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Just In

Fruit Intake Lowers Diabetes Risk and Complications

Higher consumption of fresh fruit was associated with lower risk of type 2 diabetes and reduced occurrence of complications in people with diabetes, according to University of Oxford researchers. Over seven years, of the nearly 500,000 Chinese participants, those who reported the highest consumption of fresh fruit had a 12 percent reduced risk of developing diabetes over five years compared to those who never or rarely consumed fresh fruit. In people with diabetes, higher fruit intake was linked to a lower risk of mortality, about a 17 percent reduced risk over five years, along with 13-28 percent lower risk of diabetes-related complications. 

PLOS, April 2017

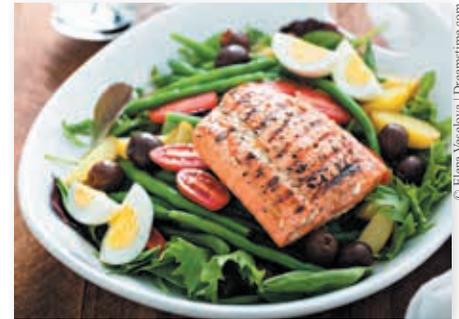
The Disease-Fighting Vitamin D

Boost the “sunshine vitamin” for healthy bones and beyond.

Vitamin D, affectionately known as the “sunshine vitamin,” is not actually a vitamin at all. It is what’s known as a “pro-hormone”—it can be manufactured by the body and, in addition to being a critical factor for bone health, it is involved in cell growth, immune function, and fighting inflammation, just to name a few of its roles.

Vitamin D-efense. While vitamin D is most often thought of in connection with building bones, it has been the focus of countless studies on other roles, such as fighting diabetes, cognitive decline, cancer, multiple sclerosis, and psychosis; and even acting as a probiotic in the intestinal tract. Recently a study in the *Journal of Endocrinology* suggested vitamin D may help manage pain. While several studies have found that higher intakes and blood levels of vitamin D are linked to a lower risk of disease, we don’t know for sure if taking more vitamin D actually prevents disease.

Vitamin D Sources. The body produces vitamin D when skin is exposed to the sun’s UV rays; exposure of bare skin for only 5–10 minutes, 2–3 times per week is enough for the body to produce



Fish and eggs contain naturally-occurring vitamin D.

enough vitamin D. But if sun exposure is infrequent or if sunscreen is used, stores can run low and, because few foods (fish and eggs) naturally contain vitamin D, a supplement may be necessary. Vitamin D is found as either vitamin D2 (ergocalciferol) or D3 (cholecalciferol) in foods and supplements. There is disagreement as to which is better, though a recent study published in *BMC Endocrine Disorders* found that D2 works best for raising blood levels if given daily, while D3 is best given twice a week.

How Much is Enough? The Institute of Medicine recommends adequate vitamin D intake at levels that maintain bone health and normal calcium metabolism in healthy people, which does not take into account the possible roles of vitamin D in preventing or treating other health conditions. Current Recommended Dietary Intakes (RDIs) for vitamin D are 600 International Units (IUs) a day for adults up to age 70, and 800 IUs for adults above 70. However, some experts recommend 1,000 IUs a day to reduce the risk of disease.

How much you need is complicated by skin color (darker skin reduces the skin’s ability to produce vitamin D), age (bioavailability declines with age), conditions that interfere with absorption (i.e., inflammatory bowel disease or previous gastric bypass surgery), and medications (some seizure medications, steroids, calcium channel blockers, and some cholesterol-lowering drugs can interfere with absorption). 

—Densie Webb, PhD, RD

Vitamin D Food Sources

FOOD	SERVING	VITAMIN D (IUs)
Salmon, Sockeye, canned, drained solids*	3 oz	730
Cod liver oil*	1 tsp	450
Mushrooms, white, exposed to UV light**	½ c	366
Silk soy milk, vanilla	1 c	119
Orange juice, fortified with calcium & D	1 c	105
Milk, whole, skim or low-fat	1 c	100
Cereal, General Mills Total Raisin Bran	1 c	100
Yogurt with added vitamin D	6 oz	88
Egg, large*	1	44

Note: oz=ounce, tsp=teaspoon, c=cup; Source: USDA Nutrient Database
*Naturally occurring sources of vitamin D; the rest are fortified with the vitamin, except for **mushrooms exposed to UV light, which contain vitamin D.



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Ask the EN Experts

Organics on the Upswing

If you have organic products in your refrigerator or pantry, you are far from alone. An April 2017 Nielsen survey found that 82 percent of U.S. households have organic food in their kitchens, representing a 3.4 percent increase from the last survey in 2015. The total amount of organic food sales for 2015 was \$43.3 billion, 11 percent higher than the year before, outperforming the overall food market, which grew by only 3 percent. Among organic categories, fresh beverages grew the fastest. This rise is even more significant when you look at longer-term numbers; organic food sales have grown by 72 percent since 2008. In fact, sales are growing at such a clip that

What Does the Organic Label Mean?

