



ELEMENTS

PERSONAL TRAINING

Managing PCOS
with training and nutrition

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MANAGING PCOS WITH TRAINING AND NUTRITION

In this guide I will help you learn how to manage your PCOS more effectively through targeted lifestyle changes. We delve into the essential aspects of PCOS, including its symptoms, causes, and the connection between insulin resistance, inflammation, and stress hormones.

WHAT IS PCOS?

Polycystic Ovary Syndrome (PCOS) is a common hormonal disorder that affects women of reproductive age. The exact cause of PCOS is not well-understood, but it is thought to involve a combination of genetic and environmental factors.

The main issues associated with PCOS include:

Irregular or infrequent menstrual periods: Women with PCOS may have fewer than nine periods a year, have heavy or prolonged periods, or experience irregular cycles.

Excess androgen production: Androgens are male hormones, like testosterone, that are present in both men and women. In women with PCOS, higher-than-normal levels of androgens can cause symptoms such as excess facial and body hair, acne, and male-pattern baldness.

Polycystic ovaries: The ovaries may be enlarged and contain numerous small, fluid-filled sacs (follicles) that surround the eggs. This can lead to difficulties in the regular release of eggs (ovulation), causing fertility problems.

The exact symptoms and severity of PCOS can vary from person to person. Some women may have only mild symptoms, while others may be more severe. There are some common issues associated with it that when controlled can help to alleviate many of the symptoms and manage the condition effectively.

1. INSULIN RESISTANCE

Insulin resistance, in layman's terms, is a condition in which your body doesn't respond well to insulin, a hormone that helps regulate blood sugar levels. Insulin's primary job is to help move sugar (glucose) from your bloodstream into your cells, where it's used for energy or stored for later use.

When you have insulin resistance, your cells don't respond properly to the insulin signal, which makes it harder for glucose to enter the cells. As a result, your body needs to produce more insulin to try to overcome this resistance and keep blood sugar levels in check. Over time, this can lead to higher levels of both glucose and insulin in your blood.

Insulin resistance can be caused by several factors, including genetics, lack of physical activity, poor diet, and excess body fat, particularly around the waist.

In women with PCOS, insulin resistance is believed to be a key factor contributing to the hormonal imbalances and other symptoms associated with the condition. Here's how the link between PCOS and insulin resistance is thought to work:

High insulin levels: Insulin resistance leads to an increased production of insulin to compensate for the reduced effectiveness of the hormone. High insulin levels can stimulate the ovaries to produce more androgens (male hormones), like testosterone. This results in an imbalance of hormones, which can cause the characteristic symptoms of PCOS, such as irregular menstrual cycles, acne, and excess hair growth.

Impact on sex hormone-binding globulin (SHBG): Insulin resistance can also lead to lower levels of SHBG, a protein that binds to sex hormones like testosterone and helps regulate their levels in the body. With less SHBG available, more free androgens (Testosterone) can circulate in the bloodstream, worsening the hormonal imbalance associated with PCOS.

Weight gain and obesity: Insulin resistance is often associated with weight gain and obesity, which can exacerbate PCOS symptoms. Excess body fat, particularly in the abdominal area, can contribute to further insulin resistance and create a vicious cycle.

Inflammation: Insulin resistance and obesity can promote low-grade inflammation in the body. This inflammation may contribute to the development or worsening of PCOS, as it can further disrupt hormone regulation and lead to additional insulin resistance.

Although the relationship between PCOS and insulin resistance is complex and not entirely understood, managing insulin resistance can often help alleviate the symptoms of PCOS.

2. INFLAMMATION

Research suggests that inflammation may also play a role in the development or worsening of PCOS.

Here's how inflammation may be linked to PCOS:

Systemic inflammation: Women with PCOS often exhibit signs of low-grade, chronic inflammation. This means that their immune system is continuously activated, releasing inflammatory molecules called cytokines into the bloodstream. Research suggests that the cause of this may be related to things such as obesity, insulin resistance, or genetic predisposition.

Hormonal imbalances: Inflammation can contribute to hormonal imbalances by disrupting the balance between insulin and other hormones. As discussed above, This disruption may further lead to an increase in the production of androgens (male hormones) by the ovaries, worsening the hormonal imbalances associated with PCOS.

