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### Just In

#### Mediterranean Diet Protects Aging Brain

According to a new study from *Neurology*, close adherence to a Mediterranean-style diet was associated with less brain atrophy, with an effect similar to five less years of aging. Researchers evaluated the eating habit surveys and MRI (magnetic resonance imaging) brain scans of 674 elderly individuals with an average age of 80 years. Those who reported eating habits that resembled a Mediterranean-style diet, with a focus on fish, fruits, vegetables, whole grains, legumes, nuts, seeds and olive oil, had a larger total brain volume and more grey and white matter than people who didn't regularly follow many aspects of the Mediterranean diet. Higher fish intake and eating less meat also were associated with larger total brain volume. [EN](#)

*Neurology*, November 2015



## Feed Your Gut With Fiber

*A healthy gut microbiome is essential to good health. Support yours with the high-fiber foods it needs to thrive.*

Dietary fiber is good for us, but prebiotic fiber has extra benefits. Prebiotic fiber is dietary fiber that escapes digestion in our small intestine but is fermented by “good” bacteria in our large intestine. By nourishing beneficial bacteria, prebiotics can shift the balance of your gut’s community of bacteria and other microbes to a healthier environment. That’s great news, because a healthy gut microbiome promotes a strong immune system and lowers levels of chronic inflammation linked to many serious health conditions.

**Push prebiotic fiber.** The main types of beneficial bacteria (probiotics) encouraged by prebiotics are *Bifidobacteria* and *Lactobacilli*, also the most commonly used probiotics in foods, such as yogurt and supplements. All types of fermentable dietary fiber, such as fiber found in many fruits, vegetables, and whole grains, are potential prebiotics, but there is evidence that the following can improve the good gut bacteria population in humans:

- ▶ **Fructans** are chains of fructose molecules. Fructo-oligosaccharides (FOS) are short-chain fructans, while inulins (a type of carbohydrate) are longer chain fructans. Chicory and Jerusalem artichoke are the biggest sources of fructans, and fructans are often

added to processed foods to increase fiber content. Although fructans have health benefits, eating them in large amounts may cause unpleasant intestinal side effects.

- ▶ **Galacto-oligosaccharides (GOS)** are chains of the sugar galactose. They are found in human milk, which is one reason that a healthy infant microbiome has large numbers of *Bifidobacteria*. Past infancy the main dietary sources are certain legumes, such as lentils, lima beans, chickpeas, red beans, and soy products.
- ▶ **Resistant starch** also resists digestion. It’s found in whole grains, and cooked and cooled pasta, rice, and potatoes.

**Increase total fiber.** Eating fiber-rich foods in general promotes the growth of bacteria that break down plant starches and fibers into short-chain fatty acids (SCFAs). Some SCFAs may protect against inflammation and cancer, while others help us absorb essential minerals from our food, including calcium, magnesium, and iron.

People who consistently eat plenty of fiber, such as in a vegan, vegetarian, or Mediterranean diet, tend to have higher levels of SCFAs, suggesting that the amount of fermentable fiber from fruit, vegetables, and legumes matters more than the type of diet. Aim for eating a variety of whole plant foods to nourish a greater diversity of microbes in your gut ecosystem. [EN](#)

—Carrie Dennett, MPH, RDN

#### Pairing Prebiotics with Probiotics

FIBER	FOOD SOURCES	PROBIOTICS SUPPORTED
Fructooligosaccharides (FOS)	Agave plant, globe artichoke, asparagus, bananas, barley, garlic, jicama, onion, and wheat	<i>Bifidobacteria</i> , <i>Lactobacilli</i>
Inulin	Same as above	<i>Bifidobacteria</i> , <i>Lactobacilli</i> , <i>Pediococcus</i>
Galactooligosaccharides (GOS)	Lentils, beans, chickpeas, soy, cabbage, and green beans	<i>Bifidobacteria</i> , <i>Lactobacilli</i>
Resistant Starch	Cooked and cooled pasta, grains, beans, and potatoes; green bananas and plantains; potato starch	<i>Bifidobacteria</i> , <i>Ruminococcus bromii</i> , <i>Eubacterium rectale</i>
Beta-glucans	Oats and barley	<i>Bifidobacteria</i> , <i>Lactobacilli</i> , <i>Pediococcus</i>
Lactulose	Synthetic ingredient in laxative products	<i>Bifidobacteria</i> , <i>Lactobacilli</i> , <i>Faecalibacterium prausnitzii</i>
Guar Gum	Derived from the guar bean; used as a food ingredient	<i>Bifidobacteria</i>
Pectins	Fruits, especially apples, grapefruit, peaches, apricots	<i>Lachnospira</i> , <i>Bacteroides thetaiotaomicron</i> , <i>Lactobacilli</i>
Wheat dextrin	Ingredient in many fiber supplements	<i>Bifidobacteria</i> , <i>Lactobacilli</i>

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## Ask the EN Experts

# New Dietary Guidelines Released

What's the best diet for optimal health? The U.S. Department of Health and Human Services just answered that question with the release of the 2015-2020 Dietary Guidelines for Americans, the result of top recommendations from a panel of our nation's best and brightest nutrition experts, who pored over the scientific evidence. Here's what they came up with to keep our population healthy.