USDA certified organic foods are grown and processed according to federal guidelines addressing soil quality, animal raising practices, pest and weed control, and use of additives. Organic producers rely on natural substances and physical, mechanical, or biologically based farming methods as much as possible. Organic certification requires that farmers and handlers get inspected every year. For more information, visit USDA.gov.

Source: USDA

farmers are having a hard time keeping up with demand. As people are increasingly interested in learning more about where their food comes from, we are seeing consumer interest in organics rise in response. EN

— Sharon Palmer, Editor, EN

Akaline Water and Guarana Supplements

Q *Is alkaline water good for you?*

A Health advocates recommend drinking water as the best way to keep our bodies hydrated. At one time, turning on the tap was the way to satisfy a thirst, but nowadays there are scores of bottled waters for sale, many promising more than just hydration. Alkaline water is one among the many that line supermarket shelves.

The term “alkaline” is a measure of the pH of the water. The pH scale measures if a substance is acidic, basic (or alkaline) or neutral. Most water, bottled and tap, is close to neutral with a pH of 7. Alkaline waters have a pH above 8. While some spring waters are slightly alkaline, most of the bottled waters sold as “alkaline water” are produced through a process called ionization. The promised health benefits for alkaline waters include boosting metabolism, improving the absorption of nutrients, helping the body to “starve” cancer cells, and acting as an antioxidant. There is scant scientific support for any of these benefits of alkaline water. And people with poor kidney function should avoid alkaline water because the dissolved minerals in the water could harm the kidneys. EN

— Sharon Salomon, MS, RD



The South American plant guarana is rich in caffeine.

Q *Should I consume guarana ingredients or supplements?*

A Guarana is a plant native to South America, named for the Guarani Amazonian tribe who originally used the seeds in a bitter drink similar to coffee. Guarana was used as a stimulant by natives during times of fatigue and fasting. But recently it’s been added to drinks or used as a supplement to provide purported benefits.

Researchers once believed the active ingredient of guarana was a chemical specific to the plant, but later discovered that it was actually caffeine, abundant in guarana. Caffeine has been found to have some benefits for mental alertness and physical performance. People take guarana with hopes that it will help increase performance and energy, improve mood, reduce anxiety, and promote weight loss. However, there is insufficient research to support these claims specific to guarana.

The potential side effects of guarana are similar to those of caffeine, including sleep problems, anxiety, restlessness, upset stomach, and quickened heartbeat. Long-term use of caffeine may result in tolerance and psychological dependence, and abrupt discontinuation can result in physical withdrawal symptoms including headache, irritation, nervousness, anxiety, and dizziness. EN

— Kaley Todd, MS, RDN

Write to us if you have a question. We'll answer those of most interest to our readers. We regret, however, that we cannot personally respond. Send to: *Environmental Nutrition*, P.O. Box 5656, Norwalk, CT 06856-5656. Phone: 800-829 5384 Fax: 203-857-3103 e-mail: customer_service@belvoir.com www.environmentalnutrition.com, (click on “Contact Us”)

The Beet Goes On

People have been eating beetroot for its health properties since the Middle Ages. In modern times, however, it's the liquid version that's making waves. Scientific studies on beetroot juice claim the elixir can lower blood pressure, increase blood flow, and improve exercise performance. As a result, the ruby red beverage has become a favorite among athletes, but does it deliver what it promises?

Beetroot Basics. Also known as the red beet, table beet or garden beet, beet-roots are quite unlike their cousin the sugar beet, which is rarely eaten whole. Beetroots' unique benefits are mainly thanks to an abundance of dietary nitrate; when converted to nitric oxide in the body, it helps relax blood vessels, increase blood flow, and promote oxygen uptake by muscle. Beetroots also contain betalains (which give beets their red color), flavonoids, and phenolic compounds, which act as anti-inflammatory and antioxidant agents. Several studies show regular intake of beetroot juice lowers blood pressure in both normotensive and hypertensive adults.



Beetroots are rich in nitrates, which may boost athletic performance.

Can Beetroot Boost Performance? In a 2015 study, 14 healthy males drank a shot of beetroot juice for 15 days. Researchers measured blood pressure, oxygen uptake, and cardiac output during rest and intense exercise and compared it to those who drank a placebo. Those taking beetroot juice had lower blood pressure and more dilated blood vessels, and were able to work longer. While other research has also linked beetroot juice with increased cardiorespiratory endurance in athletes and improved performance, some studies have shown no effect on performance at all. Scientists think age, diet, physiology, training status, type of exercise, as well as dose and duration of dose may all play a role in beetroot juice efficacy.

Other Benefits. Most promising may be how beetroot juice affects people with heart disease and the elderly. One study found a daily dose of beetroot juice (about 2½ ounces) significantly improved endurance and blood pressure in elderly patients with heart failure. Nitrates' ability to increase blood flow has implications for preserving brain health too. Older adults consuming beetroot juice prior to moderate exercise were found to have "younger" brains than those who did not drink any beetroot juice.

