

# Nutritional Management of Polycystic Ovarian Disease: Integrating Unani and Contemporary Approaches

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## Abstract

*In Unani medicine, dietary management, known as Ilaj bil Ghiza, plays a vital role in restoring humoral balance and maintaining a healthy temperament (mizaj). This principle aligns with modern medical understanding, particularly in conditions, like polycystic ovarian syndrome (PCOS), which is often associated with insulin resistance and obesity. Modifying dietary habits has shown promise in improving both metabolic and reproductive functions in PCOS patients. Unani scholars attribute PCOS to a Sue Mizaj Barid Ratab (cold and moist temperament), advising consumption of foods with hot and dry qualities. Modern perspectives support the intake of low-glycemic foods while avoiding high-glycemic ones. This review explores the dietary recommendations for managing PCOS through the lens of both Unani and contemporary medical systems.*

**Keywords:** Polycystic ovarian syndrome, Unani concept, diet, lifestyle, temperament

## INTRODUCTION

Polycystic Ovarian Syndrome (PCOS) affects approximately 8–13% of women during their reproductive years, making it one of the most common endocrine disorders globally, particularly among Indian women [1, 2]. It is frequently accompanied by metabolic disturbances, such as obesity and insulin resistance [3]. The Rotterdam Criteria diagnose PCOS when two of the following are present: irregular or absent menstruation, clinical signs of excess androgens, and ultrasound evidence of polycystic ovaries. While the exact cause remains unclear, genetic predisposition is considered a contributing factor [4]. Research shows that even a modest weight reduction of 5% can enhance ovulation and regulate menstrual cycles, highlighting the potential of lifestyle interventions in PCOS management [5].

## EPIDEMIOLOGY

Polycystic Ovarian Syndrome (PCOS) is increasingly prevalent across various populations, affecting a significant number of women globally. A comprehensive review of 35 studies involving over 12 million individuals revealed a global prevalence of approximately 9.2%, with variations depending on the diagnostic criteria used. Specifically, the prevalence was estimated at 5.5% under NIH guidelines, 11.5% using Rotterdam criteria, and 7.1% with AES criteria. Self-reported cases indicated a prevalence of 11%. In the Indian context, estimates range from 3.7% to 22.5%, reflecting differences in population characteristics and diagnostic approaches. These statistics underline the widespread nature of PCOS and the urgent need for effective screening and management strategies [6, 7].

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## PATHOPHYSIOLOGY

The onset of PCOS is believed to occur shortly after the onset of menstruation, with hormonal imbalances marking its progression. Two primary

hormonal disruptions commonly seen in PCOS are elevated luteinizing hormone (LH) levels and insulin resistance. Although the genetic origin of elevated LH is not fully understood, its interaction with high insulin levels is thought to contribute significantly to ovarian dysfunction. Both in vitro and in vivo studies have demonstrated that the combination of hyperinsulinemia and increased LH encourages the formation of ovarian cysts and the overproduction of androgens [8, 9].

A substantial proportion – between 50% and 65% – of women with PCOS are obese, a factor that intensifies both insulin resistance and androgen excess. However, insulin resistance is also found in lean women with PCOS, indicating that obesity is not the sole determinant. Elevated insulin impairs glucose metabolism and reduces the synthesis of key proteins, like sex hormone-binding globulin (SHBG) and insulin-like growth factor-binding protein (IGFBP-1), thereby raising the levels of free androgens in circulation.

In some women, these disturbances manifest as a specific clinical presentation known as HAIR-AN syndrome – characterized by hyperandrogenism, insulin resistance, and acanthosis nigricans. These metabolic disruptions not only affect reproductive health but also increase the risk for cardiovascular diseases, type 2 diabetes, and lipid disorders [10–13].

