



## PCOS

Polycystic ovary syndrome (PCOS) is a condition of hormonal imbalance is thought to effect in 1 in 5 people with ovaries.

The 3 main features of PCOS are:

- irregular periods – which means your ovaries do not regularly release eggs
- excess androgen – high levels of androgen hormones in your body, which may cause physical signs such as excess facial or body hair and acne
- polycystic ovaries – your ovaries become enlarged and contain many fluid-filled sacs that surround the eggs (but despite the name, you do not actually have cysts if you have PCOS)

Evidence has shown that diet and lifestyle changes can have a significant impact on management of associated symptoms of PCOS such as insulin resistance, weight gain, high androgens, excess hair growth and irregular periods. This document will highlight some of the beneficial changes you can make to your nutrition and lifestyle to take control of your PCOS.

### **Weight loss**

Weight gain is something many people struggle with in PCOS due to hormonal imbalances in the body and inflammation. High levels of body fat, particularly around the abdomen, is linked with insulin resistance, an issue that effects nearly 70% of people with PCOS. A gradual weright loss, in those with a BMI that is greater than 25, of approx 5-10% has also been linked with normalising periods, reducing inflammation and improving fertility.

While weight loss can improve some of PCOS symptoms, it is often very difficult for those with PCOS to lose weight, and yo-yo dieting and restrctive diets can be more harmful to health and lead to developing poor relationships with food. It is more important to have the foundations of a balanced diet with the right types foods instead of looking for quick weight loss techniques. In addition, restricve diets and stressing about our weight can increase our stress hormones which can make it more difficult for those with PCOS to lose weight. Chat to your medical team or dietitian if you would like to lose weight.

### **Carbohydrates**

Following a low glycamic index diet has been linked to improved insulin reistance, hormone regulation and management of symptoms of PCOS. All carbohydrates are broken down into glucose in our blood stream which stimulates the pancreas to release insulin to allow glucose to enter our cells. Low GI carbohydrates are broken down more slowly providing a steady release of glucose into the blood stream. This results in steadier release in insulin and can helps to keep reproductive hormones and blood sugar stable.

The portion of carbohydrates on the plate is also important. While adapting to choosing low GI carbohydrates is beneficial to blood sugar balance, too much carbohydrates in general can still cause insulin resistance. Ideally portion out food at meal times as ½ plate vegetables, ¼ plate protein and ¼ plate carbohydrates to ensure you are getting the recommended quantity of different food groups on your plate. You may have been previously advised to adapt a low carbohydrate diet, however low carb diets are often difficult to follow for those with PCOS due to intense cravings caused by insulin resistance, which may lead to cycles of restricting and bingeing. A low GI diet is often more beneficial to maintain over time rather than going through restrict-binge cycles as a result of trying to adhere to a low carb diet.

Below is a summary of low GI carbohydrate options:

#### Carbohydrate food

Bread

#### Lower GI choice

Multigrain, granary, rye, seeded, wholegrain, oat, sourdough, pita bread and chapatti

Potatoes

New potatoes in their skins, sweet potato

Pasta

All pasta, cook until al dente and noodles

Rice

Basmati rice, long grain and brown rice

Other grains

Bulgur wheat, barley, couscous and quinoa

Breakfast cereals

Porridge, muesli, most oat and bran-cereal

#### Fats

Omega-3 polyunsaturated fatty acids have potent anti-inflammatory effects in the body and are thought to be effective in the improving some of the metabolic and inflammatory disorders of PCOS such as insulin resistance, obesity, inflammation, dyslipidemia and fertility issues. By stabilising blood sugars and insulin levels, androgen levels can also reduce, thereby reducing acne, excess hair growth and irregular periods. Some people with PCOS are also at a higher risk of developing heart disease later in life. Therefore increasing intake of foods rich in Omega 3 could be beneficial to people with PCOS.

Sources include:

- Oily fish such as salmon, mackerel, sardines, herrings and tuna are excellent sources and ideally you should be aiming for 3-4 portions per week at time of conception
- Nuts and seeds in particular flaxseeds, chia seeds and walnuts
- Vegetable oils especially olive oil and rapeseed oil
- Avocado
- Eggs

## **Fruits, vegetables and legumes**

Fruit, vegetables and legumes are important plant based foods that are known for their high nutritional content. These foods are rich in antioxidants and are a source of soluble and insoluble fibre. Antioxidant rich foods can help reduce some of the inflammatory symptoms of PCOS by scavenging free radical that damage cells. Their high fibre content also makes them a low GI food and therefore can help with insulin resistance and blood sugar balance. Increasing your intake of these foods is easier than you think. Try some of these ideas:

- Aim for half of your plate to be full of vegetables at meal times
- Include antioxidant rich fruit such as berries at breakfast and snack time
- Add chickpeas into a home made curries
- Add mixed beans into salad
- Swap chicken for falafel at lunch time
- Have a snack of hummus and crudités
- Try veggie recipes such as bean chill, chickpea tagine, lentil or bean burgers

## **Magnesium**

Magnesium (Mg) is a cofactor in over 300 enzyme systems and is a required nutrient for both energy production and blood sugar control. Therefore being deficient in Magnesium could contribute to increased risk of insulin resistance, however evidence in people with PCOS is lacking at present. Recent studies have also found that magnesium can help with some of the uncomfortable PMS symptoms experienced in PCOS.