How Much is Enough? In studies, beetroot juice intake ranged from 2-3 ounces to as much as 2 cups daily. Timing also makes a difference, as juice was generally consumed at least 1½ hours before physical activity. While there is no real downside to drinking beetroot juice, except for turning your urine and stool a reddish color, it is important to check with your physician before making any changes to your diet, particularly since it can interact with some medications. And, remember, it's not just the juice that has effects, adding more beets in the form of vegetables can also help. 🥕

—Diane Welland, MS, RD

Understanding Binge Eating

You might have heard of eating disorders like anorexia nervosa (characterized by weight loss) and bulimia nervosa (binge eating followed by purging), but you may not be aware that binge eating is classified as another type of eating disorder, which can be serious and life threatening, though treatable.

What Is It? Recently classified by psychologists as a distinct eating disorder, binge eating disorder (BED) is more common than anorexia and bulimia combined. BED is characterized solely by binge eating patterns—recurrent episodes of consuming large amounts of food in short periods of time—without the purging components. It can be a severe disorder, often accompanied with feelings of shame and loss of control.

What Causes It? Eating disorders, such as BED, affect many types of people and are

often a combination of genetic, developmental, social, cultural, and psychological factors. BED often leads to unwanted weight gain, which reinforces further compulsive eating and negative feelings.

What to Do? Most do not realize they have BED, and even if they do, they may be apprehensive about getting help. However, treatment options do exist. The new classification of BED in the latest revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM) means that some

insurance companies will cover eating disorder treatment with the DSM diagnosis. The most successful treatments require support, understanding, and empathetic relationships from the multidisciplinary team that works with eating disorder patients. Psychological approaches that address underlying issues around food have also been found to be helpful. If you think you or someone you know may have BED symptoms, don't hesitate to speak with your healthcare provider. 🥗

—Matt Ruscigno, MPH, RD

Defining Characteristics of BED

How do you know if you have binge eating disorder? Here are some of the classic signs:

- Eating, in a short period of time, an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances.
- Eating until you are uncomfortably full.
- Feeling out of control over eating during the episode, like you cannot stop or control what or how much you are eating.
- Eating large amounts of food when you are not physically hungry.
- Eating rapidly.
- Eating alone because of feeling embarrassed by how much you are eating.
- Feeling disgusted, depressed, or guilty after eating.
- Binge eating episodes happen, on average, at least once a week for three months.

8 Tips to Master Portion Control

These science-based tips can help you gain control over portion size.

From restaurants to packaged foods to home cooking, portion sizes have ballooned in past decades. Many health experts link the rise in obesity rates with our tendency towards portion distortion—a mismatch between our portion sizes and energy needs. Research by the University of Cambridge found that less availability of super-sized portions alone could reduce Americans' caloric intake by 29 percent.

"Instead of focusing on complicated diets and deprivation, simply eating less through better portion control is one of the best strategies people can take towards dropping pounds," says Lisa R. Young, PhD, RD, adjunct nutrition professor at New York University and author of *The Portion Teller Plan*.

The portions we eat are strongly influenced by our environment. So, make these tweaks to your eating habits to reclaim portion control.

1 Pay Attention. Thumbing through your smartphone or watching your favorite TV show while noshing is not the innocent habit you think it is. A 2017 study in the *Journal of the Academy of Nutrition and Dietetics* found that adults who never watch TV or videos during meals were 37 percent less likely to be obese than their peers who always ate in front of a screen. "Anytime your eyes and brain are distracted when food is sitting in front of you, you're more likely to munch mindlessly and eat more than you need," says Young.

2 Keep your Distance. At your next meal, try this suggestion from Cornell University: Keep serving dishes away from the dining table. The scientists found that women and men ate on average 20 and 29 percent fewer calories, respectively, when food was served from the countertop rather than from their table. It's a case of "out of sight, out of mind."

3 Downsize your Dinnerware. The size of plates, bowls and glasses in American households has increased over the decades, which is a problem for waistlines, considering we eat 92 percent of the food we serve up. People served themselves

77 percent more pasta when provided larger bowls compared to using a medium-sized bowl, per a study in the *Journal of Nutrition Education and Behavior*. Outfit your kitchen with smaller plates (8- or 9-inch instead of the typical 10- to 12-inch size), bowls, and drinking vessels to make small portions seem more substantial.

4 Scale Back. You can't trim your portions until you come to grips with how much you're *actually* eating. Using a digital food scale can help you get a better sense of what the recommended 3 ounces of chicken or 1 ounce of cheese looks like. Measuring cups and spoons for items like granola and olive oil can also help keep portions in line.

5 Play with Knives. To cut calories from your diet cut up your food. Studies show that slicing up items such as pizza and bagels into several smaller pieces decreases food consumption and calorie intake. We tend to think of one piece of food, like a steak or muffin, as an appropriate serving size regardless of its size. "Slicing foods into several units can trick your brain into thinking you're eating more than you actually are so you're more likely to be satisfied with less," Young adds.



Match portions with your energy needs for a healthy weight.

6 Lighten Up. Save the mood lighting for date night. Research from Cornell University found that subjects who dined in a dark room consumed 36 percent more food and were less accurate in estimating how much they consumed than those who ate in a bright room. A bright space can boost alertness to encourage mindful eating, while dimmer lighting may loosen eating inhibitions and mess with satiety cues.

