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DIET FOR THE PCOD (POLY CYSTIC OVARIAN DISEASE) IN TEENAGE GIRLS

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ABSTRACT

PCOD is closely linked to abdominal obesity and insulin resistance, persons with PCOD are not necessarily noticeably overweight. Even without significant weight reduction, endocrine characteristics, reproductive function, and cardio metabolic risk profile are improved by effective nutrition and exercise strategies. We may now prescribe macronutrient consumption levels based on recent studies. With a low percentage of saturated fat, fat intake should be limited to 30% of total calories. A high intake of low GI carbohydrates promotes appetite and carbohydrate cravings while also causing dyslipidaemia, weight gain, and dyslipidaemia. The right diet and exercise should be chosen for each person based on their tastes and needs. Calorie consumption should be split up throughout numerous meals each day, with little room for snacks and beverages.

KEYWORDS- PCOD, diet, Lifestyle, Management etc.

INTRODUCTION

Multiple tiny cysts grow in the ovaries as a result of PCOD. In addition to raising the risk of diabetes, acne, infertility, and excessive hair growth, this disorder causes hormonal behavior that is unexpected. The condition is quite typical and has no specific treatment. However, a number of the affected ladies assert that dietary adjustments and complementary treatments have helped them recover from the condition. The majority of PCOD patients are overweight, so daily exercise is advised as it may help them manage both their weight and other symptoms.[1]

Polycystic ovarian syndrome (PCOD), the most prevalent endocrine illness, is growing increasingly prevalent due to improved awareness and the rise in overweight and obesity rates throughout the world. Due to the fact that there is no specific anomaly or diagnostic test that characterizes the condition, it is a diverse

illness that has proven challenging to describe. As a working definition, the condition may be diagnosed if at least two of the following are present, even if exact criteria are crucial for scientific studies-[2]

- Amenorrhea or oligomenorrhea accompanied with decreased ovulation. The most frequent factor causing anovulatory infertility is PCOD.
- In the absence of any underlying illness conditions, hyperandrogenism or other clinical signs of androgen excess
- Increased ovarian volume or abnormal ovarian ultrasound with 12 follicles in each ovary, each measuring 2–9 mm in diameter.
- An increase in LH and a higher LH/FSH ratio.

The presence of an increasing number of characteristics increases the certainty of the diagnosis. Numerous obese or overweight women experience irregular menstruation, reduced fertility, or hirsutism without meeting the diagnostic criteria for PCOD. These have the same pathophysiology and treatment as women with PCOD. Although specific medications for hirsutism and infertility have significantly improved PCOD care in recent years, they seldom affect the underlying illness, which is primarily brought on by overeating and insulin resistance. Even non-obese PCOD patients frequently have insulin resistance, and even a small amount of weight loss can improve outcomes for those with near-normal body weight. The proven link between PCOD and type 2 diabetes, cardiovascular disease, and hormonally responsive malignancies in later life is caused by the connection of PCOD with the disorders of metabolic syndrome (central obesity, dyslipidaemia, hypertension, and glucose intolerance) (Ehrmann 2005; Sartor and Dickey 2005). This essay examines current knowledge of the nutritional components of PCOD and suggests a strategy for managing food and nutritional treatment in PCOD patients. It is still unclear what the best strategy is for managing PCOD patients' diets (Marsh and Brand-Miller 2005). This evaluation lays out some broad guidelines around which a customized plan for every patient can be created.[3]

NEED OF STUDY

In the case of polycystic ovarian disease (PCOD), the ovaries frequently produce immature or partly developed eggs, which later develop into cysts. The goal of PCOD diet and therapy is to lessen the severity of symptoms. PCOD is characterized by irregular or non-existent menstrual cycles, painful menstrual cycles, excessive facial hair, acne breakouts, pelvic discomfort, difficulties becoming pregnant, and regions of thick, darker, velvety skin. Future effects of PCOD may include type 2 diabetes, morbid obesity, obstructive sleep apnea, cardiac troubles, psychological disorders, and endometrial cancer. The polycystic ovarian disorder affects up to one third of all women worldwide. That's why I am choosing this article topic "**DIET FOR THE PCOD IN TEENAGE GIRLS"**

AIM AND OBJECTIVES

- To evaluate the study about PCOD in teenage girls
- To evaluate the Role of Diet in PCOD in teenage girls

METHODOLOGY

Collection of Data – The collection of PCOD data from central library of our institute and also collected from different authentic Gynaecology Books and Research articles and authentic websites like PubMed, Lancet Journal etc.

