



WHAT IS PCOS?

Polycystic ovary syndrome is a common hormone imbalance affecting 1 in 5 women of reproductive age, and can affect girls as young as 11 years old. It is a condition in which a woman's ovaries produce greater than average amounts of hormones called androgens, possibly resulting in the development of cysts (fluid-filled sacs) on the ovaries. These hormones can also contribute to acne, excess body hair, weight gain, and irregular periods. Also, an excess of insulin may be present, which is a hormone that your body normally uses to turn food into usable energy. than normal. A variety of signs and symptoms may be present, but this does not always mean you have PCOS - it is important to talk to your doctor to rule out other causes.

DOES HAVING PCOS PLACE ME AT RISK FOR OTHER CONDITIONS?

Yes, PCOS can lead to the development of other health conditions if left untreated, including:

- Type 2 Diabetes
- Fatty Liver
- High Cholesterol
- High Blood Pressure
- Heart Disease
- Endometrial thickening, which is a thickening of the lining of the uterus and can lead to cancer if your periods are irregular for a long period of time

Signs and Symptoms

- No periods, irregular, or very heavy periods
- Polycystic ovaries
- Family history
- Weight gain or trouble losing weight
- Intense carbohydrate cravings
- Unwanted hair growth on your face or other body parts, called hirsutism
- Infertility
- Patches of dark, thick skin, called acanthosis nigricans
- Acne
- Depression and/or anxiety
- Decreased quality of life
- Eating disorders
- Negative body image and/or self-esteem
- Insulin resistance

HOW IS PCOS TREATED?

Generally, treatment falls into a few different categories:

- Lifestyle changes, such as healthy food choices, exercise, mindfulness, and family and friend support
- Birth control pills (hormonal contraceptives)
- Metformin (an insulin sensitizer)
- Anti-androgen medications (androgen receptor blockers)

The most important thing to remember is that you are not alone, and working towards a healthy lifestyle is something that family and friends can do together! Aim for at least 60 minutes of physical activity 3-5 times per week, whether power-walking with your friends after school, playing volleyball, hiking, dancing, bike riding – discover what you *love* to do to stay fit.

NUTRITION – WHAT FOODS ARE PCOS-FRIENDLY?

Working with a nutritionist who specializes in PCOS can help to clear up some confusion when it comes to planning healthy, balanced meals to nourish your body. They can give you tools for your toolbox, which will be tailored to fit the unique person that you are. Everyone is different and everyone needs different forms of support, right?

Top tips:

- Use a smaller plate – our eyes are often bigger than our stomachs!
- Eat carbohydrates smartly
 - Choose complex, fiber-rich choices, looking for **whole grains** on the label
 - Enjoy low glycemic index foods, like berries and cucumbers
 - Avoid sugary and refined foods, like baked goods and potato chips
- Eat a lean protein with all meals and snacks
 - Such as low fat cheese + apple slices for a snack or a grilled chicken salad for dinner
- Focus on plants, making HALF your plate non-starchy veggies!
- Try healthy fats, found in foods like avocado, nuts and seeds, and salmon


Dietary Fat

Fat has gained a poor reputation over the years as a source of calories and a culprit responsible for weight gain. However, healthy sources of fat are quite important for our body, providing fuel, promoting hormone regularity, slowing the release of glucose (our body's energy source from carbohydrates), and keeping us satisfied.

The type of fat is what matters most, as eating the *less healthy types* can actually make PCOS worse. Diets high in omega-6 fats as well as saturated and trans fats can worsen insulin resistance and contribute to high triglycerides and high cholesterol. Therefore, eating a lot


of these fats can lead us faster down a path towards chronic diseases like diabetes and heart disease.

Fats are divided into the following four categories, which can be a great way to look at “sometimes foods” versus “always foods”:

“Never” Foods	“Sometimes” Foods	“Always” Foods 	
Trans fats	Saturated fats	Unsaturated fats	
		Polyunsaturated	Monounsaturated
<ul style="list-style-type: none"> Hydrogenated oils, margarines Shortening 	<ul style="list-style-type: none"> Animal products (meats, processed meats, cheese, butter, cream, mayonnaise) Some plant oils (coconut oil, palm oil, cocoa butter) 	<ul style="list-style-type: none"> Soybean, corn, and flax oils Flax seeds Walnuts Fatty fish (salmon, tuna, trout) 	<ul style="list-style-type: none"> Olive peanut, safflower, canola, and sunflower oils Avocado Nuts and seeds

Unsaturated fats. This category is divided into monounsaturated fats and polyunsaturated fats; both of which are healthy fats. A specific type of polyunsaturated fat, an omega-3 fatty acid (EPA, DHA, and ALA), has been shown to contribute significantly to heart health and reduce your risk of developing type 2 diabetes.