7 Slow Down. Eating at a snail's pace could bring about better portion control. According to a Texas Christian University study, people who ate a meal in 22 minutes consumed 88 fewer calories and felt less hungry than those who cleaned their plates in nine minutes. "Pacing yourself allows time for your body to register satiety signals and prevents calories from adding up without realizing it," says Young. Put utensils down between bites, chew food more thoroughly, engage in conversation, drink water with meals, and even try chopsticks to keep you at the table longer.

8 Watch Out for "Health Halos." Don't give foods like avocado, quinoa, and smoothies a "free pass." Research shows that edibles portrayed as "healthy" can tempt you to let your guard down and overeat. It may be that people think of healthy foods as less filling or lower in calories, so decide more is needed to quell hunger. [EN](#)

—Matthew Kadey, MS, RD

Size It Up

Use this guide as a simple tool to help you better visualize healthy portion sizes.

PORTION OF FOOD	APPROXIMATE SIZE
3 oz cooked meat or tofu	Deck of cards
1 oz hard cheese	Three dice
1 c cooked grains	Baseball
1 Tbsp salad dressing	Poker chip
1 slice of bread	DVD disc
1 baked potato	Computer mouse
½ c cooked pasta	Tennis ball
½ c fruit	Light bulb
1 tsp butter	Tip of thumb

Note: oz=ounce, c=cup, Tbsp=tablespoon, tsp=teaspoon



Shopper's Guide

Is Cereal a Healthy Choice?



Look for more whole grains and less sugar in cereals marketed as "healthy".

Breakfast is often called the most important meal of the day, because it's the first opportunity to fuel your body for the day ahead after a long night's fast. It's also the first chance to begin meeting your daily nutrient needs. An easy-to-prepare, go-to breakfast increases the likelihood that you'll find time to fuel your body in the morning. So, ready-to-eat breakfast cereals are an ideal option for healthy, convenient breakfasts. And food manufacturers have taken it up a notch in recent years by developing cereals marketed as "healthy," which are packed with whole grains, nuts, seeds, and fruits. But how do you know which are the best picks?

There are a few important key factors to be aware of when making your cereal selection. Grain is the main ingredient in all cereals, and choosing *whole grains* will maximize your fiber intake. Another common ingredient in many cereals is added sugar. Compare your Nutrition Facts labels to identify those with the least amount of added sugars. Remember, four grams of sugar is equal to one teaspoon. A sprinkle of fresh or dried fruit is a healthier way to sweeten up your morning meal.

Helpful Hints. To start your day in a healthy way, check out these tips before filling your cereal bowl with so-called "healthy" cereals.

- ▶ **Round It Out.** To turn your whole-grain-based cereal into a well-rounded meal, serve it with reduced-fat milk or a calcium-fortified milk alternative. Topping it with fruit and a sprinkle of nuts will also boost your nutrient intake.
- ▶ **Whole Grain First.** Ready-to-eat cereals offer a great chance to boost your whole grain intake. Scan the ingredients lists on cereal boxes to find those listing a whole grain first, including whole wheat, rolled oats, brown rice, quinoa, millet, amaranth, and sorghum.
- ▶ **Measure It Up.** Serving size varies widely between cereals—some as low as one-half cup and others as high as one and one-fourth cup. Keep in mind that if you're eating more than one serving, you need to recalculate the nutrient content. **EN**

—Heidi McIndoo, MS, RD

"Healthy" Breakfast Cereals Nutritional Comparison

✓ = EN's Picks. As with all EN comparisons, this is only a sampling of products. Picks list their first ingredient as a whole grain and contain at least 3 g fiber (11% DV) and no more than 6 g sugar*.