Place of Study -

PREVALANCE RATE OF PCOD

Both the frequency of PCOD and the degree to which it is associated with insulin resistance or obesity differ amongst populations. Both genetic and behavioral factors may contribute to these variations. Additionally, presentation may be affected by racial disparities in hirsutism and cultural views about reproduction. According to most estimates, 5–10% of young women in reproductive years have PCOD (Ehrmann 2005). Populations can vary, and ethnic groups who have a high risk of metabolic syndrome may also have a high risk of PCOD. This may be the case, for instance, for people of Asian heritage in the UK and for Americans of African descent. In an unselected population, a research from the USA (Azziz et al. 2004) found that the prevalence of PCOD was 8.0% for black women and 4.8% for white women, respectively. Furthermore, due to variations in body mass, food, and exercise habits, PCOD symptoms may fluctuate between racial groups (Carmina 2006).[4]

CAUSES OF PCOD

Although physicians and experts agree that certain women are predisposed to PCOD and that it may possibly run in families, there is no known reason for the condition. Period irregularity is the disease's most prevalent symptom, and since many PCOD instances lack this symptom, it is sometimes difficult to diagnose the condition. PCOD is frequently identified in women who are attempting to conceive since it may interfere with conception. Both ultrasound and blood testing can be used to find it.[5]

SIGN AND SYMPTOMS OF PCOD

MAIN SYMPTOMS

- Irregular periods are one of the most common symptoms of PCOD.
- Other symptoms include
- Diabetes,
- Infertility,
- Acne,
- Weight-gain,
- Oily skin,
- Migraine,
- Excessive hair growth,
- Cardiovascular problems.

- When periods are largely irregular, the chances of uterus cancer may also increase.
- Mood swings and depression are also the lesser known and uncommon symptoms of the condition.

NUTRITIONAL ENERGY REQIUREMENT

The positive benefits of even a little (5%) weight loss on health, insulin sensitivity, and cardiovascular risk profile have been demonstrated in several investigations of overweight and obese patients. There is every reason to think that same advantages apply to PCOD-afflicted women (Marsh and Brand-Miller 2005). Studies on PCOD patients show that minor weight loss enhances reproductive health, glucose tolerance, and cardiovascular risk factors (Crosignani et al. 2003; Norman et al. 2004; Stamets 2004; Douglas et al. 2006). Short-term, modest weight loss may also help with some of the PCOD-related endocrine abnormalities: By lowering SHBG, hyperinsulinaemia contributes to both the increased levels of free androgen and the increased androgen production in the ovary in response to LH.[6]

Peripheral aromatization of androgens to oestrogen contributes to the relatively high oestrogen state, which may raise the chance of developing certain malignancies over the long run and aggravate the endocrine abnormalities found in PCOD patients. Short periods of calorie restriction result in lower levels of androgen, which in some cases is enough to return the LH pulse frequency and amplitude to normal, leading to the return of regular menstruation. However, LH secretion is still aberrant in certain individuals, indicating that their pituitary-ovarian axis function may be intrinsically defective (Van Dam et al. 2002, 2004). Leptin is a hormone that is only generated by adipocytes and is physiologically responsible for reducing eating and, consequently, energy intake when the body is full. Additionally, it regulates reproductive function, and weight loss may assist to normalize reproductive function by reducing leptin production. A 28-amino acid acylated peptide called ghrelin is released by the stomach in response to impending meals. It is an inherently occurring growth hormone receptor ligand. Before meals, secretion promotes stomach motility and acid secretion, boosts eating while reducing energy expenditure. Patients with PCOD may have elevated ghrelin levels as part of their aberrant state of energy balance, which is returned to normal with calorie restriction and weight loss (Norman et al. 2004).[7]