### A healthy eating pattern includes:

- A variety of vegetables from all the subgroups—dark green, red and orange, legumes, starchy, and other
- Fruits, especially whole
- Grains, at least half of which are whole grains
- Fat-free or low-fat dairy
- A variety of proteins, including seafood, lean meats and poultry, eggs, low-fat dairy products, legumes, nuts, seeds, and soy products
- Oils

### A healthy eating pattern limits:

- Saturated fats (consume less than 10% of calories)
- Trans fats (avoid them)
- Added sugars (consume less than 10% of calories)
- Sodium (consume less than 2,300 mg per day)

**Healthy eating pattern samples.** In addition, the guidelines recommended three examples for healthy eating patterns:

- The Healthy U.S.-Style Eating Pattern, based on lean proteins, whole grains, fruits, and vegetables
- The Healthy Mediterranean-Style Eating Pattern, focused on seafood, legumes, whole grains, fruits and vegetables
- The Healthy Vegetarian-Style Eating Pattern, which highlights low-fat dairy products, eggs, legumes, whole grains, fruits, and vegetables


For more info visit <http://health.gov/dietaryguidelines/>. 

—Sharon Palmer, RDN, EN Editor

## Exploring GE Salmon and Birch Sap


### Q Will I see genetically engineered salmon in my supermarket soon?

**A** On November 19, 2015, the Food and Drug Administration (FDA) approved for the first time a genetically engineered (GE) animal intended for food, the AquAdvantage® salmon (see *Environmental Nutrition*, July 2014). In January 2016, a federal spending bill, which will require the labeling of the GE salmon, cleared Congress. In the bill, lawmakers instructed the FDA to forbid the sale of the GE salmon until the agency issues labeling and disclosure guidelines.

Regarding the original FDA GE salmon approval, commercial fishermen raised concerns about whether the fish was safe to eat and potential environmental harms that might unfold if an AquAdvantage® salmon ever escaped into ocean waters and mated with wild salmon. Advocacy groups, such as Consumers Union, also pointed to potential increased allergenicity. Grocery store chains including Aldi, Giant Eagle, HEB, Kroger, Safeway, Target, Whole Foods, and Trader Joe's have announced they will not sell the controversial fish. As of January 2016, Costco and Red Lobster, a national restaurant chain, do not have plans to sell the GE salmon. 

—Christine McCullum-Gomez, PhD, RD

### Q Is birch sap a beneficial supplement?

**A** Birch sap, sometimes called birch water or birch juice, is collected during winter and spring from birch trees. It has been a traditional beverage in many European countries for centuries, supplying important nutrients during winter when food may be scarce. The sap contains some amino acids, minerals, enzymes, antioxidants, sugar, and vitamins. Birch sap is believed to have medicinal benefits including detoxification and maintaining fluid balance, as well as anti-inflammatory properties. Users believe that it helps with joint and bone health, arthritis, weight loss, anemia, cancer, tuberculosis, kidney stones, gout, skin diseases, and cholesterol management. Cosmetically, birch sap is used to get rid of freckles and moles and help with hair growth. Since birch pollen is one of the most common allergens, it is assumed that consuming birch sap can cause an allergic reaction in people sensitive to the pollen. With scant scientific research on the effectiveness of birch sap, there is insufficient evidence to support its therapeutic use or safety. People drinking birch sap who also are taking diuretics should be aware of a possible interference with their medication. 

—Sharon Salomon, MA, RD

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Photo: Thinkstock



## Munching Bean Sprouts Safely

**C**runchy, tender sprouts of germinated beans and seeds, such as mung, alfalfa, and radish, are a delicious and nutritious addition to meals.

Available year-round, sprouts are low in calories and provide a variety of nutrients, including fiber, calcium, vitamin C, and vitamin K, as well as antioxidants. One cup of mung bean sprouts, for example, contains only 30 calories, but provides over 12 percent of the daily value (%DV) of vitamin K, and more than 20% DV of vitamin C.

**Sprouting safety concerns.** Despite their healthfulness, concern over potential foodborne illness outbreaks in sprouts has been growing. Since 1996, there have been at least 30 reported major outbreaks of foodborne illnesses linked to different

types of raw and lightly cooked sprouts. Sprouts serve as hosts for bacteria, including *Salmonella*, *Listeria* and *E. coli*. Diarrhea, fever, and abdominal cramps are common symptoms that occur 12 to 72 hours after infection in these cases.

The wet, warm conditions of sprout production favor the growth of microbes. While there are approved plant treatments to reduce contamination, there is no way to guarantee that all harmful bacteria are destroyed unless the raw sprouts are cooked properly. Unfortunately, sprouts are typically enjoyed raw or lightly cooked, which may not destroy the harmful bacteria.

