

A Hormonal and Functional View of the Combined Benefits of Yoga and Physiotherapy for Women with PCOS

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Abstract

Polycystic Ovary Syndrome (PCOS) is an endocrine disorder that occurs in about 8–13% of reproductive-aged women. It is a symptom complex that encompasses a group of symptoms involving insulin resistance, polycystic ovarian morphology, anovulation, and hyperandrogenism, and greatly affects reproductive, metabolic, and psychological well-being. Although pharmacological therapies—hormonal contraceptives, insulin sensitizers, and ovulation induction drugs—are the current standard medical treatment, non-pharmacological methods are increasingly being eyed as complementary for the management of this disorder. Lifestyle changes, especially involving yoga and physiotherapy, have been found to be effective in controlling hormonal disturbances and enhancing functional ability as a whole. Yoga, which focuses on control of breathing, awareness, and body postures, is linked to lower levels of stress, increased sensitivity to insulin, and regulated hormonal balance. In the same way, physiotherapy interventions comprising organized exercise regimens can contribute to weight control, improvement of cardiovascular endurance, and resolution of musculoskeletal dysfunctions commonly encountered in PCOS patients. This study investigates the interactive benefits of yoga and physiotherapy in PCOS management, citing their potential for providing holistic, non-pharmacological, and sustainable benefits. Through the review of existing evidence and therapeutic benefits, the study seeks to highlight the significance of incorporating these lifestyle therapies into routine PCOS management protocols to enhance the quality of life and reproductive health in affected women.

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Introduction

PCOS-Hormonal abnormalities such as elevated androgen levels, insulin resistance, and changed luteinizing hormone, or LH, to follicle-stimulating hormone (FSH) ratios are characteristics of polycystic ovarian syndrome (PCOS). Menstrual abnormalities, infertility, obesity, and mental disorders can all be influenced by these disturbances.

Non-pharmacological treatments have grown in significance because of their low risk and additional health advantages, even while pharmaceutical management treats symptoms including hyperandrogenism and irregular menstruation. Particularly, yoga and physical therapy have demonstrated promise in enhancing general functional ability and managing hormone profiles. Yoga—Yoga is an ancient Indian practice that involves physical postures (asanas), breathing exercises (pranayama), and meditation. Based on maintaining harmony

between the body and mind, yoga has become a universally accepted mode of holistic therapy. Yoga improves flexibility, strength, and balance in addition to lowering stress and ensuring mental lucidity. In contemporary medicine, yoga is increasingly valued for its therapeutic application in the management of chronic diseases, such as metabolic disorders, cardiovascular diseases, and endocrine disorders. Its holistic nature contributes to global well-being, and hence it is a useful adjunct to traditional medical intervention, particularly in situations like Polycystic Ovary Syndrome (PCOS) and diseases related to stress. Physiotherapy—Physiotherapy, or physical therapy, is a health care profession aimed at restoring and improving physical function, movement, and overall health. It is the assessment, diagnosis, and treatment of numerous musculoskeletal, neurological, and cardiopulmonary conditions by non-surgical means. Some of these include

therapeutic exercises, manual therapy, posture re-education, electrotherapy, and patient education. Physiotherapy not only seeks to ease pain and enhance movement but also to enhance long-term health through preventive intervention and

rehabilitation. In disorders such as Polycystic Ovary Syndrome (PCOS), physiotherapy supports by addressing factors like weight control, insulin sensitivity, and physical inactivity using customized exercise interventions.

Hormonal Implications in PCOS

Key Hormonal Imbalances

Hormone	Typical Alteration in PCOS	Functional Impact
LH	Elevated	Stimulates androgen production
FSH	Reduced or normal	Impairs follicular development
Insulin	Elevated (resistance)	Stimulates ovarian androgen production
Testosterone	Elevated	Hirsutism, acne, anovulation
Cortisol	Often elevated	Increased stress response

Role of Yoga in PCOS Management

The hypothalamic–pituitary–ovarian (HPO) axis is the focus of yoga techniques including asanas (whether they're postures), pranayama (breathing exercises), and dhyana (meditation), which aim to regulate hormonal imbalances.

Hormonal Advantages of Yoga

- Lowers Serum Testosterone: Consistent yoga practice

Key Asanas and Their Effects

Asana	Primary Effect	Hormonal Benefit
Supta Baddha Konasana	Pelvic relaxation	Supports ovarian function
Dhanurasana	Stimulates abdominal organs	Aids in hormone regulation
Bhujangasana	Improves blood circulation	Enhances ovarian health
Anulom Vilom	Nervous system balance	Reduces cortisol levels

Role of Physiotherapy in PCOS Management

Physiotherapy uses myofascial release, pelvic floor treatment, posture correction, and structured exercise to address the metabolic and functional components of PCOS.

Improvements in the area in Function

- Increases insulin sensitivity through endurance and aerobic exercise
- Losing weight serves as crucial in regulating hormone cycles. Pelvic floor therapy: Enhances urine and reproductive function

Evidence-Based Physiotherapy Modalities

Modality	Protocol	Functional Benefit
Aerobic Exercise	30 mins/day, 5 days/week	Increases insulin sensitivity
Resistance Training	2–3x/week	Enhances metabolic rate
Core Stabilization	Pilates-based	Improves posture and reduces lower back pain
Manual Therapy	Trigger point, fascia release	Alleviates pelvic and musculoskeletal pain

Combined Benefits of Yoga and Physiotherapy

Synergistic Hormonal Effects

The benefits of combining yoga and physiotherapy are reciprocal:

- Yoga reduces the disruptive actions of the HPO axis by downregulating stress hormones like cortisol.
- Physiotherapy lowers androgen levels indirectly by reducing adiposity and improving insulin function.

Functional Outcomes

Outcome	Yoga	Physiotherapy	Combined Effect
Menstrual Regularity	✓✓	✓	✓✓✓
Insulin Sensitivity	✓	✓✓	✓✓✓
Weight Loss	✓	✓✓✓	✓✓✓
Mood/Stress	✓✓✓	✓	✓✓✓
Fertility Support	✓	✓	✓✓

Clinical Studies Supporting Integrated Approach

- Saxena *et al.* (2022) found that a 12-week yoga intervention reduced testosterone by 29% in PCOS women compared to controls.
- Nidhi *et al.* (2013) observed improvements in insulin

Proposed Protocol for Women with PCOS

Weekly Integrated Routine

Day	Activity	Duration
Mon	Yoga (Asanas + Pranayama)	60 mins
Tue	Aerobic Exercise + Core Strength	45 mins
Wed	Yoga Nidra (Guided Relaxation)	30 mins
Thu	Resistance Training + Myofascial Release	45 mins
Fri	Yoga + Meditation	60 mins
Sat	Group Physical Therapy (Pelvic Focus)	60 mins
Sun	Rest/Light Walk	-

Conclusion

Although PCOS is a complex endocrine condition, a comprehensive approach to treatment is beneficial. Physiotherapy addresses structural and metabolic dysfunctions, whereas yoga helps by balancing the HPO axis and regulating stress hormones. Collectively, these treatments offer a potent non-pharmacologic approach to help women with PCOS improve their hormonal profiles, lessen their symptoms, and live better lives.

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resistance markers and menstrual regularity with yoga and lifestyle interventions.

- Mohan *et al.* (2020) noted a significant increase in ovulation frequency and decreased BMI with combined exercise and yoga protocols.