DIETARY FAT & PROTEIN

With 9 kcal/g of energy, fat is the most calorically dense macronutrient in the diet, with just 4 kcal/g for protein and carbohydrates. Furthermore, especially in those who are hyperinsulinaemic, the body has an almost limitless potential to retain fat. Experiments with fat overeating indicate that excessive fat intake reduces carbohydrate oxidation while appearing to have no effect on fat oxidation. De novo lipogenesis is a process that increases fat deposition when carbohydrate is available in excess or is not properly oxidized. Cross-sectional studies show that consuming more fat is linked to impaired insulin sensitivity, but that obesity is the primary cause of this association. Intervention trials, however, revealed that there was no effect on insulin sensitivity from a modest increase in total fat consumption (from 20% to 40%). (Riccardi ad Rivellese 2000). Therefore, a potential argument that high-protein, low-carbohydrate diets increase fat consumption may not hold water, at least for short-term treatments (McAuley et al. 2005). Increased intake

of unsaturated fatty acids has been shown to increase insulin sensitivity in type 2 diabetes, obese, and healthy people (Vessby et al. 2001). (Summers et al. 2003). However, those who consumed 537 percent of their total energy as fat were the ones who experienced the positive effects of fat quality on insulin sensitivity.[8]

Polyunsaturated fatty acids (PUFA), which have been linked to good health in a number of studies, were the subject of a recent study (Kasim-Karakas et al. 2004, 2004). Surprisingly, administering dietary supplements along with walnuts to raise levels of linoleic and a-linolenic acids boosted glucose levels both after a fast and during an oral glucose tolerance test. The fact that the study's overall fat consumption was 437% (39 + 1%) may be one factor. Reproductive hormones and insulin levels were unchanged. The longer chain PUFAs contained in fish oil, eicosapentaenoic acid and docosahexaenoic acid, have positive benefits on metabolic parameters in people with diabetes, but there is currently no research pertaining specifically to PCOD.[9]

Although the monounsaturated fatty acid (MUFA)-rich Mediterranean diet is widely regarded as the gold standard for healthy diets, its potential benefits in patients with PCOD have not been documented. However, Italian PCOD patients have been found to have less obesity and insulin resistance than American PCOD patients (Carmina 2006). A diet's total calorie intake should not exceed 30% from dietary fat, with no more than 10% of those calories coming from saturated fat. Cooking oils and spreads should be included in the balanced blend of unsaturated fats that make up the remaining fat content. Consumption of trans-fats, which are unsaturated fats that behave like unsaturated fats due to intrinsic resonance in the molecule between double bonds. Low-fat or low-carbohydrate diets nearly always result in an increased percentage of calories coming from protein. Although it has been debatable, new research indicates that consuming more protein enhances the reactions of glucose and insulin to a glucose load (Gannon et al. 2003; Farnsworth et al. 2003). Increased postprandial thermogenesis, increased satiety, and decreased abdominal fat are all effects of higher protein consumption. To preserve lean body mass and to build more muscle in response to exercise, an adequate protein intake is crucial. As increased body iron stores have been linked to an increased risk of type 2 diabetes, there have recently been concerns about high red meat consumption.[10]

In PCOD individuals, dyslipidemia is a significant predictor of long-term cardiovascular risk. Low HDL cholesterol is the most frequent symptom, but because triglycerides are frequently low, a complete atherogenic lipid profile is frequently not exhibited. The vulnerability to macrovascular disease, however, may be influenced by minor abnormalities, such as changes in lipoprotein particle size and an increase in LDL II and IV subtypes (Berneis et al.[11]

DIETARY CARBOHYDRATE

The amount of carbohydrates multiplied by the glycemic index is the definition of the glycaemic load of a diet (GI). High GI foods quickly release carbohydrates after consumption. In individuals with diabetes who already have the disease, a high glycaemic load is linked to both poor glycemic control and an increased risk of developing the disease. Glycaemic load can be reduced by ingesting foods with a lower GI or by consuming less carbohydrates (with an isocaloric diet, an increased proportion of calories are from MUFA

or protein). The latter has been proven to enhance HDL cholesterol, lower triglycerides, improve insulin sensitivity, and reduce postprandial hyperglycemia (Marsh and Brand-Miller 2005).[12]

In addition to having a low GI, whole grain diets may have a particular role in preventing the onset of diabetes. Low-carb diets have generated controversy, and popular interest in them has mostly driven and predated scientific attention. We recently examined the literature on the use of these diets in patients with type 2 diabetes or those at risk for developing it (Kennedy et al. 2005) When followed for up to 6 months, low-carb diets are successful in encouraging weight reduction. Only when they give fewer calories than are being consumed are they effective (i.e., they are hypocaloric).[13]