**Stay safe.** Proper buying, storing, and preparation techniques also can help you enjoy the delicious flavors, textures, and nutrition of sprouts while minimizing the risks. High-risk individuals, including children, the elderly, pregnant women, and

### Keeping Your Sprouts Safe

Follow these key tips when buying, storing, and eating fresh sprouts:

- Buy fresh sprouts that have been maintained under proper refrigeration. Avoid sprouts that have a musty smell or slimy appearance.
- At home, keep sprouts at 40° F or below in a clean refrigerator.
- Wash your hands properly before handling raw sprouts.
- Rinse sprouts thoroughly under running water before use.
- Cook sprouts to help minimize risk. Add to soups, stews, or stir fries near the end of the cooking process to maintain texture.
- If sprouting at home, use proper sanitation and handling techniques. Wash the seeds and container in clean water before sprouting.

persons with weakened immune systems should avoid eating raw sprouts of any kind unless they are cooked thoroughly. Many foodborne illnesses have been linked to restaurant chains, so you may want to avoid sprouts when dining out. [EN](#)  
—Kaley Todd, MS, RDN

Photos: Thinkstock

## Putting Nitrates into Perspective

**N**itrates in processed meats, like bacon, ham, deli meats, sausages, and beef jerky, have been scrutinized and vilified since the 1970s. Nitrates (in the form of sodium nitrate) are added to most processed meats to “cure” or preserve them, giving them their characteristic color and taste, while preventing contamination, particularly with the sometimes deadly *Botulinum* and *Listeria* bacteria. Yet the Environmental Working Group includes nitrates on its “Dirty Dozen” list of dangerous food additives. And the World Health Organization reports that consumption of processed meats, a source of nitrates, is strongly linked to cancer. Thus, the concern over nitrates has led to more meats labeled “no nitrates added.” Should you go nitrate-free?

**Nitrate facts.** Before reaching for that “no nitrate” product, here are a few things you should know first:

- ▶ You can’t completely avoid nitrates, since 80 percent of the nitrates in our diet come

from vegetables, such as celery, greens, beets, parsley, leeks, cabbage, and fennel, and drinking water. Only about six percent come from cured meats.

- ▶ Vegetarian diets, which have been shown to be healthy, contain about four times more nitrates than a conventional diet.
- ▶ Nitrates themselves are not the problem; there is cause for concern only when they are converted by the body to nitrosamines. Nitrosamines have been identified as cancer-causing compounds.
- ▶ Meats, such as organic lunchmeats, labeled “no nitrates added” are not actually nitrate-free. Instead of adding sodium nitrate, celery powder (naturally rich in nitrates) is typically used.



### Processed Meat Risks

According to the World Health Organization, the scientific evidence that processed meats are linked to cancer is as strong as that for smoking and asbestos. An analysis of 10 studies in the report estimated that consuming a 1.7-ounce portion of processed meat daily increases the risk of colorectal cancer by about 18 percent. However, it isn’t known if nitrates are to blame.

However, even naturally occurring nitrates can be converted in the body to nitrosamines.

- ▶ Antioxidants, such as vitamin C, found in fruits and vegetables, help reduce the conversion of nitrates to nitrosamines. Some processed meats have vitamin C added (labeled “ascorbic acid”).
- ▶ While some previous studies have linked nitrates to certain forms of cancer, several recent studies, including one published in January 2016 in the *American Journal of Clinical Nutrition*, have found that dietary nitrates may be beneficial by helping to lower blood pressure and prevent damage to arteries.

**The bottom line.** Without nitrates, bacon and ham would be an unappetizing gray color and lack that unique “cured” flavor. Choosing processed meat labeled “no added nitrates” doesn’t mean you’re avoiding nitrates; it simply means nitrate-rich celery powder has been substituted for sodium nitrate. Keep in mind that most processed meats are high in saturated fat and sodium, which everyone should limit, whether or not you choose no-nitrates-added meat. [EN](#)

—Densie Webb, PhD, RD

# Dietary Relief from GERD

*Tame the flames of gastroesophageal reflux disease naturally, with dietary and lifestyle changes.*

The burning sensation of heartburn in your chest, caused by stomach contents flowing back up into your esophagus (food pipe), can be agonizing. If you experience this more than twice a week for a few weeks, you may have GERD (gastroesophageal reflux disease). GERD affects approximately 20 percent of people in the U.S. and is on the rise due to the epidemic of obesity. Although some people rely on antacids to soothe their symptoms, dietary and lifestyle changes can be a big help.

**Recognizing reflux.** Heartburn is a tell-tale sign of acid reflux, but some people with acid reflux don't experience heartburn. "Throat symptoms such as a chronic cough, hoarseness, frequent throat clearing, throat burning, difficulty swallowing, and/or a lump-like sensation in the throat may indicate a more severe form of acid reflux disease," says Jonathan Aviv, MD, an otolaryngologist and clinical director of the Voice and Swallowing Center at ENT and Allergy Associates in New York City and author of *Killing Me Softly from Inside: The Mysteries and Dangers of Acid Reflux*. "Such throat symptoms are better predictors of risk for esophageal cancer than traditional heartburn symptoms."