Due to their higher risk, these women ought to be screened in the early stages of pregnancy. of becoming pregnant with diabetes [14]. In Unani system of Medicine Marz Akyas Khusyatur Rehm (polycystic ovarian syndrome) is mentioned under the headings of Amenorrhea, Obesity and other phlegmatic disorders. According to Zakaria Razzi (860–925 AD), women with PCOS may exhibit hirsutism, hoarseness of voice, and amenorrhea as clinical symptoms [15, 16]. Unani experts linked the increased incidence of Balgham (phelgm) to Marz Akyas Khusyatur Rehm (polycystic ovarian syndrome). According to Ibn-e-Rushed, Marz Akyas Khusyatur Rehm is a cold, wet sickness that develops when the quantity and quality of balgham fluctuate. According to Buqrat (Hippocrates), Ibn-e-Habal Bagdadi, Ali Ibn-e-Abas Majoosi, and Rabban Tabri, PCOS is caused by a liver defect (Sue Mizaj Kabid), which might result in aberrant production of balgham (phelgm) [16–19]. Balgham in its abnormal state is categorized by taste and consistency. Balgham Mayi, the type that causes polycystic ovarian syndrome (polycystic ovarian syndrome), is the most consistent. Thus, it can be said that the occurrence of Balgham in the body is the cause of PCOS, which results in amenorrhea, obesity, and ovarian cyst formation. 16It was found in one trial that Balghami mizaj individuals who are of reproductive age frequently have this condition.

Bhat et al. (2015) [16]. Authentic Unani texts have indicated hirsutism as a consequence of virilism-related ehtebas tams, along with other masculine characteristics including male body contour, acne, hoarse voice, and clitoromegaly caused by sue mizaj barid.16, 20 Hippocrates (Buqrat 460–370 BC) was the first to record the connection between chronic amenorrhea, obesity, and infertility in females with excessive facial and body hair (hirsutism). Galen recorded similar findings (Jalinoos, 130–200 AD).15 Long-term amenorrhea is believed to alter the internal environment of the female body and disturb her equilibrium, resulting in the formation of undesired material that is expelled through skin pores and contributes to the formation of thick hair all over the body. 20 These physicians noticed that women have identical temperaments to men, the development of masculine traits is more likely in obese females with muscular bodies and broad, conspicuous blood vessels [15–17, 20–23].

## SYMPTOMS

Polycystic Ovarian Syndrome (PCOS) is defined by a combination of three core features: hyperandrogenism, ovulatory dysfunction, and insulin resistance. These factors contribute to a wide spectrum of symptoms, making PCOS complex and often misunderstood condition. In addition to its reproductive impact, PCOS is now recognized as a metabolic disorder with a predisposition toward prediabetes, impaired glucose tolerance, and type 2 diabetes due to chronic insulin resistance. Several metabolic complications, including dyslipidemia and elevated blood pressure, further increase the

cardiovascular risks for women with PCOS. Though the classical triad includes excess androgens, multiple ovarian cysts, and irregular ovulation, the clinical presentation can vary widely among individuals [24–30].

## COMMON SYMPTOMS OF PCOS

### Menstrual Abnormalities

- Absence of periods (amenorrhea).
- Infrequent menstruation (oligomenorrhea).
- Heavy menstrual bleeding.
- Anovulatory cycles (bleeding without ovulation).
- *Infertility*: Resulting from chronic anovulation.
- *Hirsutism*: Excess body or facial hair growth, particularly on the chest, face, abdomen, or thighs. Severity is often measured using the Ferriman–Gallwey scale, which grades hair growth across nine body areas. A score of 8 or higher suggests clinically significant androgen excess [28, 29].
- *Persistent or severe acne*: Especially if resistant to conventional treatments.
- *Weight gain or difficulty losing weight*: Especially centralized around the abdomen.
- *Skin changes*: Such as dark, velvety patches (acanthosis nigricans), especially around the neck or underarms.
- Oily skin and scalp issues.
- Pelvic discomfort or pain.

Although PCOS is a common cause of infertility, many women with the condition can conceive with appropriate management. However, pregnant women with PCOS face higher risks of miscarriage and pregnancy-related complications [30].

## DIETARY MANAGEMENT

Dietary modification plays a central role in the management of PCOS in both the Unani and modern medical frameworks. The Unani system, deeply rooted in ancient Greek, Roman, and Islamic traditions, views health as a balance of four humors (Akhlāt): blood, phlegm, yellow bile, and black bile. Disruption of this balance, particularly an excess of phlegm (Balgham) is considered a key factor in the development of PCOS. Consequently, treatment involves restoring balance through specific dietary and lifestyle changes.

Unani physicians have historically emphasized the importance of diet (Ilaj bil Ghiza) as both a preventive and therapeutic tool. Scholars, like Buqrat (Hippocrates), Jalinoos (Galen), and Ibn Sina (Avicenna), underscored the need for dietary discipline in maintaining health. Foods are categorized by their mizaj (Temperament), which can be hot, cold, moist, or dry. In PCOS, which is associated with a cold and moist temperament (Barid Ratab), foods with a hot and dry profile (Haar Yabis) are recommended, while cold and moist items should be restricted.