"HEALTHY" BREAKFAST CEREALS**	Serving Size c (g)	Calories	Total Fat (g)	Sat Fat (g)	Carbs (g)	Sodium (mg)	Fiber (g)	Sugar* (g)	Protein (g)
✓ 365 Organic Bran Flakes	¾ (30)	100	0.5	0	24	95	5	2	4
365 Organic Brown Rice Crisps	1 (30)	110	1	0	25	85	1	1	2
365 Protein & Fiber Flakes & Clusters	⅔ (55)	220	6	0.5	35	170	5	12	11
✓ Arrowhead Mills Organic Amaranth Flakes	1 (34)	140	2	0	27	5	3	4	4
✓ Back to the Roots Organic Stoneground Flakes California Whole Wheat	1 (45)	160	0.5	0	36	100	5	5	6
✓ Back to the Roots Organic Stoneground Flakes Purple Corn	1 (45)	160	2	0	34	100	3	5	4
Cascadian Farm Organic Hearty Morning Fiber	¾ (48)	170	2.5	0.5	38	135	8	8	4
Cheerios & Ancient Grains	¾ (28)	110	2	0.5	22	105	2	5	3
Cheerios Protein Cinnamon Almond	1¼ (55)	220	4.5	0.5	40	220	3	16	7
✓ Engine 2 Rip's Big Bowl Banana Walnut	½ (55)	210	3.5	0	39	55	6	4	6
Erewhon Harvest Medley	1 (30)	110	1	0	24	65	2	0	3
✓ Fiber One	½ (30)	60	1	0	25	110	14	0	2
Food For Life Ezekiel 4:9 Sprouted Grain Crunchy Cereal Cinnamon Raisin	½ (57)	190	1	0	41	160	5	8	7
✓ Food for Life Ezekiel 4:9 Sprouted Grain Crunchy Cereal Golden Flax	½ (57)	180	2.5	0	37	190	6	0	8
✓ Grape Nuts Flakes	¾ (29)	110	1	0	24	135	3	4	3
✓ Kashi 7 Whole Grain Nuggets	½ (58)	210	1.5	0	46	220	6	3	8
Kashi Dark Cocoa Karma	31 biscuits (55)	180	1	0	42	0	6	9	8
Kashi Go Lean Crunch Cereal	¾ (53)	190	3	0	38	100	8	13	9
Kashi Go Lean Original Cereal	1¼ (58)	180	2	0	40	115	13	8	12
Kashi Go Lean Vanilla Clusters Plant Powered Cereal	1 (55)	230	6	1	37	85	6	9	9
Kashi Organic Sprouted Grains	1½ (56)	190	1	0	45	110	6	9	6
Kellogg's SmartStart	1 (50)	190	1	0	43	200	3	14	4
Kellogg's Special K Fruit & Yogurt	¾ (32)	120	1	0	27	140	3	10	2
Kellogg's Special K Nourish Apple Raspberry Almond	1 (51)	190	2.5	0	41	170	5	10	5
Kellogg's Special K Protein	¾ (32)	120	1	0	19	190	3	7	10
Nature Valley Baked Oat Bites	¾ (50)	210	6	2.5	34	160	3	13	7
✓ Nature's Path Flax Plus, Cinnamon	¾ (30)	120	1	0	24	140	4	5	3
Nature's Path Kamut Puffs	1 (16)	50	0	0	11	0	2	0	2
Nature's Path Mesa Sunrise with Raisins	1 (55)	210	1	0	47	200	2	12	3
✓ Nature's Path Mesa Sunrise	¾ (30)	120	1	0	24	125	3	4	3
Nature's Path Smart Bran	½ (30)	80	1	0	24	130	13	6	3
One Degree Brown Rice Crisps	⅔ (30)	110	1	0	23	115	1	1	2
Post Great Grains Blueberry Morning	1¼ (55)	220	3	0	44	190	3	16	4
Post Great Grains Crunchy Pecan	¾ (52)	210	6	0.5	38	150	5	8	5
Quaker Real Medleys Cherry Almond Pecan Multigrain	¾ (56)	240	7	1	41	40	3	15	5
✓ Trader Joe's Bran Flakes	¾ (30)	100	0.5	0	24	220	5	6	3
Trader Joe's Organic Honey Crunch 'n Oats	¾ (30)	120	1	0	25	135	2	6	2
Trader Joe's Raisin Bran	1 (55)	170	1	0	44	120	8	16	4
Trader Joe's Toasted Oatmeal Flakes	¾ (30)	110	1	0	23	19	3	7	3
✓ Uncle Sam Original Wheat Berry Flakes	¾ (55)	210	6	0	37	140	10	<1	9

Note: c=cup, g=gram, mg=milligram, sat fat=saturated fat, carb=carbohydrates, DV=Daily Value, Daily requirement based on 2,000 calorie/day diet. Source: product labels and manufacturer website. *Sugar grams listed on label may include naturally-occurring sugars. **Based on serving size suggested on product label.

Eating for Kidney Health

Smart diet choices can promote good kidney health and help you avoid debilitating kidney disease later in life.

Nearly one in seven American adults has chronic kidney disease (CKD), and millions more are at risk. “The incidence of CKD in the U.S. is definitely increasing,” says Michael Conrad, MD, senior member of the Center for Kidney Care in New Jersey, “and since the major risk factors for CKD—diabetes, high blood pressure and obesity—are on the rise, it looks like the CKD numbers are going to keep climbing.”

The kidneys have a lot of important jobs in the body. They remove waste and extra fluid from the body, make an active form of vitamin D to support bone health, regulate the production of red blood cells, control pH levels, and release hormones that regulate blood pressure. The label *chronic kidney disease* includes any condition that damages the kidneys and decreases their ability to perform these tasks.

“Most of the people I see with kidney disease have a history of uncontrolled diabetes or high blood pressure,” says Kristen F. Gradney, MHA, RDN, LDN, a spokesperson for the Academy of Nutrition and Dietetics who works with kidney disease patients. “Getting those chronic diseases under control is an important step to avoiding kidney problems.” And, since obesity is linked to both diabetes and high blood pressure, excess body weight can be considered the number one preventable risk factor for developing kidney disease.

Since these major CKD risk factors are all greatly influenced by dietary choices, researchers have begun to take a closer look at diet as a means of preventing kidney disease. “While in the past research was focused on how best to treat CKD, in recent years there has been greater interest in preventing CKD in the first place, and in the role that diet and dietary pattern can play,” says Deidra C. Crews, MD, ScM, FASN, FACP, Associate Professor of Medicine, Division of Nephrology at Johns Hopkins University School of Medicine.