This cancer risk is a big reason you shouldn't ignore any symptoms of reflux and should be evaluated by your doctor. "A precursor of esophageal cancer that we examine patients for is Barrett's esophagus, which is an abnormal lining of the lower part of the esophagus caused by chronic acid reflux," says Pankaj Vashi, MD, a gastroenterologist and chair of the department of medicine at Cancer Treatment Centers of America in Zion, Illinois.

**Medication precautions.** Television ads promote many over-the-counter (OTC) drugs for reflux. "The general recommendation is to take OTC acid reflux medication for two weeks, then stop the medication to see if the symptoms come back. If the reflux symptoms return, you need to go to your primary care doctor," Vashi says.

Doctors may prescribe stronger doses of drugs called proton-pump inhibitors (PPIs), such as Prilosec and Nexium, for longer-term use, but they're not risk-free. PPIs can weaken bones over time since they suppress acid production,



## Acidic Foods

For people with reflux, Aviv says the most problematic dietary items based on acidity are **citrus fruits, tomato products, vinegar, wine, soda, and bottled iced tea**. But that's not all. Many canned and bottled foods have become more acidic since the 1970s, when the FDA started requiring certain acidity levels for food safety reasons.

"This is one reason why you'll see ingredients such as citric acid or ascorbic acid in canned foods and beverages," Aviv says. Adding vinegar also increases acidity. For example, cucumbers have a pH around 5.5, whereas dill pickles have a pH around 3.5, so pickles are 100 times more acidic. Choosing fresh or plain frozen foods typically avoids acidic additives.

which impairs calcium absorption, Aviv says. "I prefer to try to get people to change their diet and lifestyle rather than relying on medication."

**Diet and reflux.** Although any food can potentially trigger reflux if a person is sensitive to it, certain foods more

frequently cause problems, Aviv says. He divides common problem foods into two categories: acidic foods (see "Acidic Foods") and foods that loosen or relax the muscle (the lower esophageal sphincter or LES) that acts as a control valve separating the stomach from the esophagus, thus allowing reflux to occur. The dietary items that relax the LES include **caffeine, chocolate, alcoholic beverages, mint, onions, and garlic**. **Fatty, spicy, and fried foods** also may relax the LES, according to the American Society for Gastrointestinal Endoscopy.


The reason that acidic foods can be problematic in reflux is complex.

Aviv explains that when a person has acid reflux, pepsin (an enzyme in the stomach that is activated by acid and digests protein), travels with the stomach contents up the esophagus and can stick like Velcro in the esophagus, throat, and mouth. "When a person consumes something that's very acidic, such as tomato juice, the pepsin that's lodged in these places gets activated and can start eating away at your throat and esophagus, causing damage and inflammation," Aviv says.

This mechanism is also described in a 2011 scientific paper published in *Annals of Otolaryngology, Rhinology & Laryngology*.

The interaction between acidic food and displaced pepsin means trouble for people trying to self-treat heartburn with apple cider vinegar and lemon juice, based on the incorrect idea that reflux is triggered by insufficient stomach acid. "When we examine patients who drink this highly acidic concoction, it looks like a bomb went off in their throat," Aviv says. "There is no scientific paper that supports this treatment, and it's dangerous."

**Lifestyle and reflux.** In addition to dietary changes, Vashi emphasizes these strategies to reduce reflux:

- **Lose weight, if overweight.** Excess weight puts pressure on your stomach and relaxes the LES.
- **Wear loose-fitting clothing** around the waist.
- **Avoid smoking** and second-hand smoke.
- **Eat smaller meals** and avoid eating for three hours before lying down.
- **Elevate the head of your bed** a bit (up to 30 degrees). 

—Marsha McCulloch, MS, RD



## Shopper's Guide

# Let's Get Cheesy!



Photo: Thinkstock

Cheese is a beloved food. It plays a role in the culinary aspects of many cultures known for their delicious food, including Italian, Mexican, French, Spanish, and of course, American. However, we're often told to limit cheese intake due to its saturated fat content.

The latest Dietary Guidelines for Americans (see page 2) recommend that you limit your daily saturated fat intake to less than 10 percent of your calories—that's roughly 22 grams for the average person. Some cheeses provide one-third of this amount in just one ounce. If you enjoy cheese in your diet, there is no need to forgo it completely. However, it's important to make wise choices regarding the types you eat, and how often and how much you eat it. Reduced fat cheeses also can help you include cheese with less impact on your saturated fat intake.

On the positive side, cheese is rich in protein, which is important for maintaining strong muscles and bones. Protein also can help you feel full longer, aiding in keeping your weight in check. Overall, cheese is a nutrient-rich food that can fit into a healthy eating plan if you check your portions and choose wisely.

