

Can diet, exercise and lifestyle changes improve and help treat PCOS?

- Body image issues and psychological conditions such as depression and anxiety are common due to the distress that can be felt in having PCOS.
- Exercise and positive lifestyle changes have shown to not only reduce body fat and adipose tissue around the midsection but also improve fertility.
- Diet plays a huge role in the treatment of weight gain, insulin resistance and metabolic disorders in PCOS patients. Low carb, low GI, low calorie and the ketogenic diet have all produced positive outcomes.
- Prescription of medications to reduce symptoms of PCOS have shown mixed results in the latest 'International evidence-based guideline for the assessment and management of polycystic ovary syndrome 218'. Are they the answer to improvement of PCOS or do they need to be prescribed alongside a healthy lifestyle?
- Due to some adverse effects of pharmaceutical agents for the treatment of symptoms, natural supplementation can be of benefit especially due to the increase of oxidative stress that is observed in women with PCOS.

In Brief

Polycystic ovary syndrome (PCOS) affects around 5-10% of women of reproductive age (1). Genetic factors as well as environmental play a huge role in the origin and development of the disorder. The presence of cysts on the ovaries, excess male hormone androgen, and the inability to ovulate result in a number of symptoms such as unwanted hair, acne, abnormal menstrual cycles, infertility and metabolic disorders such as insulin resistance and Type 2 Diabetes. It has been shown that diet, exercise and lifestyle can greatly contribute to an improvement of symptoms (2). Education of the syndrome is needed as well as adherence, commitment and care from different Health Consultants for psychological conditions and overall long term health for the individual.

In Depth

Body Image and emotional wellbeing

With the excess of testosterone and in particular androgen hormones, unwanted hair, weight gain and body image issues can easily arise as well as depressive symptoms and anxiety. It is important that these issues are not left untreated and it is suggested that screening should take place at the time of diagnosis as well as on going screening from a Health Care provider. Emotional wellbeing is important and goes hand in hand with adherence, motivation and commitment to helping the underlying symptoms of the condition such as excess weight and insulin resistance (3).

Exercise and Positive Lifestyle changes

Increased risk of obesity, higher body fat percentage, high BMI and insulin resistance are commonly seen in woman with PCOS and in turn the risk of developing Type 2 Diabetes and even cardiovascular disease increases (4). Insulin resistance is where your body resists the hormone insulin which is released in response to food and other external factors such as environmental toxins, to be used as energy. When

the liver and muscles are resisting making use of insulin, the pancreas then makes more and this excess insulin gets stored as adipose tissue, otherwise known as fat. Reducing fat is important to address as increased fat, especially around the mid-section, plays a role in developing insulin resistance which in turn increases androgen levels as well as affecting the hunger and satiety hormones, leptin and ghrelin (5).

Fat loss has shown to improve fertility and menstrual cycle abnormalities, as ovulation can be an issue in woman who are overweight with PCOS (6) (7).

Increased weight not only can help reduce severity of symptoms of PCOS but it is also important to manage weight in woman who are at risk of developing PCOS (7).

Studies have shown no one particular type or duration of exercise to be favorable to improve fertility, insulin sensitivity and body composition. Although it is suggested at least 30 minutes of either moderate or vigorous intensity exercise such as brisk walking and running 3-5 times per week as well as resistance training, to be beneficial for long term positive outcomes (2).

Diet

There are several papers recommending a variety of different dietary approaches for PCOS. Two papers recommended a diet lower in carbohydrates, with low glycemic (GI) foods to not only reduce weight but to also improve insulin sensitivity, menstrual regularity and androgen hormone levels. The definition of low carbohydrates was 50% carbohydrates (ideally low GI) 20% protein and 10% fat (2) (1).

Calorie restriction has also been reported to show positive improvements on insulin resistance, androgen levels, menstrual cycles, conception and fat loss. Calories were restricted to 1000-1500 calories per day with no particular macronutrient breakdown provided (2).

A low carbohydrate/ketogenic diet also has shown improvements in insulin resistance, androgen levels and fat loss. Improvements have been seen in carbohydrate levels to be from as little as 20gm or less per day and up to 100gm per day. Although both studies were small and one study in particular also stipulated the exclusion of alcohol and caffeine and the presence of exercising at least 3 times per week (8). It must be noted that the research combined diet and regular physical activity for the duration of the studies.

Dr Lara Biden recommends cutting out sugars from the diet such as fructose found in not only sugar but also dried fruits, artificial sweeteners and honey in order to help insulin resistance (9).

Prescription medications to treat symptoms of PCOS

Pharmaceutical agents to treat symptoms such as increased androgen levels, irregular menstrual cycles and metabolic disorders can be prescribed. The *International evidence-based research guideline for the assessment of polycystic ovary syndrome 2018*, suggests the use of prescription medicine to be used in cases where the individual may have trouble meeting lifestyle changes such as exercise and diet.

Individual assessment of the patient's symptoms need to be taken in to account as well as side effects of medication, overall health, ethnicity, genetics and external factors such as lifestyle and education on the condition. A combination of prescription medications as well as diet intervention and lifestyle changes, show the most significant results in reducing insulin sensitivity, weight loss, excess androgen levels and regular menstrual cycles (3) (2)(7).

The use of natural therapies

Oxidative stress is seen to be linked to those who are insulin resistant so supplementation of an antioxidant to combat free radicals may be beneficial and even show improvements to insulin resistance as well as Type 2 Diabetes (10).

Vitamin B8 has shown to improve ovulation, hormones, waist to hip ratio and supplementing with an Omega 3 Fish oil showed a reduction in total cholesterol (11). Although the studies available on natural herbal remedies and supplementation needs to be more thorough, as the evidence is not of high quality due to small trial numbers and short trial periods (12).

Magnesium is also recommended by Dr Lara Biden to normalize blood sugar levels and insulin sensitivity and states magnesium as the natural alternative to the prescription drug 'Metformin' that is prescribed to PCOS patients for insulin resistance (13). Dr Biden also has recommendations on her website for natural remedies such as Berberine which is found in a number of Chinese medicine herbs. It works the same way as magnesium and the prescription drug 'Metformin' for insulin resistance and helps with excess testosterone (14).

Conclusion / summary

PCOS is a complex condition as there is no real known cause and a multitude of symptoms and degree of severity are present in each case.

Woman need to be treated by their Health Care provider on an individual basis when prescribing prescription medication to help treat symptoms of PCOS, taking into account ethnicity, current health, severity of symptoms, lifestyle and psychological factors.

No one particular diet from the research is deemed best, though the common recommendation is a diet low in sugar, calorie controlled and with the inclusion of exercise to reduce weight and insulin resistance.

Lifestyle factors such as diet and exercise are very important in reducing excess weight and maintaining a reduction in symptoms. Emotional wellbeing is imperative for long term commitment and adherence to any lifestyle change in the individual. Support from health care providers such as Nutritionists, Personal trainers, Psychologists and Nutrition Coaches may be beneficial for support and education on the condition.

A holistic and multi-faceted approach in the treatment of PCOS is needed for long term health and treatment of PCOS.

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