Here’s what the latest research says about diet and kidney disease prevention:

DASH to Fight CKD. The Dietary Approaches to Stop Hypertension diet (DASH) was originally developed to lower high blood pressure. Recent research has shown that people who eat a DASH-style diet are less likely to develop kidney disease. DASH limits sodium to 1,500-2,300 milligrams a day; emphasizes vegetables, fruits and whole grains; includes fat-free or low-fat dairy products, fish, poultry, beans, nuts and

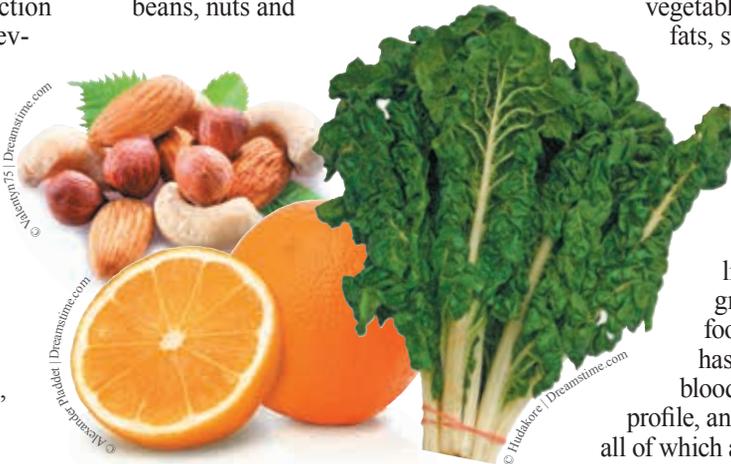
Resources for A Healthy-Kidney Lifestyle

These reliable sources provide additional information on diet and lifestyle patterns that support good kidney health.

- ▶ **USDA offers advice and tools for healthy eating and weight loss:** <https://www.choosemyplate.gov>
- ▶ **The National Heart Lung and Blood Institute provides DASH diet information:** <https://www.nhlbi.nih.gov/health/health-topics/topics/dash>
- ▶ **Oldways provides Mediterranean diet information:** <https://oldwayspt.org/traditional-diets/mediterranean-diet>
- ▶ **The American Diabetes Association offers risk assessment and lifestyle advice:** <http://www.diabetes.org>

vegetable oils; and limits saturated fats, sugar-sweetened beverages and sweets.

Mediterranean-Style Eating. A diet pattern based on foods common to the Mediterranean region, like vegetables, fruits, whole grains, nuts and seeds, sea-food and extra virgin olive oil, has been associated with lower blood pressure, improved lipid profile, and decreased inflammation—all of which are good for kidney health.



Include more nuts, citrus, and leafy greens in your diet pattern to protect kidney health.

Eat to Promote Good Kidney Health

An eating pattern that emphasizes some foods over others can reduce your risk of developing chronic kidney disease.

EAT MORE...	AND LESS...
<ul style="list-style-type: none"> • Fruits (top choices: oranges and raisins) • Vegetables (top choices: dark leafy greens and celery) • Whole grains • Fish • Beans • Nuts and seeds • Vegetable oils (to replace animal fats) 	<ul style="list-style-type: none"> • Animal-based proteins (including cheeses) • Processed meats • Saturated fats • Sugar-sweetened beverages • Added sugars: limit to 6 tsp (20 g) for women and children and 9 tsp (36 g) for men per day • Sodium: limit to 1,500-2,300 mg/day

Note: tsp=teaspoon, g=gram, mg=milligram

Lowering Acid Load. The kidneys are responsible for maintaining acid-base balance in the body. Too much acid in the blood makes the kidneys work harder, potentially wearing them out over time. While it seems logical that eating acidic foods would increase the acid load on the kidneys, the pH of a food actually has nothing to do with whether it makes your blood more acidic. For example, once they are digested, acidic citrus fruits like oranges and lemons actually *decrease* acid load in the bloodstream. In fact, plant foods tend to lower acid load, while animal proteins like meats and cheeses raise acid load. Both the DASH and Mediterranean dietary patterns have a lower dietary acid load than the traditional Western diet, which may be one of the reasons why they are associated with lower risk of CKD. 

—Judith C. Thalheimer, RD, LDN

How and When to Do a Multivitamin

EN breaks down the latest science on multivitamins, and gives advice on how to choose the right one.

More than one in three Americans take a multivitamin supplement, according to the National Institutes of Health, with most multivitamin users citing improved health or prevention of chronic disease as their main reasons. However, in 2014, the U.S. Preventive Services Task Force said the evidence didn't support taking—or avoiding—multivitamins.

One problem is that there's no standardized definition of a multivitamin. Multivitamins may have as few as two micronutrients (vitamins and minerals), and the amounts of each may be minute or way too much. Many recent studies using 10 or more vitamins and/or minerals have shown mild to moderate benefits for reducing risk of chronic disease. What might this mean for you?

The State of the Science. The long-running Physicians Health Study (PHS) randomly assigned about 14,600 male U.S. physicians age 50 or older to take either a Centrum Silver, which contains 30 micronutrients, or a placebo daily for 12 years. Multivitamin use didn't reduce risk of cardiovascular disease or improve cognitive health, but it did reduce cancer risk.