**Helpful hints.** Here are some suggestions for healthy ways to include cheese in your diet.

- ▶ **Strong flavor.** The more flavor a cheese has, the less you need to use. Use small amounts of powerful cheeses like Parmesan, Romano, and blue cheese when possible for a big flavor boost.
- ▶ **Portion sense.** Because of the high saturated fat and calorie content, portion sizes of cheese are small—1 ounce, the equivalent of two dice. Keep that in mind when faced with a cheese platter.
- ▶ **End with it.** To maximize the flavor cheese adds to a meal, try sprinkling it on just before serving instead of mixing it into a dish.
- ▶ **Perfect pairings.** Pair cheese with fiber-rich carbohydrate foods, like fruits and whole grain crackers. You'll get long-lasting satiety from this combination. **EN**

—Heidi McIndoo, MS, RD

## Cheese Nutritional Comparison

✓ = **EN's Picks.** As with all EN comparisons, this is only a sampling of products. Picks contain no more than 5 g sat fat (25% DV) and 230 mg sodium (10% DV).

CHEESE* (1 OZ)	Calories	Total Fat (g)	Sat Fat (g)	Carb (g)	Sodium (mg)	Protein (g)
Apple Smoked Gruyere	90	7	6	1	250	6
Asiago	101	8	5	0	344	7
✓ Babybel, Original	95	8	5	0	230	7
✓ Babybel, Original, Light	68	4	2	0	216	8
✓ Brie	95	8	5	0	178	6
✓ Cabot Cheddar 50% Light	70	4.5	3	<1	170	8
✓ Cabot Cheddar Vermont 75% Reduced Fat	60	2.5	1.5	0	200	9
Cheddar	115	10	6	<1	183	7
Colby	112	9	6	1	171	7
Cotija	104	9	5	1	397	6
Cracker Barrel Extra Sharp White Cheddar 20% Reduced Fat	90	6	4	1	240	7
✓ Edam	101	8	5	0	230	7
Emmental	113	9	6	0	53	9
Feta	75	6	4	1	260	4
✓ Fontina	110	9	5	0	227	7
Ford Farm Smoked Seaside Cheddar	120	10	6	0	200	7
Goat	103	9	6	0	118	6
Gorgonzola	100	9	6	1	390	6
Gouda	101	8	5	1	232	7
✓ Gruyere	117	9	5	0	202	9
Halloumi	70	8	5	0	310	6
Havarti	111	10	7	0	213	6
✓ Jarlsberg	100	8	5	0	130	8
✓ Jarlsberg Lite	70	3.5	2	0	130	9
✓ Monterey Jack	106	9	5	0	170	7
✓ Mozzarella, Fresh	73	6	4	0	112	5
✓ Muenster	104	9	5	0	178	7
Organic Valley Raw Sharp Cheddar	110	9	6	0	170	7
Parmesan	111	7	5	1	390	10
✓ Port Salut	90	8	5	0	170	6
Provolone	100	8	5	1	248	7
Romano	110	8	5	1	406	9
✓ Skinny Cheese Fat Free Garden Vegetable	40	0	0	1	153	8
✓ Skinny Cheese Fat Free Sharp Cheddar	40	0	0	1	153	8
Stilton	116	10	7	0	223	7
✓ Swiss	108	8	5	2	54	8
Trader Joe's Italian Truffle Cheese	110	9	6	0	420	6
✓ Trader Joe's Lite Sharp Celtic Cheddar	70	4	2.5	0	210	8
Trader Joe's Mini Basque	110	10	6	0	200	6
Trader Joe's Parmesan & Gouda	120	9	6	0	230	8

\*Cheese selections include general types of cheese and branded products. Note: oz=ounce, g=gram, mg=milligram, sat fat=saturated fat, carb=carbohydrates, DV=Daily Value, Daily requirement based on 2,000 calorie/day diet. Source: Food Labels and ESHA Food Processor



Photos: Thinkstock



“Food waste represents a loss of about \$240 billion to the American economy.”

—Jonathan Bloom author, “American Wasteland”

# Waste Not

Save money and reduce your environmental footprint by cutting food waste.

Most people assume landfills are stuffed mostly with plastic packaging, spent furniture, and garage sale leftovers, but what is really causing them to burst at the seams are items that could have made up a nutritious salad. Every day a staggering amount of food is wasted in America at the farm, retail, and consumer level. “We are squandering about 40 percent of the available calories in the food supply, which translates into more than a billion pounds of edible food going in the trash each year,” says Jonathan Bloom, a food waste expert and author of *American Wasteland*.

**Ethical, environmental, and economic repercussions.** Up to 15 percent of households in America suffer from food insecurity, so food waste is a lost opportunity to help solve this problem, according to Bloom. “Decomposing food that makes its way into landfills releases methane, which is a significant climate warming gas,” says Dana Gunders, National Resource Defense Council scientist and author of *Waste-Free Kitchen Handbook*. Tossing away food means trashing all the resources, such as water and transportation, that went into producing it and getting it to stores. In the end, food waste represents a loss of about \$240 billion to the American economy, according to Bloom.

