

## Assessment of Yoga Therapy on Estrogen Hormone - A Case Study

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### Abstract

A study to assess the effect of yoga therapy on estrogen hormone in subjects with problem regarding menstruation conducted at Department of Human Consciousness and Yogic Sciences, Mangalore University 20 Volunteer subjects from, Mangalore University ladies hostel with age group 20-25 years were suffering from problem regarding menstruation were selected for the study. They were classified into 2 groups, 10 in each group. Estadiol hormone test was done to assess the level of Estrogen hormone in the blood stream and B.P, weight, questionnaire regarding the problem were measured for both the groups before and after the yoga therapy. Selected yogic practices were given to the experimental group only six days per week for one hour, for a period of 30 days. The results of various tests were analysed statistically through student 't' test using SPSS software. Result was compared between the groups. After yoga therapy, the experimental group showed significant improvement at a level of significance  $p < 0.05$  with a significant p value **0.026**. There was no significant change in control group. The results show that, level of hormone normalised by the yoga therapy, menstruation has regularised and other symptoms regarding the problem have reduced in experimental group compared to the control group. Therefore it is evident that yoga therapy helps in the reducing menstrual problems.

**Keywords:** Estradiol, Estrogen hormone, yoga therapy.

### Introduction

Menstruation is the process when little girls grow into women and certain changes takes place in their body. Menstrual cycle occurs in the uterus and the ovary as a part of making sexual reproduction possible. Most of the time due to several factors menstrual bleeding is absent, irregular, excessive along with pain which may be considered as problem regarding menstruation. Hormone plays an important role in regulating this process. Hormonal imbalances occur when there is too much or too little of a hormone in the blood stream leading to unexplained weight gain, depression, menstrual disorders etc<sup>8</sup>. Estrogen is the hormone responsible for the sexual development of girl to reach puberty<sup>9</sup>. It controls the growth of the

uterine lining during menstrual cycle. Low estrogen levels cause irregular periods or absent periods, mood swings, depression, fatigue, trouble concentrating etc.

Increasing incidence of menstrual disorder has provoked studies of how yoga can help in handling this by normalising the hormonal level and in reducing the associated symptoms. It is proved in various studies that regular practice of yoga can help to regularise the menstrual cycle. Preventive, promotive and curative aspect of yoga helps in the stability of mind and body. Yogic practices like kriyas, asanas, pranayamas, and relaxation techniques help to relieve the physical and mental stress and helps in maintaining the normal level of hormones in the body.

This study was an effort to know the effect of yoga therapy on estrogen hormone.

### **Review of literature:**

*MaharshiPatañjali* defines yoga as ‘*yogahcittavrutti nirodhah*’.<sup>1</sup> He explained various therapeutic aspects in his yoga sūtras. He describes that the mental distraction is the root cause for disease. According to Nathamuni’s *Yoga Rahasya*, Women, when compared to men, have a special right to practice yoga. This is because it is women who are responsible for continuity of the lineage.<sup>2</sup>

*Adhikarovicheshenastreenampumby onigadhyate*’

*Santhanatharuvistharestreesharira m hi kaaranam// chapter I - 14*

The body of women when taken over by disease fails its purpose (that of conception). Therefore, all women in this world have a special right to practice yoga.<sup>3</sup>

Dr. K. Krishna Sharma and et al in their study on the effect of yoga therapy on menstrual disorder with reference to hormonal discrepancy, after the yoga therapy for one month estradiol test result of experimental group was significant with p value 0.0216 when compared to control group. This study depicts that yogic practices are helpful in managing menstrual disorders.<sup>4</sup>

Tejwani N et al in their study entitled “Effect of yoga in menstrual disorder” explain that by the practice of yoga endocrine glands can be brought under control and the blood supply regulated through the required part of the body. They concluded that yoga programme containing asana, pranayama, and relaxation techniques is formulated for treatment and prevention of gynaec issues.<sup>5</sup>

Monika Rani and et al studied impact of yoga nidra on menstrual abnormalities in females of reproductive age which

demonstrated the efficacy of yoga nidra on hormone profile in patients with menstrual irregularities. They concluded that yoga nidra was helpful in patients with hormone imbalances, such as dysmenorrhea, oligomenorrhea, menorrhagia, hypomenorrhea.<sup>6</sup>

Dr. K. Krishna Sharma and et al in their study effect of selected yogic practice on menstrual disorder in high school girls in which all the subjects got beneficial result and yoga helped them in controlling menstrual disorder.<sup>7</sup>

### **Hypotheses:**

It was hypothesized that, as a result of Yoga therapy-

- There will be significant difference between pre and post estradiol test.
- There will be reduction in the symptoms of menstrual disorder

**Objective:** To assess the effect of yoga therapy on estrogen level in subjects having problem regarding menstruation.

### **Variables:**

Independent variables: Yoga therapy

Dependent variables: Estrogen hormone

### **Materials and methods:**

The present study was conducted to assess the effect of yoga therapy on estrogen hormone level in hostel ladies with problem regarding menstruation with age group of 20- 24 years. 20 Volunteer subjects having problem regarding menstruation were randomly selected. Subjects were classified into two group i.e experimental and control with 10 subjects each.. A detailed case history of all the subjects were taken. B.P, Weight and hormonal test i.e Estrogen hormone were done before and after the study for both the groups. The experimental group was given selected yogic practices six days per week, one month duration. Yogic practices were given in a sequence and individual care was taken. But control group

continued with normal lifestyle. To analyse the significance of the result statistically, paired “t” test was selected.