Impact on ovarian function: Inflammation can negatively affect the ovaries, leading to irregular ovulation or the formation of small cysts on the ovaries. These changes can further contribute to the hormonal imbalances and reproductive issues experienced by women with PCOS.

Adipose tissue and inflammation: Adipose tissue, or body fat, can produce and release inflammatory molecules. Women with PCOS are more likely to be overweight or obese, which can increase the amount of adipose tissue and contribute to inflammation. Frustratingly, higher levels of systemic inflammation also contribute to higher levels of body fat. The vicious cycle continues.

3. CORTISOL AND STRESS

Managing stress and keeping stress hormones (cortisol and adrenaline) low is important for women with PCOS because elevated stress hormones can exacerbate the hormonal imbalances and symptoms associated with the condition.

Stress hormones are released by the body in response to physical or emotional stress. This process is supposed to be acute and in the short term. Sadly due to modern lifestyles, the elevation in stress hormones has become chronic for many people due to various lifestyle factors such as stimulants, alcohol, toxins, a lack of proper rest and recovery.

Here's why it's crucial to keep stress hormones in check for women with PCOS:

Hormonal imbalances: Elevated stress hormones can interfere with the balance of other hormones, including insulin and sex hormones.

Insulin resistance: High levels of stress hormones can contribute to insulin resistance by impairing the ability of insulin to effectively regulate blood sugar levels.

Weight gain and obesity: Chronic stress and elevated stress hormones can lead to weight gain by increasing appetite and promoting fat storage, particularly around the abdomen. As discussed above, excess body fat is a risk factor for PCOS and can exacerbate all of its symptoms further contributing to worsening the condition.

Inflammation: Stress can increase inflammation in the body, which, as mentioned earlier, can worsen hormonal imbalances and negatively impact ovarian function in women with PCOS.

Emotional well-being: Chronic stress and elevated stress hormones can negatively affect mental health, increasing the risk of anxiety and depression. Women with PCOS are already at a higher risk for these mental health issues, so managing stress is important for overall emotional well-being.

As you can see from everything we have discussed above, all of these factors create a vicious cycle, insulin resistance promotes excess body fat, inflammation and stress hormone disruptions. Excess body fat promotes further insulin resistance, inflammation, and stress hormone disruptions. Inflammation promotes further body fat which contributes to further insulin resistance and stress hormone disruption and so on and so forth.

It becomes a never ending cycle where one factor feeds and promotes the others. This is a cycle that needs to be broken.

SO WHAT STEPS DO WE NEED TO TAKE TO MANAGE PCOS BASED ON WHAT WE KNOW?

1. IMPROVING INSULIN SENSITIVITY THROUGH DIET

Controlling your diet is an effective way to optimize blood sugar control and reduce the risk of type 2 diabetes and other metabolic disorders. Here are some dietary strategies to improve insulin sensitivity:

Choose a low carbohydrate diet: Excessive consumption of carbohydrates, especially refined carbohydrates and sugars, can lead to increased insulin resistance. Aim for a lower carb, higher fat diet.

Increase fiber intake: Consuming a diet rich in fiber, particularly from whole grains, legumes, fruits, and vegetables, can help improve insulin sensitivity. Soluble fiber helps slow down digestion, reducing the rate at which sugar is absorbed into the bloodstream, and promoting healthy gut bacteria, which may have a positive effect on insulin sensitivity.

Choose low glycemic index (GI) foods: Low GI foods cause a slower, more stable increase in blood sugar levels and should make up your primary choices when it comes to carbs. These help to maintain better insulin sensitivity. Examples include whole grains, legumes, non-starchy vegetables, and some fruits (such as berries and cherries).

Consume high amounts of healthy fats: Unsaturated fats, such as those found in olive oil, avocados, nuts, and seeds, and omega-3 fatty acids, found in fatty fish like salmon, mackerel, and sardines can help improve insulin sensitivity.

Include lean protein sources: Protein helps stabilize blood sugar levels and can improve insulin sensitivity. Opt for lean sources such as chicken, turkey, fish, legumes, and low-fat dairy products.

Eat antioxidant-rich foods: Antioxidants help combat inflammation, which can contribute to insulin resistance. Include a variety of colorful fruits and vegetables in your diet to ensure you're getting a good mix of antioxidants.

