Reversing PCOS Symptoms Through Hormone-Focused Nutrition & Lifestyle Intervention

- **A Case Study on Nutrition-Led Management of PCOS and Hormonal Imbalance**

Abstract

Polycystic Ovarian Syndrome (PCOS) is a complex hormonal and metabolic condition affecting women of reproductive age, commonly presenting with irregular menstrual cycles, weight changes, fatigue, and reliance on hormonal medications for symptom management. While conventional medical treatment may help regulate cycles temporarily, it often does not address the underlying hormonal and lifestyle-related imbalances.

This case study highlights the nutrition and lifestyle management of a 26-year-old female diagnosed with PCOS, who was dependent on hormonal pills to induce menstruation and was experiencing weight gain and low energy levels. A structured, hormone-focused, non-pharmacological intervention was designed with the primary aim of restoring natural hormonal balance and achieving sustainable weight normalisation.

Within three months of personalised nutrition therapy and lifestyle modification, the client experienced natural restoration of her menstrual cycle without medication, noticeable weight reduction, improved energy levels, and overall enhancement in well-being. This case demonstrates the effectiveness of a dietitian-led, root-cause-based approach in managing PCOS through targeted nutrition and consistent lifestyle correction.

Introduction

Polycystic Ovarian Syndrome (PCOS) is one of the most common hormonal disorders among women of reproductive age, characterised by ovarian dysfunction, hormonal imbalance, and disrupted menstrual cycles. While PCOS is often treated as a gynaecological condition, growing evidence shows that it is a whole-body hormonal and metabolic condition, strongly influenced by nutrition, lifestyle patterns, stress levels, and micronutrient status.

Women with PCOS commonly experience irregular or absent periods, weight fluctuations, acne, fatigue, and fertility challenges. Hormonal contraceptives and other medications are frequently prescribed to regulate menstrual cycles and suppress symptoms; however, these approaches mainly provide temporary relief and do not address the underlying hormonal and lifestyle-related imbalances. In some cases, long-term reliance on medication may also contribute to unwanted effects such as weight gain, low energy levels, and nutrient depletion.

This case study presents the journey of a young woman with PCOS who depended on hormonal medication for menstrual regulation and gradually developed worsening metabolic symptoms. The intervention focused on restoring hormonal balance, improving nutritional adequacy, and supporting overall metabolic health through personalised nutrition and

lifestyle strategies. The outcomes highlight that a targeted, evidence-based, nutrition-led approach can play a significant role in achieving long-term PCOS management and hormonal health without continued pharmacological dependence.

Client Profile

Name: Ms. Shikha
Age: 26 years
Location: Ottawa, Canada
Height: 5 feet
Dietary Preference: Eggetarian
Occupation: IT Engineer
Lifestyle: Sedentary

Medical Background & Clinical Context

Shikha, a 26-year-old female, presented with a clinically diagnosed history of **Polycystic Ovarian Syndrome (PCOS)**, characterised by long-standing menstrual irregularity, weight gain, persistent fatigue, and reduced overall vitality. Her primary concern was the **absence of natural menstrual cycles**, as menstruation was occurring only with the help of hormonal medications. Prolonged use of oral contraceptives had resulted in unintended weight gain, lethargy, and reduced metabolic responsiveness, further aggravating her symptoms.

She also reported consistently low energy levels and a general sense of physical exhaustion, indicating an underlying **hormonal and metabolic imbalance** rather than a purely gynaecological concern. Shikha followed an eggetarian diet; however, her meals lacked structure, regular timing, and adequate distribution of key nutrients required for hormonal support.

Lifestyle assessment revealed a predominantly **sedentary routine**, minimal daily movement, irregular exercise patterns, and ongoing work-related stress associated with her role as an IT engineer. Although she did not report significant digestive complaints, her fatigue, weight changes, and low energy levels suggested subtle metabolic strain influenced by lifestyle and stress factors.

Considering the strong interconnection between **PCOS, lifestyle patterns, and stress physiology**, a comprehensive, hormone-focused nutrition and lifestyle intervention was required. The approach prioritised addressing the **root hormonal and lifestyle drivers of PCOS**, rather than relying solely on symptom-based pharmaceutical management.

Anthropometric Assessment & Dietary History

At the time of assessment, Shikha weighed **57.6 kg** with a height of **5 feet (152 cm)**. Although her weight was within a borderline normal range, the **recent and rapid weight gain following prolonged hormonal medication use** indicated compromised metabolic efficiency rather than simple excess calorie intake.

Her habitual diet, while eggetarian, **lacked hormonal and metabolic structure**. The dietary pattern was characterised by:

- **Hectic schedule and high stress levels**, leading to skipped meals and irregular eating patterns
- **Lack of balanced meal combinations**, especially missing protein along with carbohydrates
- **Frequent dependence on refined and convenience foods** due to time constraints
- **Low intake of fibre-rich foods** such as vegetables, fruits, and whole foods

This pattern, combined with a sedentary lifestyle, was insufficient to support ovarian **hormone balance and sustained energy levels**, thereby contributing to persistent PCOS symptoms.

Nutrition Intervention & Diet Planning

A **personalised, hormone-centric nutrition strategy** was developed based on Shikha's age, PCOS profile dietary preference, and sedentary lifestyle. The intervention focused on **hormonal regulation and menstrual cycle normalisation**, rather than calorie restriction or symptomatic control.

The diet plan emphasised:

- **Balanced meals with adequate high-quality protein** at every meal to stabilise blood glucose, improve satiety, and support ovarian function
- **Controlled carbohydrate intake** from low-glycemic and **high fiber food soluble and insoluble fiber to make the digestion smooth.**

Micronutrient sufficiency was prioritised, with specific focus on nutrients commonly deficient in PCOS, to support endocrine signalling and energy metabolism.