They do actually lower cardiovascular risk and seem to be safe for short-term usage. The amount of carbohydrate restriction varies between diets. The diet does not need to be substantially carbohydrate limited in order to be effective, although a time of rather stringent carbohydrate restriction at the beginning of the diet is helpful. The diets are most effective when they modestly restrict calorie consumption and are used in conjunction with an appropriate exercise regimen. Care should be given to minimize the intake of fat, especially saturated fat.[14]

Numerous trials using low-carbohydrate diets have been conducted over quite brief times. More recent research have overcome this restriction. Accordingly, a low-carb diet has been shown to result in higher weight reduction after 6 months compared to a normal diet (Samaha et al. 2003; Stern et al. 2004), although the difference between the two diets did not persist after 12 months (Brehm et al. 2003; Foster et al. 2003). Additional research on obese people revealed inconsistent weight loss results after 12 months on low-carb diets. (Dansinger et al. 2005; McAuley et al. 2005) Only two trials have compared the effects of high-protein low-carbohydrate vs low-protein high-carbohydrate diets on PCOD (Stamets et al. 2004; Moran et al. However, the length of these research was quite brief (1 and 3 months, respectively). Low-carbohydrate and high-carbohydrate diets did not significantly vary in terms of fasting insulin levels or insulin sensitivity as measured by the homeostatic model assessment (HOMA) (Farnsworth et al. 2003; Layman et al. 2003; Brinkworth et al. 2004). However, those following a low-carb diet were shown to have a decreased postprandial insulin response (Farnsworth et al. 2003; Layman et al. 2003). In a recent study (Douglas et al. 2006), a low-carbohydrate diet was shown to lower insulin levels both while fasting and after a challenge. Low-carbohydrate diets have been linked to more pronounced improvements in triglycerides (Samaha et al. 2003) and HDL cholesterol (Foster et al. 2003) than traditional diets.[15]

It's common practice to undervalue the significance of eating habits' regularity and frequency. In recent years, there has been a shift away from regular and sociable eating behaviors toward more irregular eating with an increase in the use of convenience and snack foods that are high in energy (Harnack et al. 2000). Surprisingly little study has been done on how eating habits affect metabolic parameters, but little is known implies that eating habits may have a significant role in determining total nutrient intake and, to some extent, how the body responds to food. Meal and snack habits were reliable indicators of total nutrient consumption in a study of over 16,000 people (Kerver et al. 2006). People who ate more often during the day consumed more carbohydrates, fiber, and a variety of micronutrients.[16]

EATING HABITS

It's common practice to undervalue the significance of eating habits' regularity and frequency. In recent years, there has been a shift away from regular and sociable eating behaviors toward more irregular eating with an increase in the use of convenience and snack foods that are high in energy (Harnack et al. 2000). Surprisingly little study has been done on how eating habits affect metabolic parameters, but little is known implies that eating habits may have a significant role in determining total nutrient intake and, to some extent, how the body responds to food. Meal and snack habits were reliable indicators of total nutrient consumption in a study of over 16,000 people (Kerver et al. 2006). People who ate more often during the day consumed more carbohydrates, fiber, and a variety of micronutrients. Less frequent eaters consumed more fat, were more likely to smoke, drink alcohol, consume more carbohydrates, and consumed fewer micronutrients. It indicates that regular meals, especially breakfast, can aid in weight control and also increase insulin sensitivity, while more extensive long-term research in obese and PCOD patients are needed.[17]

In a separate research (Farshchi et al. 2005b), eating breakfast was linked to decreased calorie intake and increased insulin sensitivity as opposed to skipping it. If the effects of irregular eating or skipping breakfast persist beyond two weeks, they may result in weight increase and so help pave the way for the onset of obesity. Less frequent large feeding episodes may result in increased fat mass and leptin levels, according to Chapelot et al. (2006). Although the ideal frequency of eating has not yet been established, a regular schedule with less consumption from snacks appears to be preferable. Ghrelin levels rise in anticipation of meals, and this reaction is ingrained (Drazen et al. 2006). The significance of breakfast could have implications beyond how energy intake is distributed and how the body reacts thermally to meals. Individuals in the Goteburg Adolescence Study who skipped breakfast (Sjoberg et al. 2003)[18]

