

# Food to Fight Wildfires

## Nutrition Can Help Protect Your Body When Wildfire Strikes

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Foods rich in specific nutrients can help protect your lungs and heart from harm caused by air pollution and wildfire smoke. Including a variety of healthy foods in your diet that are rich in vitamin A and carotenoids, vitamin E, vitamin C and omega-3 fatty acids can help protect your body from the harmful effects of smoke.

Colorful fruits and vegetables are rich in protective antioxidants. Visible layers of ash contain heavy metals and other pollutants that can be detrimental to your health. Consuming foods rich in iron, calcium and zinc can help reduce the levels of heavy metals in your body.

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### Cruciferous vegetables

- Broccoli
- Cabbage
- Cauliflower



### Onions and garlic

- Onions
- Garlic
- Chives
- Shallots



### Leafy greens

- Spinach
- Kale
- Chard
- Romaine lettuce



### Colorful fruits and vegetables

- Carrots
- Oranges
- Red bell peppers
- Strawberries



### Fish

- Salmon
- Light tuna (3 ounces/week)
- Sardines
- Trout



### Nuts and seeds

- Almonds
- Walnuts
- Peanuts
- Sunflower seeds



### Plant-based protein

- Kidney beans
- Pinto beans
- Garbanzo beans
- Lentils



### Foods with calcium

- Dairy (milk, cheese, yogurt)
- Calcium fortified plant-based alternatives
- Calcium-fortified breakfast cereal



### Whole grains

- Brown rice
- Oatmeal
- Whole wheat bread



### Herbs and spices

- Turmeric
- Ginger
- Rosemary
- Green tea



### Cooking

To reduce indoor air pollution when cooking, steam, boil, bake or use small electric appliances.



For more foods and information scan this QR code.



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### NUTRITION IMPROVES RESILIENCY

The foods you choose now can help your body defend itself from pollution, including wildfire smoke. Some exposures are out of anyone's control. However, we can use nutrition to help stay healthy. Eating a variety of colorful plant foods and foods with healthy fats has the potential to reduce inflammation and cell damage.

### CONSIDER HEALTH IMPROVEMENT

Pollution, whether from smoke or another source, increases the number of harmful compounds in the body called free radicals. Free radicals are unstable molecules that can damage your cells. This can happen when our bodies are exposed to stressors, such as consuming a diet high in saturated fat, exposure to the sun's ultraviolet rays, or breathing in smoke from wildfires.

### OXIDATIVE STRESS REDUCTION

These stressors contribute to the production of harmful free radicals, resulting in oxidative stress. Oxidative stress can increase the risk for chronic illnesses like asthma, diabetes, heart disease, and cancer. During oxidative stress, the cells can easily become damaged and do not repair themselves as well. You can counteract this imbalance by eating a balanced diet rich in antioxidants such as fruits and vegetables, whole grains, lean proteins, and healthy fats. The Dietary Guidelines for Americans provides recommendations for a balanced eating plan.

### SMOKE PROTECTION

Foods high in vitamin A, some carotenoids, vitamin E, vitamin C and omega-3 fatty acids can protect against smoke. There are heavy metals found in visible ash, which can be absorbed into your body. Foods high in iron, calcium and zinc can help decrease the amount of heavy metals in your body. Protect or improve your health during and after smoky days with a healthy diet.

### HEALTHY FOOD LISTS

The food items listed below are examples and the list provided is not exhaustive.

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### Vitamins

Vitamins are nutrients that help the body use other nutrients: organic chemicals that your body needs for normal growth and metabolism.