Macronutrient Distribution

The nutrition plan was structured at approximately **1600 kcal/day**, adjusted according to Shikha's activity level, metabolic response, and hormonal condition.

- **Carbohydrates: 45% of total energy**
  Sourced from complex, low-GI foods to support insulin regulation and menstrual health
- **Protein: 30% of total energy**
  Evenly distributed across meals to preserve lean mass, enhance metabolic rate, and improve hormonal stability
- **Fats: 25% of total energy**
  Emphasising omega-3 and other healthy fats to support hormone synthesis

The daily meal pattern included **three main meals and two structured snacks**, ensuring steady energy levels on the body.

Foods Avoided & Allowed

Foods Avoided

The following foods were restricted due to their role in **hormonal imbalance associated with PCOS**:

- Refined sugars, desserts, sweetened beverages
- Bakery products and ultra-processed foods
- Refined flours and high glycemic packaged snacks
- Excess caffeine
- Fried foods and reheated or reused oils

These foods were identified as key contributors to **ovarian hormonal disruption,and fatigue**.

Foods Allowed

The allowed food list focused on **nutrient density, and hormonal support**:

- High-quality protein sources (eggs, pulses, legumes, paneer, curd), tailored to tolerance
- Whole grains and millets in controlled portions
- A wide variety of vegetables, with emphasis on fibre-rich and anti-inflammatory options
- Fruits in controlled portions, prioritising low-glycaemic fruits
- Nuts and seeds such as flaxseeds, chia seeds, walnuts, to provide omega-3 fatty acids
- Hormone-supportive herbs and spices to aid digestion, reduce inflammation, and improve metabolic health

Nutrition Counselling Approach

The intervention for Shikha extended beyond meal planning to **education-based nutrition counselling**, aimed at addressing the **root metabolic and hormonal drivers of PCOS**.

She was counselled to understand:

- The link between **PCOS** and how this contributes to irregular periods, weight gain, fatigue
- The role of **long-term hormonal pill use** in symptom management versus root-cause correction
- The importance of **meal timing, protein consistency, fibre intake, and hydration** in restoring metabolic balance
- Why extreme dieting, calorie cutting, or over-exercising can worsen hormonal stress instead of improving PCOS

This structured counselling helped reduce dependency on medication-based thinking, improved adherence, and empowered Shikha to actively participate in her hormonal recovery.

Shikha was managed as an **online client**, with regular follow-ups conducted through **Google Meet, WhatsApp voice calls, and messages**. Despite the virtual format, consistent check-ins ensured close monitoring, personalised guidance, and timely plan adjustments.

Nutrition Intervention Strategy

Primary Goals

The intervention followed a **phased, hormone-centric approach**, tailored to Shikha's age, PCOS profile, and predominantly sedentary lifestyle. The primary objective was to restore hormonal rhythm, improve energy levels, support natural menstrual cycles, and achieve sustainable weight balance through nutrition and lifestyle correction.

Phase 1: Metabolic & Routine Stabilisation

This phase focused on establishing **regular meal timing**, improving overall nutritional adequacy, and supporting metabolic balance to create a stable foundation for hormonal recovery.

Phase 2: Hormonal & Menstrual Regulation

The second phase aimed at **restoring natural menstrual cycles**, reducing fatigue, and supporting ovarian hormone balance through nutrient-dense, well-structured meals and supportive lifestyle habits.

Phase 3: Weight Normalisation & Lifestyle Consolidation

The final phase emphasised **gradual and sustainable weight normalisation**, improved energy and metabolic efficiency, and long-term lifestyle consistency without restrictive or extreme approaches.

Key Nutrition Focus Areas

1. Metabolic Balance & Weight Management

The nutrition plan focused on **balanced meals** rich in protein, fibre, and healthy fats, with controlled portions of complex carbohydrates. Refined sugars and ultra-processed foods were eliminated to support stable energy levels, hormonal rhythm, and sustainable weight management.

2. Hormonal & Ovarian Support

- Even distribution of protein across meals to support hormonal activity and satiety

- Inclusion of omega-3- rich foods such as flaxseeds, chia seeds, and walnuts to support overall hormonal health
- Regulation of caffeine intake to minimise hormonal strain and energy fluctuations

3. Lifestyle Alignment

- Daily **30-40 minutes of physical activity**, including PCOS-specific yoga
- Improved sleep hygiene with a target of **7-8 hours of restful sleep**
- Adequate hydration with a daily intake of **2.5-3 litres of water**

4. Herbal & Functional Support

- **Cinnamon** to support metabolic balance
- **Turmeric** to support overall wellness
- **Fenugreek, cumin, and fennel** to support digestion and meal tolerance
- **Spearmint tea** to support hormonal balance

Progress & Outcomes

Shikha demonstrated strong adherence to the prescribed nutrition and lifestyle plan. Within the intervention period:

- **Menstrual cycles resumed naturally without medication**, indicating improved hormonal rhythm
- **Weight reduced by 5.6 kg within 3 months**, reaching a healthy and stable range
- Improved energy levels and reduced fatigue
- Better overall metabolic stability and daily functioning

Beyond physical improvements, Shikha gained confidence in managing her PCOS independently. Reduced reliance on hormonal medication and improved body awareness reinforced the effectiveness of a **nutrition-led, root-cause-based approach**.

This intervention highlights that **PCOS can be effectively managed through structured nutrition, lifestyle correction, and consistent professional guidance**, leading to sustainable hormonal balance and long term