

# Influence of Yoga Therapy on Serum Creatinine and Lh-Fsh Ratio Among Girls Suffering with Polycystic Ovarian Syndrome

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## Abstract

The purpose of the random group experimental study was to find out the efficacy of Yoga Therapy on Serum Creatinine and LH-FSH ratio among girls suffering with Poly Cystic Ovarian Syndrome For the purpose of the study, 30 girls with Poly Cystic Ovarian Syndrome were selected randomly using random sampling method from Chennai between the age group of 25 and 30 years and they were divided into two groups I, and II with 15 subjects each. It was hypothesized that there would be significant differences among the girls with PCOS on selected physiological and hormonal variables such as Serum Creatinine and LH-FSH ratio than the control group. Preliminary test was conducted for two Groups on Serum Creatinine and LH-FSH ratio before the start of the training program. Group I subject were given Yoga therapy for 60 minutes. 6 days a week for a total period of twelve weeks. Group II (Control Group) were in active rest. After the experimental period, the two groups were retested again on the same selected dependent variables. Analysis of co-variance (ANCOVA) was used to find out the significant differences between the experimental group and the control group. The test of significance was fixed at 0.05 level of confidence. The results of the study proved that the Experimental Group showed significant differences on selected physiological and hormonal variables such as Serum Creatinine (Decreased) and LH-FSH ration (Decreased) than the Control Group due to Yogic practices among girls with Poly Cystic Ovarian Syndrome. The hypothesis was accepted at 0.05 level of confidence. Hence it is concluded that Yogic therapy is beneficial to the girls with Poly Cystic Ovarian Syndrome to maintain healthy Serum Creatinine and LH-FSH ratio. 200

**Keywords:** Yoga Therapy, Serum Creatinine, LH-FSH ratio, Poly Cystic Ovarian Syndrome.

## Introduction

Girls in addition to being the back bone of family also started stepping out of the house and shine professionally as well in the 21 centuries. The stress and strain they go through in day-to-day activities are posing a threat on the overall physical as well as mental vitality and vigor of girls especially their reproductive health. Poly Cystic Ovarian Syndrome has become common among girls of reproductive age.

Polycystic Ovary syndrome (PCOS) is a hormonal disorder causing oligo-ovulation. excess androgen level and polycystic ovarian morphology. Genetically the high exposure of androgens in the uterus for pregnant women can cause epigenetic

reprogramming of fetal reproductive tissue which may affect the hypothalamic-pituitary-ovarian axis of foetus leading to altered folliculogenesis. It has been found that there is 20-60% of familial occurrence of Poly Cystic Ovarian Syndrome in first-degree relatives. Lifestyle habits involves mutating lifestyle habits such as nutrient deprived diet, ingesting adulterated and junk foods, lack of physical exercise, changing circadian rhythm, psychological pressure built on manipulating personal and professional life, indulging in unhealthy habits say smoking and alcohol consumption contribute towards the pathogenesis of Poly Cystic Ovarian Syndrome

## Causes

- **Hereditary**

- Unhealthy Diet Pattern
- Less immunity
- Storage of toxins
- Insulin resistance and obesity.

### **Symptoms**

- Menstrual disorders such as oligo menorrhea/amenorrhea/hypermenorrhea
- Abdominal Obesity
- Infertility
- High Androgen level
- Hirsutism (Male pattern hair growth) and baldness
- oily and acne prone skin
- Acanthosis Nigricans (Dark underarms).
- Anxiety
- Depression

### **Complications**

- Endometrial cancer
- Gestational diabetes
- Pre-eclampsia
- Sleep Apnea,
- Cardiovascular disease
- High Tri glycerides
- Low HDL cholesterol levels
- High blood pressure
- High sugar levels
- Inflammation of liver
- Depression

### **Yoga Therapy for Poly Cystic Ovarian Syndrome**

Yoga therapy works at levels much more subtle and deeper than just the physical body ensuring a holistic treatment for Poly Cystic Ovarian Syndrome. Surya Namaskar and Asana (Yoga postures) helps to open up the pelvic area and promotes blood flow to the uterus and massages them soothing inflammations, enhancing their functions. It also stimulates the secretions of entire endocrine system. Regular practise also aids in shedding the excess fat in the body. Pranayama nourishes the body with abundant of pranic energy (life force) which is also very useful to speed up the healing process. Yoga nidra involves conscious relaxation of whole body and exploration of deep impressions stored in the subconscious mind

resulting in unwinding them, alleviating the unwanted stress aiding in calm and tranquil mind.