Howard Sesso ScD, MPH, associate professor of medicine at Harvard Medical School and director of nutrition research in the Division of Preventive Medicine at Brigham and Women's Hospital in Boston, points out that the PHS, the only large-scale randomized trial in men, "showed a significant eight percent reduction in cancer and nine percent reduction in cataracts, but clinical trial data in women are lacking."

To clarify the potential health benefits of multivitamins in women as well as men, the COcoa Supplement and Multivitamin Outcomes Study (COSMOS), which Sesso is co-leading, will randomly assign 18,000 women age 65 or older and men aged 60 or older to receive Centrum Silver or a placebo for four years. "COSMOS represents



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Use our guide *How to Choose a Multivitamin to help understand multi labels.*

an important opportunity to evaluate whether long-term multivitamin use may reduce cancer risk," Sesso says of the study, which will also look at effects on cardiovascular disease risk. "It carries potentially important public health implications."

Covering Nutrient Shortfalls. Food is the best source of micronutrients, and most multivitamin users already eat a balanced, nutrient-rich diet. However, the Dietary Guidelines for Americans acknowledge that many people have diets that fall short on essential micronutrients, and a multivitamin can fill in the blanks. Other people may have specific nutrient needs that are difficult to meet even with a nutritious diet. For example:

- ▶ Women who are pregnant or might become pregnant and have increased need for folic acid.
- ▶ Adults over 50 who have trouble absorbing vitamin B-12.
- ▶ Premenopausal women who struggle with iron-deficiency anemia.
- ▶ Individuals who don't produce enough vitamin D from the sun.

Choosing a supplement tailored to your age, gender, and other characteristics, such as pregnancy, can help you get the right amount of key micronutrients, although most multis don't contain enough of those we may need a lot of, including calcium, magnesium, and vitamin D (some individuals may need additional supplements of these nutrients). They also don't contain beneficial food components, like omega-3 fatty acids and phytonutrients (plant compounds with benefits). Make the most of your multi by taking it with a fat-containing meal for the best absorption—especially of the fat-soluble vitamins A, D, E and K—and the least stomach irritation. [EN](#)

—Carrie Dennett, MPH, RDN

How to Choose a Multivitamin

The Daily Value (DV) is the amount of a nutrient you need each day from food and supplements combined, but not all DVs reflect current science. Based on DVs, updated recommendations from the Institute of Medicine, and current multivitamin formulations, here's what healthy adults should look for on your multi label when shopping.

NUTRIENTS	HOW MUCH
Vitamin A	No more than 5,000 IUs retinol + beta-carotene
Vitamin C	60-1,000 mg*
Vitamin D	400 IU or more
Vitamin E	30-100 IU
Vitamin K	10-120 mcg
Vitamin B1 (thiamin)	1.5 mg or more*
Vitamin B2 (riboflavin)	1.7 mg or more*
Vitamin B3 (niacin)	16-35 mg
Vitamin B6	2-100 mg
Folic acid	400 mcg
Vitamin B12	2.4-6 mcg (supplement after age 50)
Calcium	Don't look to a multi to meet your needs**
Iron	Up to 10 mg (18 mg for premenopausal women)
Magnesium	50-350 mg
Zinc	8-30 mg
Copper	0.5-10 mg
Selenium	70-100 mcg
Chromium	35-120 mcg

Note: IU=International Unit, mg=milligram, mcg=microgram

When a range is listed, don't exceed the upper limit.

*Many multis contain high doses of these, which is not a risk because they're water soluble. **Adults need 1,000-1,200 from food and supplements, but most multis don't contain much.

- ▶ **Nutrients You Don't Need.** You don't need the essential micronutrients biotin (B5), chloride, iodine, manganese, molybdenum, pantothenic acid (B7) and phosphorous in your multivitamin, or the non-essential boron, nickel, silicon, tin and vanadium. There's no evidence that we need more than we get from food, according to Center for Science in the Public Interest. Also, we get more benefit from the potassium found in food than the form found in supplements.
- ▶ **Multi Additives.** Avoid ingredients like hydrogenated oils, artificial colors, titanium dioxide, talc, and silica that may be added to your multivitamin. If you are vegetarian, you'll want to avoid gelatin, commonly used to coat vitamin capsules, since it's made from animals. If you are concerned about GMOs, look for supplements labeled GMO-free.

Millet, No 'Run of the Mill' Grain

The Folklore. What is millet? It may not be in most kitchens, but the popularity of this grain is gaining traction. First cultivated about 10,000 years ago in Asia and Africa, millet became a food staple around the world. The Bible refers to it in bread making, the Romans ate it as porridge, and it was the prevalent grain in China before rice. Many cuisines include millet, such as flatbreads in India (*roti* and *bhakri*), porridge in China and Russia, and even beer in parts of Africa. Packed with nutrients, this quick-cooking grain is forging its way onto the American plate.