Eat little and often: Overeating can contribute to insulin resistance and weight gain. Consume moderate portion sizes and listen to your body's hunger cues. Smaller, more frequent meals can help to regulate blood sugar more effectively and reduce large insulin spikes.

Limit processed foods: Processed foods often contain added sugars, unhealthy fats, and refined carbohydrates, which can contribute to insulin resistance. Focus on whole, minimally processed foods instead.

Stay hydrated: Drinking enough water is important for overall health and can help manage blood sugar levels. Aim for 3-4L of water per day.

USEFUL SUPPLEMENTS FOR INSULIN SENSITIVITY.

Vitamin D - 5000iu per day
Berberine - 4-500mg 3x per day
Myo inositol - 2-4g per day
Zinc - 10-15mg per day
Omega 3 - 5-10g per day
Magnesium - 2-400mg per day

IN SUMMARY:

Choose a low carb (not no carb), high fat, high protein diet. Add carbohydrates in post workout and aim to stick to low GI sources where possible. We've included a sample meal plan below as an example.



SAMPLE MEAL PLAN:

With four meals per day, this meal plan offers approximately 1800 calories which should be adequate for most people to get good results with long term while remaining well nourished. It focuses on high-fiber, high fat and primarily low-GI carbohydrates. It will help to keep you well nourished, keep your blood sugar stable, keep inflammation under control and your insulin levels in check.

We've set it up as a four meal plan which is what most of you should be able to manage quite easily. For even better results having a greater number of smaller portions would be ideal if your schedule allows.

USEFUL SUPPLEMENTS FOR INSULIN SENSITIVITY.

DAY 1

Meal 1 (Breakfast): Oatmeal with Berries, Nuts, and Coconut

1/2 cup whole oats (rolled or old-fashioned oats)
1 cup unsweetened almond milk
1/2 teaspoon vanilla extract
1/4 cup mixed berries (e.g., blueberries, raspberries, strawberries)
2 tablespoons mixed nuts (e.g., almonds, walnuts, pecans), roughly chopped
1 tablespoon unsweetened shredded coconut

Meal 2 (Lunch): Grilled Chicken Salad with Mixed Greens and Nuts

4 oz grilled chicken breast
2 cups mixed greens (e.g., spinach, kale, arugula, romaine lettuce)
1/4 cup cherry tomatoes, halved
1/4 cup cucumber, sliced
1/4 cup red bell pepper, sliced
1/4 cup mixed nuts (e.g., almonds, walnuts, pecans), roughly chopped
2 tablespoons extra virgin olive oil
1 tablespoon apple cider vinegar
Salt and pepper, to taste

Meal 3 (Snack): Greek Yogurt with Chia Seeds and Cinnamon

1 cup Fage High Protein yogurt
1 tablespoon chia seeds
1/4 teaspoon ground cinnamon
1 tablespoon almonds, chopped

Meal 4 (Dinner): Baked Salmon with Roasted Vegetables and Sweet potato

4 oz baked salmon
1 Medium Sweet potato
1 cup mixed roasted vegetables (e.g., broccoli, cauliflower, Brussels sprouts, carrots, zucchini)
1 tablespoon olive oil for roasting vegetables
1 teaspoon fresh lemon juice
Salt and pepper, to taste

DAY 2

Meal 1 (Breakfast): Almond Butter and Berry Smoothie

1 cup unsweetened almond milk
1/2 cup mixed berries (e.g., blueberries, raspberries, strawberries)
2 tablespoons almond butter
1 tablespoon chia seeds
1 handful spinach
1/2 teaspoon vanilla extract

Meal 2 (Lunch): Grilled Chicken and Avocado Salad

4 oz grilled chicken breast, sliced
2 cups mixed greens (e.g., spinach, kale, arugula, romaine lettuce)
1/2 medium avocado, diced
1/4 cup cherry tomatoes, halved
1/4 cup cucumber, sliced
2 tablespoons extra virgin olive oil
1 tablespoon apple cider vinegar
Salt and pepper, to taste