Why do we waste food? Bloom blames the sheer volume of food produced in America, which offers a sense of abundance, along with our desire to have food look perfect and homogenous (picture a pile of blemish-free, look-a-like apples at the grocer), and the relative low percentage of income most Americans spend on food compared to many other nations. While food waste is a problem throughout the food chain, more gets disposed of in households than in other sectors, like grocery stores and restaurants.

**Cut your food waste.** Follow these tips to reduce taxing your food budget and Mother Nature.

- ▶ **Be a savvy shopper.** Plan meals, make a shopping list, and stick with it. “Show restraint when grocery shopping by avoiding impulse buys,” says Gunders. She advises not being too ambitious with your meal planning. “As a workweek gets busy the chances of preparing elaborate meals decreases, which encourages food waste when what you bought for a recipe doesn’t get used.”
- ▶ **Embrace ugly ducklings.** Shop at a farmers market and support farmers’ efforts to unload oblong fruits and knobby vegetables that many grocers won’t accept, but are just as tasty and nutritious as their “pretty” counterparts.
- ▶ **Chill factor.** To extend the life of perishable produce, be sure to keep your fridge set between 35° and 37°, and properly store fragile items like herbs, berries and greens.
- ▶ **Frozen assets.** “More people should use their freezer as a means of avoiding food waste,” advises Bloom. Freeze items like milk, bread, vegetables, and prepared dishes if you’re not likely to use them before they go bad.
- ▶ **Cook like a chef.** Most chefs are masters at using all parts of food (see “Odd Bits”). Try recipes that use the whole food, from stem to flower, such as our Sweet and Sour Whole Broccoli Stir Fry.
- ▶ **Label lingo.** Food gets tossed just because consumers are confused about expiration dates. “Sell by” and “best by” dates indicate when peak-quality starts declining, although the food is still fine to eat. “Use by” dates indicate when you should consume the food to avoid food safety concerns.
- ▶ **Scale down.** Ballooning portions not only expand America’s collective girths, but also the size of landfills. “Serve yourself more reasonable portions of food,” says Bloom.
- ▶ **Break it down.** If your city has a composting program, take advantage of it. Or use a compost bin to produce fertilizer for your garden.

—Matthew Kadey, MS, RD

## Odd Bits

- ✓ **Mushroom stems.** Save them in a zip-top bag in your freezer to make a tasty mushroom broth.
- ✓ **Broccoli stalks.** Peel off the tough outer layer and thinly slice the interior for use in stir-fries, scrambled eggs, and pasta dishes.
- ✓ **Beet greens.** Sauté with olive oil and garlic, add to frittatas, or blend into smoothies.
- ✓ **Carrot tops.** Use as you would herbs in tabouleh, bean salads, and chimichurri sauce.
- ✓ **Potato peels.** Mix with oil and roast in the oven at 425° F for 15 minutes until crispy.
- ✓ **Cilantro stems.** Finely chop and add to salad dressings, salsa, and pesto.

## Sweet and Sour Whole Broccoli Stir-Fry



- 1/2 c low-sodium vegetable broth
- 2 Tbsp rice vinegar
- 1 Tbsp tomato paste
- 1 Tbsp low-sodium soy sauce
- 2 tsp honey
- 1 tsp chili sauce
- 2 tsp cornstarch (or arrowroot powder)
- 1 bunch broccoli
- 2 tsp grapeseed, peanut or canola oil
- 1/4 c sliced almonds

1. In a small bowl, whisk together broth, rice vinegar, tomato paste, soy sauce, honey, chili sauce, and cornstarch.
2. Slice broccoli tops into small florets. Peel stalks and slice thinly.
3. Heat oil in a large skillet over medium. Add broccoli stalks and cook 1 minute. Add broccoli florets and cook until tender. Add almonds and broth mixture and cook 1 minute more.

Makes 4 servings

**Nutrition Information Per Serving:** 162 calories, 8 grams (g) fat, 1g saturated fat, 20g carbohydrates, 5g fiber, 9g protein, 229mg sodium.

Recipe by Matthew Kadey, MS, RD

# Some Ovarian Problems Treatable through Diet

*Polycystic ovary syndrome (PCOS) can have a big impact on the life and health of women who have it. But diet changes, like eating less sugar and more omega 3 fatty acids, can reduce symptoms.*



Enjoy anti-inflammatory foods, such as seafood and vegetables.

Up to one in five women of reproductive age suffers from polycystic ovary syndrome (PCOS), a hormone imbalance that can lead to infertility, diabetes, depression, and increased risk for heart problems. PCOS is named after cyst-like follicles that often form on the ovaries of women with this condition, but these are only a symptom of the condition, not the cause.