Do not be fooled by *fat-free treats* in the grocery store. Although fat content in grams may be a little lower, it is often replaced with refined grains and sugars that can wreak havoc on your blood sugar. (See our section on label-reading, page 8).




How can I eat omega-3s?

- Add ground flax seed to your baking, morning oatmeal, yogurt, or smoothies
- Sautee veggies in canola oil
- Include a fatty fish in your diet, canned or fresh, once a week – Fish Fridays!
- Drizzle your salads or steamed veggies with pumpkin seed oil, flax seed oil, or walnut oil


Carbohydrates, Starches, Sugars, What?

A common misconception is that carbohydrates should be avoided when trying to lose weight or control blood sugar. Carbohydrates are actually quite important, providing a primary source of quick energy to fuel our days and a host of other important vitamins and minerals. It is when carbohydrates are eaten in excess that raises concern, as excess carbohydrates are broken down to glucose in the body and can be stored as fat.

For PCOS, the type of carbohydrate matters. We divide these into simple and complex, with the latter being the healthier choice for both weight and blood sugar control – and in fact, complex types of carbohydrates are the better choice for everyone looking to follow a healthy, balanced eating plan. Complex carbohydrates contain fiber, which can help keep you fuller longer and also is beneficial for controlling blood sugar.

“Rarely to Never” Foods	“Sometimes” Foods	“Always” Foods 
Sugar-sweetened beverages <ul style="list-style-type: none"> • Fruit juice • Regular soda • Sports drinks • Energy drinks • Sweet tea 	Refined grains from white flour <ul style="list-style-type: none"> • White bread • White pasta • White rice • Sugary pastries, donuts, cookies, and cereals Dried fruit, fruit spreads, canned fruit in heavy syrup, or sweetened applesauce Starchy vegetables <ul style="list-style-type: none"> • Corn, peas, lima beans, winter squash, sweet/white potatoes 	Whole grains! <ul style="list-style-type: none"> • Whole wheat breads • Old fashioned oats and high fiber cereals like Shredded Wheat, Kashi, or All Bran • Whole wheat pasta, quinoa, brown rice, amaranth, millet, buckwheat, spelt... Whole fruit! <ul style="list-style-type: none"> • Fresh or frozen Non-starchy vegetables! <ul style="list-style-type: none"> • Lettuce, leafy greens • Cucumbers, celery, carrots, radishes... Dairy <ul style="list-style-type: none"> • Low fat or fat free milk • Plain or sugar-free yogurts • Low fat cheese

Glycemic index (GI) is a term your doctor or dietitian may have mentioned when talking about controlling blood sugar. All foods can be categorized by their glycemic index, which describes how that food affects blood sugar. A high GI food can lead to spikes in your blood sugar. These include many of our simple or refined carbohydrates. A low GI food on the other hand, such as a complex carbohydrate, will be absorbed more slowly and cause less of a spike in blood sugar.

 Complex Carbohydrates – Low GI	Simple/Refined Carbohydrates – High GI
Fiber-rich whole grains! <ul style="list-style-type: none"> • Whole wheat breads • Old fashioned oats, high-fiber cereals • Whole wheat pasta • Quinoa, brown rice, amaranth, millet, buckwheat, spelt... Whole fruit, like apples, berries, grapes, oranges, peaches, and plums Non-starchy vegetables, like leafy greens, cucumbers, celery, carrots, radishes, asparagus, broccoli, green beans, zucchini, and cauliflower	<ul style="list-style-type: none"> • White breads, bagels, and muffins • Processed snack foods and baked goods • Juice, soda, and other sugar-sweetened beverages • Sugars (white and brown, honey, corn syrup, agave)

Dried fruits and tropical varieties, such as bananas and pineapple, tend to have a higher glycemic index. Also, a higher glycemic index is found in those starchy varieties of

vegetables, such as peas, corn, potatoes, and winter squash. These items are still considered healthy choices, but should be “sometimes” foods, or paired with a good source of protein to prevent your blood sugar from spiking.

Combining foods for blood sugar control. Combining a variety of foods at meals and snacks not only provides us with many different nutrients, but also aids in blood sugar control. Eating a carbohydrate alone, whether simple or complex, can lead to increases in blood sugar that may be difficult to manage. You may feel sweaty, dizzy, tired, or just plain lousy when this happens.

Protein and healthy fats take longer to digest, which is why items like an egg or yogurt tend to keep you fuller longer than a handful of pretzels. Protein and fat will slow down how fast those foods are broken down in your stomach, therefore slowing insulin release. Your body can then utilize the glucose it needs SLOWLY over time rather than causing a spike.