### **Objectives of the study**

The objectives of the study were to find out whether there would be any significant difference on selected Bio Chemical variable such as Serum Creatinine among girls with Poly Cystic Ovarian Syndrome due to Yoga Therapy.

The objectives of the study were to find out whether there would be any significant difference on selected Hormonal variable LH-FSH ratio among girls with Poly Cystic Ovarian Syndrome due to Yoga Therapy.

### **Methodology**

To achieve the purpose of the study, among the 60 Girls were selected in Queen Marys College Chennai, 45 subjects were filtered and 30 Students suffering with PCOS were selected randomly using random sampling method, between the age group of 25 and 30 years and they were divided into two groups, experimental and Control group with 15 subjects in each group. Random group Experimental Design was used for the study. Preliminary test was conducted for the two groups (I and II) on the selected dependent variables such as Serum Creatinine and LH-FSH ratio before the start of the training program. Group I subject were given Yoga therapy for 60 minutes, six days in a week for a total period of twelve weeks.

Yoga Therapy involving Loosening the Joints, Surya Namaskar followed by Asanas such as Trikonasana, Viparitarakani, Halasana, Matsyasana, Bhujangasana, Dhanurasana, Ushtrasana, artha matsyendrasana, Maha mudra and Pranayama practices such as Kapalabhati, Nadishodana, Ujjayi followed by Yoga Nidra along with the Yogic diet involving balance of vata and kapha dosha. Group II (Control Group) subjects were permitted to undergo normal routine work during the training period.

After eight weeks, the two groups were retested again on the same selected dependent variables such as Serum Creatinine and LH-FSH ratio. Analysis of Co-Variance (ANCOVA) was used to find out the significant differences between experimental group and the control group. The test of significance was fixed at 0.05 level of confidence.

### **Results and Discussion**

The data collected from the two group's pre and post training period on selected variables were statistically analyzed using Analysis of Co-variance (ANCOVA).

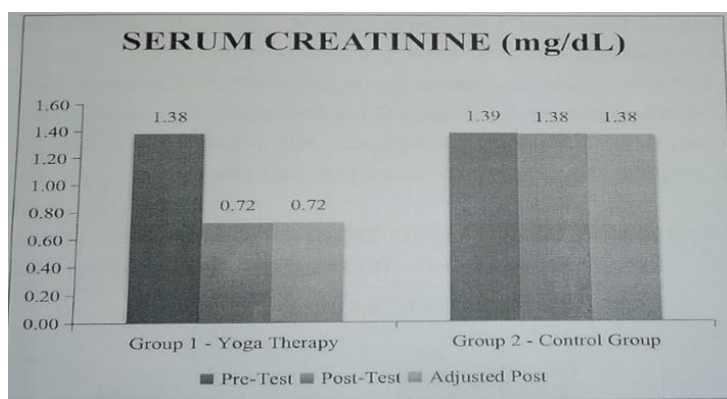
**Table I:** Computation of Analysis of Covariance on Training Group and Control Group on Serum Creatinine (Scores in Mg/Dl)

TEST	GROUP I YOGA THERAPY	GROUP 1 CONTROL GROUP	SOURCE OF VARIANCE	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SUM OF SQUARES	F- RATIO
<b>Pre</b>	1.38	1.39	Between	1	1.39	1.39	1.97
			With in	28	19.68	0.70	
<b>Post</b>	0.72	1.38	Between	1	3.27	3.27	8.86*
			With in	28	10.33	0.37	
<b>Adjusted Post</b>	0.72	1.38	Between	1	3.23	3.23	30.31*
			With in	27	2.87	0.11	

\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 28 (df)=4.2, 1 and 27 (df)=4.21)

The F value mentioned in the tabular column showcases that pre-test score 1.97 was smaller than the required F value of 4.20 to be significant at 0.05 level which denotes that there was no considerable difference between the experimental and control group. On the other hand, F value obtained from the post test scores 8.89 was greater than the recommended F value 4.20 which clearly conveys that there is significant difference between the post test scores of experimental and control groups. On evaluating the pre and post-test values of the experimental and control group adjusted mean values

were computed and put through the statistical calculation. The adjusted post- test F value 30.31 was greater than the recommended F value of 4.20. This confirms that there was a significant difference on Serum Creatinine (decreased) due to 12 weeks of Yoga therapy treatment among girls suffering with Poly Cystic Ovarian Syndrome. The outcome of this study on Serum Creatinine is in compliance with the research work carried over by Pandey Rajendra Kumar et al., (2017) For better understanding of this study the ordered adjusted mean values are represented as a graphical image in Figure [1].