Meal 3 (Snack): Carrot and Cucumber Sticks with Hummus

1/2 cup baby carrots
1/2 cup cucumber sticks
1/4 cup hummus

Meal 4 (Dinner): Shrimp Stir-Fry with Mixed Vegetables and Cauliflower Rice

4 oz shrimp, peeled and deveined
2 cups mixed stir-fry vegetables (e.g., bell peppers, onions, broccoli, snap peas, carrots)
1 cup cauliflower rice
1 tablespoon coconut oil for cooking
1 tablespoon low-sodium soy sauce or tamari
1/2 tablespoon sesame oil
Salt, pepper, and red pepper flakes, to taste

DAY 3

Meal 1 (Breakfast): Scrambled Eggs with Sautéed Vegetables and Almonds

3 large eggs
1 cup mixed vegetables (e.g., spinach, bell peppers, onions, mushrooms)
1 tablespoon olive oil for cooking
2 tablespoons almonds, chopped
Salt and pepper, to taste

Meal 2 (Lunch): Chicken and Veggie Lettuce Wraps with Avocado Salsa

4 oz grilled chicken breast, sliced
1/2 medium avocado, diced
1/4 cup cherry tomatoes, diced
1/4 cup cucumber, diced
1/4 cup red onion, diced
1 tablespoon fresh cilantro, chopped
1 tablespoon fresh lime juice
3 large lettuce leaves (e.g., romaine or butter lettuce)
Salt and pepper, to taste

Meal 3 (Snack): Celery Sticks with Almond Butter

3 large celery stalks, cut into 3-inch pieces
2 tablespoons almond butter

Meal 4 (Dinner): Beef and Vegetable Skewers with Quinoa and Steamed Green Beans

4 oz lean beef (e.g., sirloin, tenderloin), cut into 1-inch cubes
1 cup mixed vegetables for skewers (e.g., bell peppers, cherry tomatoes, zucchini, red onion), cut into 1-inch pieces
1/2 cup cooked quinoa
1 cup green beans, steamed
1 tablespoon olive oil for grilling
1/2 tablespoon fresh lemon juice

IMPROVING INSULIN SENSITIVITY THROUGH EXERCISE

Weight training, also known as resistance training or strength training, has been shown to improve insulin sensitivity, which is the body's ability to respond effectively to the hormone insulin. Here's how weight training can enhance insulin sensitivity:

Increased muscle mass: Weight training helps build and maintain muscle mass. Muscle tissue plays a significant role in glucose uptake from the bloodstream. With more muscle mass, your body can more efficiently remove glucose from the blood, leading to improved insulin sensitivity.

Glucose transporter proteins: Resistance training stimulates the production and translocation of glucose transporter proteins (mainly GLUT4) to the cell surface. These proteins help move glucose into cells in response to insulin. Increased levels of GLUT4 improve glucose uptake and insulin sensitivity.

Enhanced glycogen storage: Regular weight training can increase the capacity of muscles to store glycogen, which is a form of stored glucose. By increasing glycogen storage capacity, muscles can take up and store more glucose from the bloodstream, leading to improved insulin sensitivity.

Reduced body fat: Weight training can contribute to overall fat loss by increasing muscle mass and boosting metabolism. Lower levels of body fat, particularly around the abdomen, are associated with improved insulin sensitivity, as excess adipose tissue can release inflammatory molecules and hormones that impair insulin action.

Increased post-exercise glucose uptake: After a session of weight training, muscles are more sensitive to insulin and can take up glucose more efficiently for recovery and repair. This increased post-exercise insulin sensitivity can help lower blood sugar levels.

Incorporating weight training into your exercise routine can be an effective strategy for improving insulin sensitivity, it should be prioritised over aerobic exercise where possible. Add cardio as needed.

HOW TO REDUCE INFLAMMATION

Reducing systemic inflammation involves adopting a combination of healthy lifestyle habits and making specific dietary choices. Here are some strategies to help decrease chronic, low-grade inflammation in the body:

Maintain a healthy weight: Excess body fat, particularly around the abdomen, can contribute to inflammation. Losing weight, if overweight, can help lower inflammation levels.

Eat an anti-inflammatory diet: Consume a diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats. Focus on foods that have anti-inflammatory properties, such as leafy greens, berries, fatty fish (like salmon, mackerel, or sardines), nuts, seeds, and olive oil. Limit or avoid foods that promote inflammation, such as processed foods, refined carbohydrates, sugar, and unhealthy fats (trans fats and excessive saturated fats). Basically, EAT FOODS NOT PRODUCTS!