Some easy snack combinations include:

- Apple + low fat cheese cubes
- Berries + yogurt
- 1 slice of whole wheat bread + prepared tuna fish or sliced turkey
- Dried fruit + nuts or seeds
- Whole wheat crackers + peanut butter
- Rice cakes + sliced avocado
- Baby carrots + hummus

A Tip on “Sugar-Free”

Sugar-free versions of foods are an alternative to regular versions of baked goods, sodas, sports drinks, and other items. Rather than sugar, they contain *artificial sweeteners* that are free of carbohydrates. However, artificial sweeteners may lead to upset stomachs in some individuals. Just remember, *natural is always better*. Sticking to foods that are naturally sweet, such as whole fruits, vegetables like beets and squash, and sweet potatoes, will lend more nutrients than artificial alternatives... and these items are *certainly* safe for our health.

Try putting lemon slices, cucumber slices, or fresh berries in your water or plain seltzer for a surprisingly sweet treat that may satisfy a craving for diet lemonade or soda!



Vitamin D

For females with PCOS, vitamin D may be a nutrient of concern. Long-term treatment with spironolactone – an anti-androgen – can have an impact on our bone health. Vitamin D is necessary for adequate calcium absorption, which keeps our bones healthy and strong. A deficiency in Vitamin D not only causes poor bone mineralization but also is associated with common conditions in PCOS, like diabetes and heart disease.

Vitamin D can be obtained from:

- Sun exposure
- A dietary supplement
- Food (salmon, tuna fish, fortified cereals, fortified cow's milk or soy milk)

Taking a supplement may be appropriate if these foods are not included in your daily food plan. If you are interested in taking a supplement or want to know your vitamin D levels, talk to your doctor.



<http://nutritionbyerin.com/wp-content/uploads/2015/07/549960-59517-40.jpg>

Antioxidants

Are you a **cinnamon** fan? In autumn, sprinkled over fresh apple slices or mixed into pumpkin pie? Added to your oatmeal for a warm, nourishing morning breakfast? Ground cinnamon is a great way to add flavor without calories, carbohydrates, or fat. Additionally, research suggests that cinnamon may play a role in regulating serum insulin levels, and thus blood sugar, in individuals with and without diabetes. Cinnamon has also been shown to decrease bad cholesterol levels and triglycerides.

How does this potent spice do such a thing, you may ask? Cinnamon is considered an antioxidant, which means it reduces inflammation in the body caused by disease, trauma, stress, and even high blood sugars. Cinnamon may also reduce insulin levels by slowing how fast carbohydrates move through your body.

So, consider a generous sprinkling the next time you snack. Other than our autumn favorites, cinnamon can be a great addition to peanut butter sandwiches, oatmeal, cottage cheese, yogurt, smoothies, and even curry-spiced stews.

To meet therapeutic doses close to those used in many research studies, cinnamon may be taken in capsule form – sold as *cinnamon cassia extract*. However, be sure to check with your doctor before taking the capsule supplement form of cinnamon, as high doses may make you prone to *low* blood sugar. If you aren't into swallowing capsules, **a teaspoon or so mixed in your morning oats is just fine.**

Cinnamon Toasted AlmondsAdapted from *Joyful Healthy Eating*

Prep: 5 minutes

Cook: 1 hour

Ingredients:

2 cups whole raw almonds
 1 teaspoon ground cinnamon
 ½ teaspoon salt
 1 tablespoon olive oil

**Instructions:**

Preheat oven to 250 degrees. In a large bowl, add almonds, cinnamon, salt, and olive oil. Toss to coat all almonds thoroughly. Spread out on a baking sheet in a single layer. Roast for 1 hour, remove from oven, and serve immediately or store in an airtight container.

Nutrition for ¼ cup: 154 calories, 14 g fat (mostly healthy fats!), 1 g sugar, 3 g fiber, 5 g protein

So, How Do I Do It?

Really, it is all about balance – a balance of protein, complex carbohydrates, healthy fats, and those colorful fruits and vegetables.

GREEN LIGHT FOODS: Daily intake of whole grains, fruits and vegetables, lean proteins, healthy fats, and low fat dairy products

RED LIGHT FOODS: Limiting red meat, processed foods, refined sugars/grains, and unhealthy saturated and trans fats.