**Fig 1:** Bar Diagram Showing the Mean Differences Among the Groups on Serum Creatinine (Scores in Mg/Dl)

\*Significant at 0.05 level of confidence

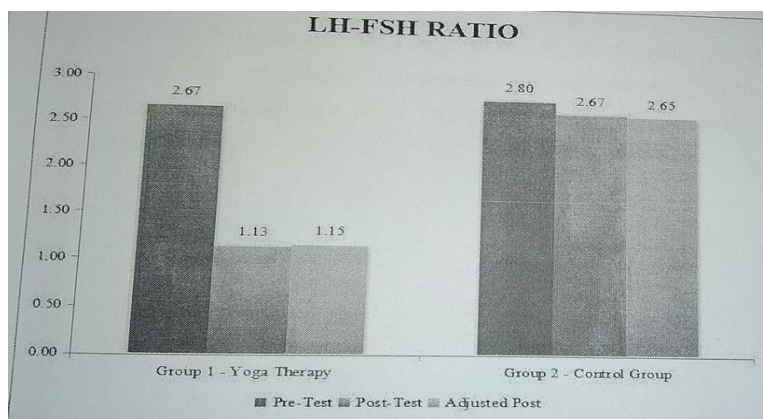
**Table II:** Computation of Analysis of Covariance of Training Groups and Control Group on Lh-Fsh Ratio

TEST	GROUP I YOGA THERAPY	GROUP 2 CONTROL GROUP	SOURCE OF VARIANCE	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SUM OF SQUARES	F-RATIO
<b>Pre</b>	2.67	2.80	Between	1	2.80	2.80	1.97
			With in	28	39.73	1.42	
<b>Post</b>	1.13	2.67	Between	1	17.63	17.63	32.77*
			With in	28	15.07	0.54	
<b>Adjusted Post</b>	1.17	2.65	Between	1	16.61	16.61	40.67*
			With in	27	11.03	0.41	

\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 28 (dn)=4.2, 1 and 27 (df)=4.21)

The F value calculated from the pre test scores 1.97 was smaller than the required F value of 4.20 to be significant at 0.05 level which in turn signifies that there was no notable difference between the experimental and control group. On the other hand, acquired F value of the post test scores 32.77 was greater than the required value 4.20 which showcases a significant difference between the post test scores of experimental and control groups. On evaluating the pre and post-test values of the experimental and control group adjusted mean values were computed and put through the statistical

calculation. The adjusted post-test F value 40.67 was greater than the recommended F value of 4.20. This proved that there was a significant difference on L-FSH ratio (decreased) due to 12 weeks of Yoga therapy treatment among girls with Poly Cystic Ovarian Syndrome. The outcome of this study on LH-FSH ratio is in compliance with the research work carried over by Nidhi R et.al., (2013). The ordered adjusted means on LH-FSH ratio were presented through bar diagram for better interpretation of the outcome of this study in Figure [2].



**Fig 2:** Bar Diagram Showing the Mean Difference Among Experimental and Control Groups on Lh- Fsh Ratio  
\* Significant at 0.05 level of confidence

The outcome of the study exhibits that Serum Creatinine decreased and LH-FSH ratio decreased significantly due to Yogic Therapy for Group-I than Group II. Hence the hypothesis was accepted at 0.05 level of confidence.

The above findings were also substantiated by the observations made by experts such as **Pandey Rajendra Kumar et al., (2017)** and **Nidhi R et.al., (2013)**.

### Conclusion

It was concluded that the significant differences on Serum Creatinine (Decreased) and LH - FSH ratio (Decreased) among experimental group I compared to control group due to Yoga therapy among girls with Poly Cystic Ovarian Syndrome. Hence, Yoga therapy is good for girls suffering from PCOS.

### Conflict of interest

The author declares no conflict of interest.

### References

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