Regular exercise: Engage in regular physical activity, including a mix of weight training along with some aerobic exercises such as walking, swimming, or cycling but make sure you allow for adequate recovery. We recommend 3 to 5 sessions per week of no longer than an hour or so. Allowing a day of rest between your resistance training sessions would keep inflammation to a minimum.

Manage stress: Chronic stress can contribute to inflammation. Audit your lifestyle and social situations. Aim to reduce any external factors which may be causing you stress. Practice techniques, such as deep breathing, meditation, yoga, or mindfulness to help manage your stress response. Surround yourself with people and things that promote calm and happiness as often as possible.

Get adequate sleep: Aim for 7-9 hours of quality sleep each night. Poor or insufficient sleep can contribute to inflammation. Adding supplements like magnesium can help to improve the quality of your sleep significantly. Start by taking between 2-400mg of magnesium per night before bed.

Avoid smoking and excessive alcohol consumption: Both smoking and excessive alcohol intake can contribute to inflammation.

Stay hydrated: Drinking enough water throughout the day is essential for overall health and can contribute to reducing inflammation. We recommend aiming to drink between 3-4 litres of water per day to help flush out toxins.

Useful supplements for controlling inflammation

Vitamin D - 5000iu per day

Omega 3 - 5-10g per day

Curcumin - 400mg 3x per day

Magnesium - 2-400mg per day

Vitamin C - 1000mg per day

Estro Support - 2 caps per day

CONTROL EXERCISE INDUCED STRESS AN INFLAMMATION

Excessive exercise, also known as overtraining, occurs when a person engages in high-intensity or high-volume physical activity without allowing enough time for recovery. While regular exercise is generally beneficial for overall health and can help reduce inflammation, excessive exercise can actually lead to increased inflammation in the body.

Here's how excessive exercise can contribute to inflammation:

Muscle damage: High-intensity or prolonged exercise can cause microscopic damage to muscle fibers. In response to this damage, the immune system initiates an inflammatory response to help repair and rebuild the affected tissues. However, without adequate rest and recovery, this inflammatory process can become chronic and potentially lead to muscle soreness, reduced performance, and an increased risk of injury.

Oxidative stress: Intense exercise increases the production of reactive oxygen species (ROS) and free radicals in the body, which can cause oxidative stress. Oxidative stress can trigger an inflammatory response and contribute to tissue damage if not properly balanced by antioxidant defense mechanisms.

Hormonal imbalances: Overtraining can lead to hormonal imbalances, such as elevated cortisol levels, which can contribute to inflammation. Cortisol is a stress hormone that, when chronically elevated, can suppress the immune system, impair tissue repair, and promote inflammation.

Increased risk of illness or infection: Excessive exercise can suppress the immune system, making the body more susceptible to illness or infection. In response to infections, the immune system mounts an inflammatory response, which can further exacerbate inflammation in the body.

Overuse injuries: Excessive exercise can increase the risk of overuse injuries, such as tendonitis, stress fractures, or joint inflammation. These injuries can cause localized inflammation and may become chronic if not properly addressed.

To prevent excessive exercise-related inflammation, it's important to strike a balance between training and recovery. We recommend training 3-5 days per week adding a rest day between each training session.

Prioritise progressive weight training and minimise HIT training to a maximum of 1-2 short sessions per week or a few minutes at the end of your weight training sessions. A common mistake is using HIIT style training or classes as your primary method of exercise. Enjoy your rest days, get adequate sleep, listen to your body and adjust your exercise routine as needed.

Useful supplements to reduce training induced stress

Magnesium - 2-400mg per day

Ashwaganda - 500mg per day (2 weeks on 2 weeks off)

In this guide we've tried to provide a comprehensive guide to managing PCOS more effectively through targeted lifestyle changes. The important thing now is for you to begin integrating these changes into your lifestyle one by one. Don't try to do too much too soon and overwhelm yourself.

Managing PCOS effectively requires a multifaceted approach that combines healthy eating, regular exercise, and stress management. By incorporating the strategies outlined in this eBook, you can take control of your symptoms and improve your overall quality of life. Remember, consistency is key, and making these changes a part of your daily routine will yield the best results.



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