EXERCISE IN PCOD

Surprisingly little research has been done on the use of exercise to treat PCOD patients. Therefore, the majority of our knowledge and recommendations must derive from research including non-PCOD participants. Currently, we advise 30 minutes of exercise five days a week at the very least to maintain weight and live a healthy lifestyle. Recent research revealed that, compared to the conventional advice for optimum health, 60 to 75 minutes of moderate-to-high intensity physical exercise promotes a larger long-term (12 to 18 months) weight loss (Jeffery et al. 2003; Jakicic et al., 2003). The accumulation of physical activity across several brief periods of time seems to have a comparable effect on long-term weight loss programs.[19]

Daily life and leisure activities have a significant role in determining body weight, but neither factor affects how well weight control programs work. A practical approach to exercise depends on an evaluation of the patient's present exercise routine, exercise preferences, and exercise motivation. With the patient, go over the following workout possibilities-[20]

Aerobic activity. As part of a weight loss program, this is crucial for improving energy expenditure and cardiovascular fitness. It is crucial to understand that a patient who is overweight and unfit may only have a limited ability to engage in aerobic exercise.[21]

Resistance exercise. Up until recently, weight training was underutilized as a way to improve function and body composition. Weight training increases muscular strength and mass. Resistance training is increasingly viewed as a very acceptable method to affect weight, body composition, and insulin sensitivity because of the high metabolic rate of muscle. Muscle mass is a significant driver of resting energy expenditure (Poehlman et al. 2000; Borg et al. 2002).[22]

DRUG THERAPY

Naturally, pharmacological therapy should only be taken into account as a supplement to lifestyle management, and then only when it has been established that lifestyle management is unable to control symptoms and signs on its own. However, the advantages that result from increasing insulin sensitivity with pharmacological therapy might be helpful to illustrate what could be accomplished with long-term lifestyle modifications. Additionally, there is mounting proof that medication can be used in conjunction with lifestyle changes to increase insulin sensitivity. Menstrual irregularity, anovulatory infertility, and hirsutism are examples of particular PCOS symptoms that may need specialized care. Treating the underlying causes of the condition—insulin resistance and overweight/ obesity—could provide many patients with the most clinical relief as well as a better long-term prognosis.[23]

Metformin, a biguanide medication, or the thiazolidinediones (rosiglitazone or pioglitazone), which are agonists at the peroxisome proliferator activator receptor-g (PPARg) receptor, are used to treat insulin resistance. In order to prevent or postpone the progression to type 2 diabetes as well as to enhance diabetic control in people who already have diabetes, these medications should be used early in the course of treatment in patients with impaired fasting glucose or impaired glucose tolerance. In addition to its effects on glucose homeostasis, metformin is widely used in PCOS patients because it reduces insulin resistance, which favourably affects androgen and gonadotrophin levels (Checa et al. 2005).[24]

DIETARY INSTRUCTIONS FOR WOMEN SUFFERING FROM PCOD

- Avoid Red Meat
- Processed meats like hot dogs, sausages and luncheon meats should be avoided,

DO NOT EAT SATURATED AND HYDROGENATED FATS

There are saturated fats in many meals, but they are mostly found in dairy and animal-based goods. Saturated fats can increase calorie consumption and cholesterol levels. Avoid baked goods because they are loaded with these fats.[26]

EAT THE COLOURS OF 'TRAFFIC LIGHT'

Red fruits like berries and dark green leafy vegetables like broccoli and cabbage are particularly high in antioxidants and minerals. In addition to animal proteins, a daily diet should include plant proteins including dry beans, legumes, and lentils.[27]

PCOD PATIENT FOLLOW THE DIABETIC DIET PLAN

Insulin resistance is a symptom of PCOD/PCOS in female patients. They should thus adhere to the diabetic diet. Their diet should be high in fiber and low in processed foods and carbohydrates. Consider choosing whole wheat, wheat flour, whole grains, brown rice, poha, and wheat pasta over items with high glycemic index.[28]

AVOID ARTIFICIAL SUGAR

Refined carbohydrates like mass-produced pastries, white bread, and biscuits should be avoided by PCOD sufferers. Additionally, they should refrain from ingesting calories from non-nutritive sources, such as sugary drinks like soda and energy drinks.[29]

EAT SMALL QUANTITY OF MEAL

Patients with PCOD may also experience water retention, which can be prevented by drinking enough water and eating small, frequent meals.[30]

GUIDELINES FOR PCOD FEMALES

- It has also been demonstrated that several herbs can regulate your hormones.
- To keep your hormones under control, try herbs like meethi dana, flaxseeds, and cinnamon.
- Exercise for 30 to 60 minutes each day, in addition to all the dietary adjustments, is crucial to lowering insulin resistance.
- Weight gain may result from high insulin resistance.
- Additionally, it may result in skin darkening and an increase in testosterone production.
- Fresh fruits provide the best breakfast for PCOD patients.
- Another option is to have a multigrain bread sandwich with some tomato and cucumber. Instead of normal roti, they should choose bran roti.