Modern science supports this approach by advocating for a low glycemic index (GI) diet, which helps reduce insulin resistance and stabilizes blood glucose levels. Processed foods, sugary beverages, and high-carbohydrate meals should be minimized, whereas high-fiber vegetables, lean proteins, and healthy fats are encouraged [31].

### Unani Lifestyle Principles for PCOS Management

- Maintain a balanced mizaj by avoiding excess food intake and promoting regular physical activity.
- Prioritize foods that are hot and dry in temperament, which may help offset the cold-moist imbalance seen in PCOS.
- Observe Qaylula (Midday Rest) and structured meal timings.
- Consider the intensity and duration of the food's effect on the body (ranging from mild to life-threatening in traditional classification).

The dietary component of Unani medicine is closely tied to six essential lifestyle factors (Asbab-e-Sitta Zarooriyah): air, food and drink, physical activity and rest, emotional state, sleep-wake cycles, and elimination of waste. Addressing these holistically helps in restoring the internal equilibrium required for reproductive and metabolic health [31].

### **Dietary Tables Summary**

In Unani medicine, every food item is associated with a specific mizaj (Temperament), and dietary advice for PCOS focuses on counteracting the prevailing Barid Ratab (Cold and Moist) state by emphasizing foods with a Haar Yabis (Hot and Dry) temperament. Additionally, modern dietary advice emphasizes the glycemic index (GI), favoring low-GI foods to manage insulin resistance.

### **Restructured Summary of the Diet-Related Tables**

#### ***Recommended Foods for PCOS (Hot and Dry/Low GI)***

- *Proteins*: Chicken, fish, prawns, small birds, eggs.
- *Oils & Fats*: Mustard oil.
- *Spices & Vegetables*: Red and green pepper, chili sauce, garlic, onion, bitter melon.
- *Nuts & Legumes*: Cashews, hazelnuts, chickpeas.
- *Fruits*: Grapes, lemon.
- *Whole Grains & Pulses*: Chickpeas, oat bran, wheat bread.
- *Dairy & Meats*: Cottage cheese, egg, chicken, lamb.

#### ***Foods to Avoid (Cold and Moist/High GI)***

- *Vegetables*: Radish, cucumber, okra, lettuce.
- *Fruits*: Kiwi, figs, pears.
- *Dairy Products*: Full-fat milk, buttermilk, ice cream.
- *Carbohydrates*: Brown rice, soybeans, carrots.
- *Others*: Soft drinks, high-fat processed food.

#### ***Temperament of Selected Fruits, Vegetables, and Legumes***

- *Cold & Dry*: Apple, plums, strawberries, pineapple, eggplant, cabbage, kidney beans, mung beans.
- *Hot & Dry*: Garlic, bitter melon, chickpeas, grapes.
- *Cold & Moist*: Kiwi, full-fat milk, buttermilk.
- *Hot & Moist*: Mango, banana, lamb meat, wheat bread, oat bran.
- This classification aims to assist in personalizing diet plans for women with PCOS based on both traditional Unani understanding and modern nutritional science [31].

## **DISCUSSION & CONCLUSIONS**

This review underscores the pivotal role of diet in managing polycystic ovarian syndrome (PCOS), as understood through both Unani and modern biomedical frameworks. The persistent rise in PCOS cases globally has prompted a shift toward holistic and integrative approaches. With synthetic drugs providing limited long-term benefit and often accompanied by side effects, dietary intervention offers a safe, accessible, and effective strategy.

In Unani medicine, the state of health hinges upon the equilibrium of the mizaj and akhlat. Since PCOS is predominantly linked to a cold and moist temperament, the therapeutic goal is to counteract this with foods and lifestyle choices that generate warmth and dryness. The concept closely aligns with the modern focus on managing insulin resistance and metabolic imbalance, which are central to PCOS.

The review also highlights the overlap between the Unani understanding of phlegmatic disorders and contemporary endocrinological insights. While the term “insulin resistance” does not explicitly appear in classical Unani texts, parallels are evident – particularly in the connection between abnormal humoral production and metabolic dysfunction.

By compiling food recommendations consistent with both systems, this review aims to support clinicians and practitioners in devising more tailored and effective dietary plans. Adhering to a diet rich in hot and dry temperament foods with low glycemic load and anti-inflammatory properties can significantly alleviate PCOS symptoms and improve quality of life.

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