Here is a sample daily food plan for a teenage female:

Breakfast:

¾ cup multigrain cheerios
 1 tablespoon of sliced almonds
 A sprinkle of cinnamon
 ½ cup low fat milk or plain soymilk
 ¾ cup sliced strawberries

Lunch:

Turkey, lettuce, tomato, and low fat cheese rolled into a 10" whole grain tortilla
 1 tsp mustard or olive oil-based mayo
 1 cup baby carrots and broccoli
 2 tablespoons hummus

Afternoon Snack:

1 tablespoon of peanut/nut butter
 ½ banana or 1 small apple

Dinner:

1 small baked sweet potato, palm-sized
 Grilled chicken, a palm-sized portion
 1 cup of steamed mixed vegetables, drizzled with olive oil

Evening Snack:

1 cup frozen grapes
 2 tablespoons vanilla yogurt

** Snacks should fit in one palm.

** Beverages: Stick with water, coffee or tea with a teaspoon or less of sugar or artificial sweetener, unsweetened iced tea, or flavored seltzer waters. Limit sugar-sweetened beverages, such as sports drinks, fruit juice, regular soda, and sweet tea.

Navigating a Nutrition Label

Learning how to read a nutrition facts label on various food items is an important skill to master. We are not saying to OBSESS over each and every little thing you eat, but understanding what to look out for on a label can be helpful! Next time you go grocery shopping with a family member, show off your skills.

Serving Size: Serving size equals one serving of the product. All the other nutrient values listed on the label are based on this amount.

Servings per Container: How many servings you can get from one package. Some containers have a single serving, but most have more than one serving per package.

Calories (total): Calories are a unit of energy that come from carbohydrates, protein and fat. Calories give us energy so we can think and be active.

Calories from Fat: The amount of calories that come from fat. It's not the percent of fat in the food.

% Daily Value: The percentage of the recommended daily value for a nutrient that you get in one serving. A food that has more than 20% of the Daily Value of a nutrient is an excellent source; however, for some nutrients such as fat, sodium, and cholesterol, the lower the percent, the better.

Total Fat: Fat is essential for our bodies. There are 4 kinds of fat. Monounsaturated and polyunsaturated fat are the kinds of fat that are healthy for the heart.

Trans Fat: *Trans* fat is unhealthy for your heart, and should be avoided.

Cholesterol: Cholesterol is a substance found only in animal products. Eating too much cholesterol is not healthy for your heart.

Sodium: Sodium is the amount of salt in the serving of food. People with high blood pressure are often told to follow a low sodium diet.

Total Carbohydrate: Carbohydrates give your muscles and brain energy. Certain types of carbohydrates are sometimes listed on the label. If counting carbohydrates for insulin administration and diabetes management, total carbohydrates are an important number to consider. Total carbohydrate content includes the grams of sugar, so there is no need to add these together.

Dietary Fiber: Helps with digestion and keeps you full between meals.

Sugars: Are important for instant energy, but eating too much added sugar can be unhealthy.

Protein: This nutrient is used to build muscle and fight infections.

Vitamins and Minerals (A, C, Calcium, Iron): The percent (%) Daily Value for vitamin A, vitamin C, calcium, and iron you are getting from a serving of this product. Other vitamins and minerals may be included in this section.

Adapted from The Center for Young Women's Health

Start Here
Check Serving Size

Check Calories

Limit These Nutrients

Get Enough of These Nutrients

Quick Guide to % Daily Value
5% or less is low
20% or more is high

Footnotes

Nutrition Facts		
Serving Size 1/2 cup (114g)		
Servings Per Container 4		
Amount Per Serving		
Calories 90		Calories from Fat 30
		% Daily Value*
Total Fat 3g		5%
Saturated Fat 0g		0%
Cholesterol 0mg		0%
Sodium 300mg		13%
Total Carbohydrate 13g		4%
Dietary Fiber 3g		12%
Sugars 3g		
Protein 3g		
Vitamin A 270%	•	Vitamin C 10%
Calcium 2%	•	Iron 4%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories	2,000 2,500
Total Fat	Less than	65g 80g
Sat Fat	Less than	20g 30g
Cholesterol	Less than	300mg 300mg
Sodium	Less than	2,400mg 2,400mg
Total Carbohydrate	Less than	300g 375g
Dietary Fiber	Less than	25g 30g

<https://images.heb.com/is/image/HEBGrocery/article/nutrition-facts-label.jpg>

Resources



Center for Young Women's Health of Boston Children's Hospital
www.youngwomenshealth.org

PCOS Network www.PCOSnetwork.com

PCOS Nutrition www.PCOSnutrition.com

PCOS Foundation www.pcosfoundation.org

Project PCOS www.projectPCOS.org

PCOS Challenge www.PCOSchallenge.com

GirlsHealth.gov <http://www.girlshealth.gov/body/reproductive/pcos.html>

American Diabetes Association (ADA) www.diabetes.org

DASH Diet <http://dashdiet.org/default.asp>