WHICH FOOD GROUPS SHOULD YOU EAT-

Cereals: whole wheat bran flakes, whole wheat porridge, muesli, quinoa, multigrain bread, and brown bread. Green moong, chana dal, beans, yellow moong, and entire pulses are examples of pulses.

Dairy items - Contains milk that has been skimmed or toned. Additionally available are paneer, tofu yoghurt, and soy milk.

Fruits include apples, plums, pears, watermelons, papayas, berries, oranges, peaches, and papaya.

Nuts, such as almonds, flaxseeds, and walnuts.

PCOS DIET PLAN: DO'S AND DONT'S

DO'S

- Make sure the appropriate weight is kept. If you are overweight, lose weight by working out frequently and eating a balanced, healthy diet.
- Regularly perform the yoga asanas and prananyam.
- Get enough sleep.
- Observe and document your menstrual cycle.

DONT'S

- Avoid smoking.
- Don't drink alcohol.
- Never miss a meal or a sleep. The secret to greater health and relief from PCOS is a disciplined lifestyle.
- Keep as far away from hormonal therapy as you can.

DICUSSION

One of the frequent issues that many females in this day and age deal with is PCOS. A PCOS diet is essential for managing PCOS since it controls insulin levels in addition to helping with weight reduction and maintenance. The pancreas must produce more insulin to be successful since many women with PCOS are insulin-resistant. Insulin is a crucial hormone because it carries glucose from the blood into the body's muscles, enabling the body to efficiently utilise the energy from glucose. A majority of the symptoms of PCOS, including increased hair growth, weight gain, acne, fatty liver, high cholesterol, and polycystic ovaries, are caused by elevated insulin levels wreaking havoc on the body. In addition to increased appetite and cravings, high cholesterol is associated with polycystic ovaries, an irregular menstrual cycle, and high cholesterol.[31]

Therefore, controlling blood insulin levels is essential for PCOS therapy. Refined carbs should be avoided since they raise insulin levels. High-fat diets will also cause weight gain and high cholesterol. Foods with a high GI cause blood sugar levels to rise quickly. In order to deal with the bloodstream glucose, insulin levels follow suit. High GI meals typically lack nutrition because they have been processed to eliminate fibre and other nutrients, even if they may be pleasant. White rice, white potatoes, white bread, rice cakes, muffins, and cakes are a few examples of high GI foods to stay away from. Trans, hydrogenated, and saturated fats should all be avoided. Red meat and dairy products contain saturated fats, which also increase the production of estrogen, obstruct the absorption of some nutrients, and can contribute to weight gain.[32]

CONCLUSION

In addition to being overweight and insulin resistance, PCOS is a complicated illness. In reality, the patient's perspective on how it is managed is frequently insufficient. It is possible to categorize PCOS treatments as

follows: (1) Focus on lifestyle elements including nutrition and exercise. (2) Management of certain features such hirsutism, anovulatory infertility, and irregular menstruation. (3) Weight reduction and improved glucose tolerance by dietary and exercise treatments. (4) Pharmacological weight loss aids or measures to increase insulin sensitivity. Since PCOS is primarily an overeating disorder, dietary control should be the main focus of treatment in most situations. A few suggestions concerning food and exercise may be given for PCOS patients based on the available data summarized in this study. PCOS can help to ameliorate the condition's many aspects and shield the patient from long-term effects including type 2 diabetes and cardiovascular disease. This complicated illness may be approached rationally by both the practitioner and the patient with the use of a logical approach to lifestyle management in PCOS. PCOS is mostly a lifestyle condition. As PCOS is more often identified, it is essential for medical practitioners working with PCOS patients to understand how lifestyle variables affect the illness and how they may be modified to modify prognoses without placing an undue dependence on the use of short-term pharmaceutical therapies.

CONFLICT OF INTEREST –NIL

SOURCE OF SUPPORT -NONE

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