, eggs, fish, dairy products, poultry, seeds and green leafy vegetables are main source to regulate hormones naturally [21].

**Table 1:** Different types of vitamin B used to balance hormones in females

Types of vitamin B	Hormone balanced by them
Vitamin B1	Maintains PMS symptoms by regulating estrogen and progesterone levels.
Vitamin B2	Enhance the level of estrogen
Vitamin B5	Used in adrenal hormone production
Vitamin B6	decrease estrogen, increases progesterone, and helps manage PMS symptoms
Vitamin B9	Increase progesterone level

**3. Vitamin D:** Vitamin D is naturally obtaining by sun rays. Vitamin D elevates level of estrogen and progesterone in our body. Therefore, it provides help women of reproductive age and women over 65 to regulate hormones like progesterone, estrogen, insulin and thyroid hormone [22].

**4. Zinc rich foods:** zinc rich foods like nuts, whole grain, meat, fish, legumes like chick peas, vegetables like beans and kale contains 100g of zinc, dark chocolate

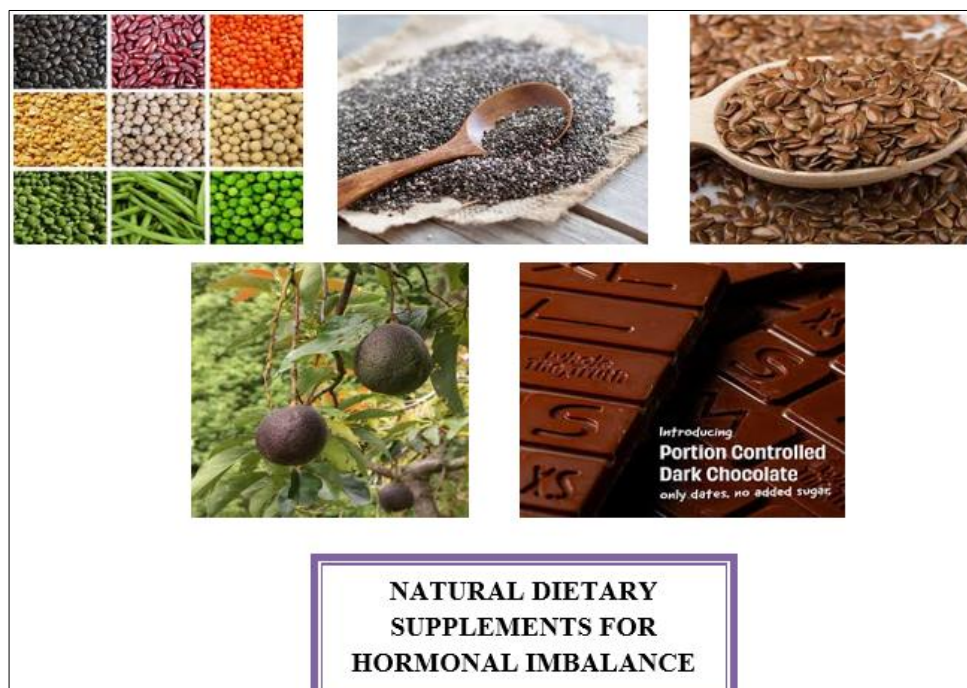
contain 3.31mg of zinc in one bar have various functions in regulating hormone. These functions of zinc used in balancing hormone are given below [22].

- Elevate production of growth hormone.
- Help in enhancing level of estrogen, progesterone etc.
- Reduce symptoms of PMS.
- Help in functioning of insulin and thyroid hormone
- Help in metabolism of thyroid hormone.



- 5. Magnesium rich food supplements:** Food products like almonds, beans, spinach, chia seeds, avocado, black beans and quina are richest source of magnesium. This magnesium obtain from them is essential in maintaining cortisol level, estrogen and progesterone level, insulin and thyroid hormone level. It reduce symptoms of hormonal imbalance like PMS, PCOS, stress, sleep issues etc [22].
- 6. Omega 3 fatty acid:** Omega-3 fatty acids are found in foods, such as fish and flaxseed, and in dietary supplements, such as fish oil. The three main omega-3 fatty acids are alpha-linolenic acid (ALA),

eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA). ALA is found mainly in plant oils such as flaxseed, soybean, and canola oils. omega-3s can also improve cell function and impact hormone production. An increased prostacyclin/thromboxane ratio induced by omega-3 FA can facilitate pregnancy in women with infertility problems by increasing uterine blood flow. Supplementation with omega-3 FA during pregnancy lowers the risk of premature birth and can increase the length of pregnancy and birth weight by altering the balance of eicosanoids involved in labor and promote fetal growth by improving placental blood flow [23].



### Conclusion

The hormonal imbalance is the major concern in females. The problems of hormonal imbalance have been escalated 60-80% in females and 30-50% in males. The present scenario it has been observed that hormonal therapy, drugs causes major side effects like vaginal bleeding, hot flushes, hair thinning, muscle and bone changes and weight gain. To get devoid from side effects of drugs and drug therapy herbal natural supplements like Fenugreek, Black Cohosh, Vitex, Fennel, Soya, Anise, Ginseng, the plant based natural supplements like DIM, DHEA, lavender oil, clary sage oils, mushroom and adaptogens, dietary natural supplements like probiotics, omega 3 fatty acid, vitamins etc are acting as magic remedy to cure hormonal imbalance naturally. The objective of this paper was to highlight these natural supplements usage for hormonal imbalance to eradicate side effect like vaginal bleeding, hot flushes, hair thinning, muscle and bone changes and weight gain.

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