**Parameter of the study:**

1. Estrogen (Estradiol) test: It is a blood test that measures the amount of Estrogen (Estradiol) hormone in the blood. This test is done when the women is having irregular menstrual cycle or abnormal menstrual bleeding.

**The following yogic practices taught to experimental group for a period of 40 days.** Swastikasana, Vajrasana, Supta Vajrasana, Tadasana 1, Trikonasana, Parsvakonasana, Prasaritapadottanasana, Paschimottanasana, Purvottanasana, Pavanamuktasana, Bhujangasana, Shalabhasana, Dhanurasana, Janushirshasana, Baddhakonasana, Upavistakonasana, Uttanapadasana, Ujjayee, Anuloma Viloma, Bhastrika, Shavasana.

**Results**

All the subjects under the study were tested before and after 40 days of yoga training. An overall improvement in experimental group is seen. Table 1 shows improvement in the parameters for every individual of experimental group. But no such improvement in control group i.e table 2. This shows how yoga has helped in normalising the estrogen hormone level. In the subjects of experimental group the complaint of abdominal pain, fatigue etc was reduced during the next menses. They experienced freshness, calmness, reduced tension, improved working ability, positive thinking etc after few days of yoga practice. But no such changes in control group were found.

A Paired “t” test was applied for the parameter and found out the value for both experimental and control groups. The results of “t” tests are as follows.

**Table 1: The values of Estrogen hormone of experimental group**

| Parameter        | Mean   |       | S.D    |       | t value | p value      | Result   |
|------------------|--------|-------|--------|-------|---------|--------------|----------|
|                  | Before | After | Before | After |         |              |          |
| Estrogen hormone | 167.2  | 119.7 | 100.5  | 88.27 | 2.6486  | <b>0.026</b> | <b>S</b> |

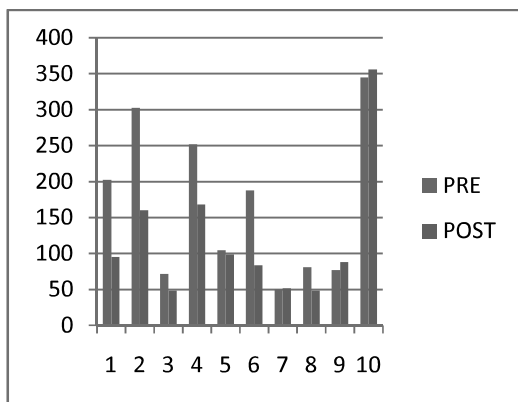
S- Significant

**Table 2: The values of Luteinizing hormone of Control group**

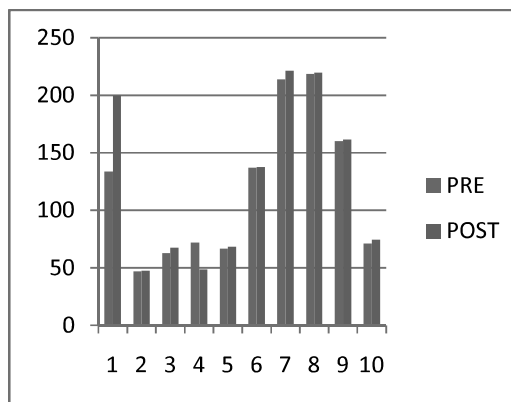
| Parameter        | Mean   |       | S.D.   |       | t value | p value | Result |
|------------------|--------|-------|--------|-------|---------|---------|--------|
|                  | Before | After | Before | After |         |         |        |
| Estrogen hormone | 119.3  | 125.6 | 60.5   | 68.05 | -0.884  | 0.599   | NS     |

NS-Non Significant

**GRAPHICAL REPRESENTATIONS :**



**Experimental group- Estrogen hormone**



**Control group- Estrogen hormone**

**DISCUSSION:**

The results of experimental group in this study were statistically significant. At the end of the study the results concluded that there is significant improvement of estrogen hormone at the level of significance  $p < 0.05$  with a significant  $p$  value **0.026** in experimental group. In control group no significance was found i.e  $p$  value 0.599. Positive feedback from the subjects of experimental group of experiencing improved working ability, reduction in the pain and stress is a proof that after the yoga therapy helped in improving their quality of life. Only a few studies regarding the above topic have been done and in those studies we can see the efficiency of yoga therapy. This is a small effort to assess the effect of yoga therapy on regularising the menstrual cycle and reducing the other problems associated with it. The result is evident that all the subjects of the experiment group

responded to the therapy positively. Hence it is proved that yogic practices have a significant impact in improving the Estrogen hormone. Considering the changes in the levels of the hormone in the blood stream the efficacy of yogic practices on menstruation were sufficiently proved. But the variation of rate of success could be dependent on the regularity of practice, lifestyle, dietary change etc. Further study can be conducted by including other parameters, increasing the subjects and also by extending the duration of study.

**Conclusion:**

1. Yoga therapy helps efficiently in regularising the Estrogen hormone.
2. Selected yogic practices assist to reduce the stress and physical strain.
3. In a more controlled set up, may lead better results.

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