The Facts. Millet is the generic name for over 6,000 species of grasses, but mostly refers to those of the *Poaceae* family, which are small seed grasses. Foxtail, finger, koda, and pearl (*Pennisetum glaucum*) are among the most important species of millet, which can be white, gray, yellow, or red. Millet is a tiny seed and a common ingredient in bird and animal feed. In terms of nutrients, millet is hardly for the birds. A cup of cooked millet contains 12% DV (Daily Value, based on 2,000 calories/day) each of protein and the B vitamins thiamin and niacin.

The Findings. Millet is known to be rich in polyphenols, powerful health-promoting plant compounds. Kodo millet, in particular, was shown to have high levels of ferulic acid and cinnamic acid, antioxidants with antimicrobial action against harmful bacteria (*Food Chemistry*, 2017). Millet also shows potential for managing type 2 diabetes and its complications, including reducing fasting blood glucose, insulin, total cholesterol, LDL (bad) cholesterol, and triglyceride levels (*Frontiers in Plant Science*, 2016). Replacing a rice-based breakfast item with a millet-based item lowered post-meal blood glucose levels in patients with type 2 diabetes, according to one study (*The Indian Journal of Medical Research*, 2016).

The Finer Points. Readily available in health food and specialty markets and, increasingly, in mainstream grocery stores, millet is mainly sold hulled, as a whole grain, and as flour. Whether



Millet is packed with protein and B vitamins.

packaged or in bulk containers, be sure it's free of moisture. Sealed in an airtight container, it will keep in a cool, dark, dry place for several months. Prepare this versatile grain as you would rice and serve it with vegetables as a savory side dish, as breakfast porridge with fruit and nuts, or baked into bread or muffins. Toasting it first enhances millet's nutty flavor. [E!](#)

—Lori Zanteson

Notable Nutrients: Millet

1 c (174 g) cooked

Calories: 207	Phosphorus: 174 mg (17% DV)
Protein: 6 g (12% DV)	Zinc: 2 mg (11% DV)
Thiamin: 0.2 mg (12% DV)	Copper: 0.3 mg (14% DV)
Niacin: 2 mg (12% DV)	Manganese: 0.5 mg (24% DV)
Magnesium: 77 mg (19% DV)	

Note: c=cup, g=gram, mg=milligram, DV=Daily Value, based on 2,000 calories/day

Millet With Zucchini And Chickpeas

3 Tbsp extra-virgin olive oil, divided

2 medium zucchini, diced

Salt and pepper (to taste)

1 large yellow onion, diced

4 cloves garlic, minced

2 c millet

3 c low-sodium vegetable broth

3 c water

1 tsp curry powder

1 15-oz can chickpeas, no salt added, rinsed and drained

¾ c golden raisins



1. In a medium pot, heat 1 Tbsp olive oil over medium heat. Add zucchini, salt and pepper and sauté for 4-5 minutes, until crisp-tender. Remove zucchini from pot and set aside.
2. To the same pot, add 2 Tbsp olive oil, onions and garlic and sauté for 4-5 minutes, until soft.
3. Add millet and toast for 2-3 minutes, stirring.
4. Add vegetable broth, water, and curry powder. Cover and bring to a boil, then simmer over low for 15-20 minutes. Remove from heat, sit for 5 minutes, and fluff with a fork.
5. Add zucchini, chickpeas, and raisins.

Makes 8 servings

Nutrition Information Per Serving: 370 calories, 9 grams (g) fat, 63 g carbohydrate, 10 g protein, 9 g dietary fiber, 320 milligrams sodium

Recipe adapted courtesy Oldways, oldwayspt.org

• Gluten-Free Reduces Nutrients.

Gluten-free diets may result in low consumption of whole grains and their beneficial nutrients for people who don't have celiac disease, so they should not be encouraged, researchers say. People with celiac can reduce risk of heart disease by avoiding gluten, but the study of more than 110,000 men and women between 1986 and 2010 with a 26-year follow-up found no association between gluten intake and risk of coronary heart disease. The study showed that participants avoiding gluten may also be avoiding whole grains, known to have heart-healthy benefits.

(*The BMJ*, May 2017)

• **Eating at Home is Healthier.** Meals prepared at home are associated with better diet quality and lower cost compared to eating out, research shows. Based on the U.S. Department of Agriculture's Healthy Eating Index, the diets of over 400 adults were rated. Households who regularly ate home-cooked meals had the highest scores, meaning the healthiest diets. Those who cooked at home six times per week scored higher than those who did so three times per week. Those who ate at home also spent significantly less money per person compared to those who frequently ate out.

(*American Journal of Preventive Medicine*, May 2017)

• Tea Linked to Stronger Bones.

Drinking tea is associated with increased bone mineral density (BMD), an indicator of bone strength and reduced risk of osteoporosis, according to Chinese researchers. The meta-analysis of 16 studies, with data from over 138,000 people, showed an increase in BMD, but did not find significant association with bone fracture. Tea leaves contain important plant compounds, such as EGCG (epigallocatechin gallate), which play a powerful role in bone health.

(*Nutrition Research*, June 2017)

In Coming Issues...

- **Whole Foods Explored.** *EN* investigates the meaning of whole foods.
- **The Best in Breakfast Bars.** We compare the latest bars to bring you the best.
- **Is Cheese Healthy?** Our experts dig into the research on this beloved food.