Sources of magnesium include

- Pumpkin seeds
- Chia seeds
- Almonds
- Spinach
- Cashews
- Peanuts
- Soymilk
- Black beans
- Edamame

## **Zinc**

Zinc is an essential microelement that is present in all body tissues and fluids. It has many important roles in the body including cell growth and protection, and maintaining a healthy endocrine and immune system. Studies have found that many people with PCOS have suboptimal zinc levels, which may correlate with some of the symptoms of PCOS such as insulin resistance, fertility issues, oxidative stress and hirsutism.

Increasing dietary zinc intake may help with managing symptoms of PCOS. Many different foods contain zinc, but that of animal-origin are the richest source of well-absorbed zinc. Plant-based foods,

such as cereals, grains, nuts and legumes contain smaller and less efficiently absorbed amounts of this element.

Zinc is found in:

- Oysters
- Shellfish – especially crab and lobster
- Red meat
- Cashew nuts
- Chickpeas
- Baked beans
- Fortified breakfast cereal

### **Vitamin D**

Up to 85% of people with PCOS have vitamin D deficiency, which may exacerbate some PCOS symptoms including insulin resistance, inflammation, irregular menstrual cycles, infertility, cardiovascular disease, hormone imbalances and obesity. The main source of vitamin D is through sun exposure, however in Ireland the sun's rays are only strong enough for us to produce vitamin D between September and April. Therefore, it is recommended that adults in Ireland take a daily 10-25µg vitamin D<sub>3</sub> supplement during these months. It is important to note that too much vitamin D can be toxic, so it is not advised to take more than 25µg vitamin D from supplements daily.

### **Inositol**

A daily 4g inositol supplement (2g in the morning and 2g in the evening) is recommended in PCOS. Inositol has been shown to decrease insulin resistance, regulate testosterone levels, regulate menstrual cycle and improve ovulation in people with PCOS. It also contributes to normal blood lipid levels (fat levels) and improves egg quality.

### **Exercise**

Alongside dietary changes, exercise is another fundamental component of managing PCOS. Regular exercise can help reduce body fat, improve insulin resistance and hormonal balance. The general recommendations are 30 minutes of moderate-intensity physical activity 5 days per week, plus strengthening exercises on at least 2 days per week. Aiming for 30 mins of cardio 3 times a week is a good place to start if looking to see the reported health benefits. Combining this with some resistance training could also be beneficial. Regular strength training has been found to have positive impact on insulin sensitivity of cells and also help reduce androgen levels. This can be incorporated slowly into your exercise routine and caution should be taken if there is history of any injuries. Like aerobic exercise start with 2-3 times a week for 30-45 minutes and gradually increase from there. There are mixed reports on the effects of high intensity interval training (HIIT) in PCOS, with some studies showing it improves insulin resistance, and others showing it can temporarily increase stress hormone levels. This makes it difficult to make specific recommendations on HIIT in PCOS at this current moment in time. Focusing on the types of exercise that you enjoy most will be most beneficial for your mental and physical health.

## **Stress**

Stress can exacerbate hormonal imbalances and many people with PCOS find that their symptoms worsen when they are stressed. While it isn't always possible, try to take an hour of stress relief per day if you can. Some stress relief activities that are useful in PCOS include meditation and acupuncture – there is even growing evidence suggesting that acupuncture may promote ovulation and hormone regulation. Other activities that can help reduce stress include meditation, deep breathing, yoga and exercise. A good resource for stress management is [stresscontrol.ie](https://www.stresscontrol.ie).

## **Sleep**

People with PCOS are at an increased risk of sleep disorders. When we are sleep deprived we often make poorer food choices. In addition, lack of sleep is associated with poor quality of life, weight gain, poor cardiac metabolic health and type 2 diabetes risk. Practicing a sleep hygiene routine can help promote a better nights sleep. Some good sleep hygiene tips include:

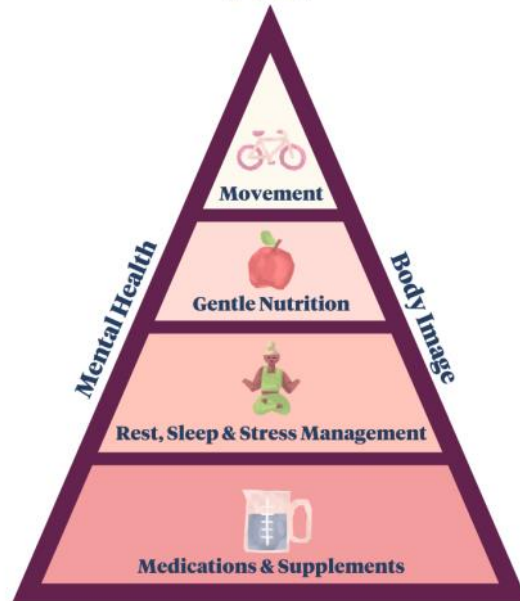
- Avoid all screens for 2 hours before sleep
- Dim lights in the house 1-2 hours before sleep-time
- Avoid all caffeinated drinks after 12pm
- Have a warm bath before bed about 10 drops of lavender
- Practice a little Meditation /Breathing Exercises
- Unplug /power off electrical devices in bedroom
- Try a Herbal tea before bed e.g. Chamomile; Pukka Night-time tea

## **Where do I begin?**

Your dietitian will work through all of the above points with you in a structured order. Following the hierarchy below, medications and supplements will be addressed first, followed by rest, sleep and stress management, then nutrition and movement.

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## Hierarchy of Supportive Strategies PCOS



PCOS Hierarchy – source: London Centre For Intuitive Eating.