One hallmark of the syndrome is a decrease in the ability to use insulin efficiently to move glucose out of the bloodstream. This so-called *insulin resistance* can eventually lead to diabetes. “The majority of women with PCOS are insulin resistant, and will experience weight gain in the abdominal area, difficulties losing weight, and intense cravings for carbohydrates,” says Angela Grassi, MS, RDN, LDN founder of the PCOS Nutrition Center and author of *PCOS: The Dietitian’s Guide*. Women with this condition often have trouble getting pregnant. “They also may have other symptoms, like irregular, heavy or absent periods, acne, increased growth of hair on the face and arms, and loss of hair on the head,” says Grassi.



Eating fewer sweets may help decrease PCOS symptoms

the unwanted hormones. Additionally, inflammation, which increases insulin resistance, can lead to weight gain and carb cravings; the added abdominal fat and high intake of sugars and other simple carbohydrates then contributes to the inflammation, creating a “snowball effect” of worsening symptoms.

**Finding answers.** While birth control pills can help with hormone regulation, there is currently no medical therapy that fully reverses the underlying problem or helps all the symptoms of PCOS. The primary treatment for PCOS is diet and lifestyle changes. “Along with exercise, good sleep, and stress management, eating well can improve menstrual function, increase your chances of getting pregnant, and improve cholesterol and blood sugar levels,” says Grassi.

**PCOS and diet.** Losing even five percent of total body weight has been shown to improve PCOS symptoms. Evidence suggests that any diet strategy that reduces caloric intake will help improve weight, increase fertility, and decrease symptoms like insulin resistance...as long as that diet is safe, nutritious, and sustainable for the long term.

Dietary choices can help to break the vicious cycles of PCOS by helping control blood sugar and discourage inflammation. “The optimal diet for PCOS is still unknown,” says Grassi.

“But we do know that women with PCOS who have high levels of insulin can improve levels and lose weight by following a low glycemic index diet,” says Grassi (see “What is the Glycemic Index”). “Additionally, since women with PCOS have higher blood levels of proteins indicating inflammation than women without the condition, I strongly recommend a diet that incorporates anti-inflammatory foods.”

**Lifestyle changes for managing PCOS.** The good news is that just making an effort may make a difference. “While losing even five percent of total body weight can really help, making diet and lifestyle changes can lead to improvement even if you don’t lose any weight,” says Grassi. Here are some ideas for managing PCOS:

- ▶ **Commit to eating less if you have excess weight to lose.** Aiming for 500 fewer calories a day than you usually eat is a healthy goal.
- ▶ **Eat small, frequent meals.** This strategy improves blood sugar control. Aim for a similar number of grams of carbohydrate at every meal.
- ▶ **Enjoy anti-inflammatory foods.** Since oxidative stress leads to inflammation, eat plenty of antioxidant-rich fruits and vegetables. Omega-3 fatty acids are anti-inflammatory and may be found in foods like fish, walnuts, and flax seeds, or omega-3 supplements.
- ▶ **Avoid inflammatory foods.** Minimize saturated and trans fats, and cut back on red meat and full-fat dairy foods.
- ▶ **Cut the sugar.** Sugar can trigger inflammation. Plus, eating fewer refined carbohydrates (like sugars, baked goods, soda, and white bread) improves blood sugar control, which in turn can decrease PCOS symptoms. Get carbs from foods like whole grains, beans, fruits, and vegetables instead.
- ▶ **Get moving.** Activity, from walking to weight lifting, helps control insulin resistance which often comes with PCOS. [EN](#)

—Judy Thalheimer, RD, LDN

**What causes PCOS?** Some researchers talk about vicious cycles in PCOS: hormone imbalance may cause chronic low-grade inflammation, which stimulates the ovaries to produce more of

INFLAMMATORY FOODS	ANTI-INFLAMMATORY FOODS
Refined carbohydrates	Fatty fish
Fried foods	Nuts
Soda	Fruits
Red meat and processed meats	Vegetables (particularly leafy greens and tomatoes)
Shortening and lard	Olive oil

## What is the Glycemic Index?

The glycemic index (GI) measures how much a carbohydrate-containing food raises blood sugar compared to glucose or white bread. A food with a high GI (like white rice, baked Russet potatoes, or pretzels) raises blood sugar more than a food with a low GI (like peanuts, barley, or chickpeas). Fat and fiber tend to lower the GI of a food. As a general rule, the more cooked or processed a carb-containing food, the higher the GI.




## Give Onions a Cry!

**The folklore.** No pantry is complete without onions. Eaten and cultivated since prehistoric times, onions are integral to most every cuisine in the world. In addition to their tear-jerking effect on the eyes and pungency to the palate, onions have a history layered with story. The Egyptians, Romans, and Greeks believed that eating the strong-tasting orbs increased strength and courage. Onions were used medicinally to treat colds, infections, breathing problems, and snakebites, and were even used as a remedy for baldness. They may not do all that, but onions do deliver big flavor in a nutrient-dense package that is certainly worthy of a few tears—of joy.

**The facts.** Depending on variety, onions (*Allium cepa*) vary in color, size, and flavor. Yellow, white, or red bulb onions are classified as spring/summer or fall/winter (also known as storage onions). Spring/summer onions, which include Vidalia, Walla Walla, and Maui Sweet Onion, are mild or sweet tasting, while storage onions, which include Spanish onions, are strongly flavored and have a yellow or white color. Scallions (or green onions) are immature bulb onions harvested before the bulb forms. Onions are nutrient-dense—a one-cup serving packs 20% DV (Daily Value, nutrient needs based on 2,000 calories per day) of cell-protecting vitamin C—and are plump with powerful plant compounds, like quercetin, which promotes a healthy heart and respiratory system, as well as sulfur compounds, which help fight cancer.

**The findings.** The sulfur-containing compounds in these vegetables may help combat each stage of cancer, especially cancers of the gastrointestinal tract (*Cancer Prevention Research* March 2015). Researchers have concluded that high intake of allium vegetables (two or more servings of onions per week) is likely to reduce gastric cancer risk (*Molecular Nutrition and Food Research* 2015). In addition, raw red onion consumption significantly lowered cholesterol in overweight women with polycystic

ovary syndrome (*Journal of Obstetrics and Gynaecology Research*, 2014).

**The finer points.** Select bulb onions that are firm, free of cuts or bruises, and have little or no scent. Keep them in a cool, dark, dry place with ventilation—storing them in plastic reduces shelf life. Refrigerate peeled or cut onions in a sealed container up to seven days. Delightfully versatile, the onion performs as both spice and vegetable, pepping up any dish from guacamole to veggie sautés and whole grain side dishes. Onions are also great on the grill, roasted in the oven, marinated, or caramelized into sweet bliss. 

—Lori Zanteson

### Notable Nutrients: Onions

(1 cup raw, chopped, 160g)

Calories: 64	Folate: 30 mcg (8% DV)
Dietary Fiber: 3 g (11% DV)	Manganese: 0.2 mg (10% DV)
Vitamin C: 12 mg (20% DV)	Potassium: 234 mg (7% DV)
Vitamin B6: 0.2 mg (10% DV)	

Note: g=gram, DV=Daily Value, mg=milligram, mcg=microgram



### Herb Baked Onion Bloom

1 large onion (3 – 3½ inches wide)	½ tsp dried rosemary
1 Tbsp margarine	Salt and pepper, to taste
1 tsp dried thyme or oregano	Parsley, paprika, or dried red pepper flakes (optional)

1. Cut about ½-inch off top of onion; peel onion. Cut onion into 12 to 16 vertical wedges, leaving root base intact.
2. Set bloomed onion on 14 x 10-inch foil piece. Top with margarine, thyme or oregano, rosemary, and salt and pepper, to taste. Wrap foil around seasoned bloom and pinch edges together tightly.
3. Place wrapped onion upright onto a pan. Bake at 425 degrees for 30 minutes, or until tender and cooked but “petals” still have body and stand upright. If desired, sprinkle with parsley, paprika, or dried red pepper.

Makes 1 serving

**Nutrition Information Per Serving:** 75 calories, 4 grams (g) fat, 10 g carbohydrate, 1 g protein, 2 g dietary fiber, 5 milligrams sodium

Recipe adapted courtesy National Onion Association

## Research Roundup

• **Probiotics Relieve Constipation.** A daily probiotic may help to increase gastrointestinal wellbeing among healthy adults who suffer from constipation. A total of 1,248 subjects aged 17-80 years were given either a placebo, 1 billion colony forming units (CFUs) of the probiotic strain BB-12® (*Bifidobacterium animalis subsp. Lactis*), or 10 billion CFUs of BB-12® daily for four weeks. Four weeks of supplementation with BB-12® resulted in higher defecation frequency and greater abdominal comfort compared to those who took the placebo.

*British Journal of Nutrition*, November 2015

• **Omega-3 May Help Depression.** Blood levels of omega-3 fatty acids were inversely associated with depressive symptoms, according to a recent Japanese study. Data from 1,050 Japanese men and 1,070 Japanese women (average age of 60) found that greater levels of the omega-3s EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) were associated with fewer depressive symptoms. EPA and DHA are found in fatty fish.

*British Journal of Nutrition*, November 2015

• **Canned Produce Linked to Better Diets.** People who eat canned fruits and vegetables have better diet quality, greater overall fruit and vegetable consumption, consume more fiber and potassium, and consume less fat and saturated fat compared to children and adults who do not eat canned fruits and vegetables, according to a new study. Researchers analyzed data from 2001 to 2010 of almost 42,000 American adults and children, and found that children who eat canned fruits and vegetables also consume more vitamin A, calcium, and magnesium. Weight, waist circumference, and blood pressure were found to be similar among all individuals independent of their intake of canned fruits and vegetables.

*Journal of the Academy of Nutrition and Dietetics*, November 2015

## In Coming Issues ...

- **Eat the Rainbow**, to gain a diverse range of fruit and vegetable phytochemicals for health protection.
- **Breast Cancer Update.** *EN* fills you in on the latest diet strategies to help fend off breast cancer.
- **Lose the Sweet Tooth.** The latest research suggests keeping sugar intake to a minimum.