Vitamins	Foods**	Serving Size	% DV*
<b>A and carotenoids</b> The DV* for vitamin A is 900 mcg RAE for adults and children age 4 years and older.	Sweet potato, baked in skin	1 whole	156%
	Spinach, frozen, boiled	½ cup	65%
	Pumpkin, raw	½ cup	55%
	Carrots, raw	½ cup	51%
	Milk, skim, with added vitamin A and vitamin D	1 cup	17%
	Cantaloupe, raw	½ cup	15%
	Red peppers, sweet, raw	½ cup	13%
	Breakfast cereals, fortified with 10% of the DV for vitamin A	1 serving	10%
<b>C</b> The DV* for vitamin C is 90 mg for adults and children age 4 years and older.	Red peppers, sweet, raw	½ cup	106%
	Orange	1 medium	78%
	Kiwifruit	1 medium	71%
	Green pepper, sweet, raw	½ cup	67%
	Broccoli, cooked	½ cup	56%
	Strawberries, fresh, sliced	½ cup	54%
	Brussels sprouts, cooked	½ cup	53%
<b>E</b> The DV* for vitamin E is 15 mg for adults and children age 4 years and older.	Sunflower seeds, dry roasted	1 ounce	49%
	Almonds, dry roasted	1 ounce	45%
	Peanut butter	2 Tbsp.	19%
	Peanuts, dry roasted	1 ounce	15%
	Spinach, boiled	½ cup	13%

\*\*Choose a variety of colorful plant foods and fortified foods.

\* DV = Daily Value. The U.S. Food and Drug Administration (FDA) developed DVs to help consumers compare the nutrient contents of foods and dietary supplements within the context of a total diet. The % DV = Percent Daily Value shows the percentage of the Daily Value for a nutrient in one serving of food.

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### Healthy Fats

Omega-3 fatty acids are “healthy fats” that may support your heart health. These fats perform important functions in your body and are usually found in seafood or plants.

Healthy Fats	Foods	Serving Size	Grams per Serving**
<b>Omega-3 Fatty Acids (ALA)</b>  Daily needed by most men 1.6 g, women 1.2 g**	English walnuts	1 ounce	2.57 ALA
	Canola oil	1 Tbsp.	1.28 ALA
	Salmon, pink, canned, drained	3 ounce	.04 ALA, .63 DHA, .28 EPA
	Mayonnaise	1 Tbsp.	.74 ALA
	Refried beans, canned, vegetarian	½ cup	.21 ALA
	Trout, rainbow, wild, cooked	3 ounces	.44 DHA, .40 EPA
	Tuna, light, canned in water, drained+	3 ounces	.17 DHA, .02 EPA

\*\*Some nutrients don't have a Daily Value percentage. References for intake amounts are provided in grams per serving. Essential fatty acids are measured using alpha linolenic acid (ALA). Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are partial long chains that are beneficial.

+Tuna is a fish that, unfortunately, often has high levels of mercury. Avoid eating more than one serving (3 ounces) of tuna per week. Smaller, line-caught Oregon tuna (about 13 pounds each) have very low levels of mercury. Oregon tuna can be purchased from fishing families on the docks, at coastal fish markets or inland at some farmers markets or local grocery stores.



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### Minerals

Minerals are nutrients that help the body use other nutrients; inorganic substances from water and soil that are essential to the functioning of the body.

Minerals	Foods	Serving Size	% DV
<p><b>Calcium</b></p> <p>The DV for calcium is 1,300 mg for adults and children age 4 years and older.</p> <p>Note: Shake or stir fortified drinks before pouring to distribute calcium evenly.</p>	Yogurt, plain, low fat	8 ounces	32%
	Orange Juice, calcium-fortified*	1 cup	27%
	Yogurt, fruit, low fat	8 ounces	27%
	Mozzarella, part-skim	1.5 ounces	26%
	Milk, nonfat	1 cup	21%
	Soymilk, calcium-fortified*	1 cup	23%
	Tofu, firm, made with calcium sulfate	1 cup	19%
	Breakfast cereals, fortified with 10% of the DV for calcium	1 serving	10%
	Spinach, boiled, drained	½ cup	9%
	Kale, fresh, cooked	1 cup	7%
<p><b>Iron</b></p> <p>The DV for iron is 18 mg for adults and children age 4 years and older.</p>	Breakfast cereals, fortified with 100% of the DV for iron	1 serving	100%
	White beans, canned	1 cup	44%
	Lentils, boiled and drained	½ cup	17%
	Spinach, boiled and drained	½ cup	17%
	Chocolate, dark 45%-69% cacao solids	1 ounce	11%
	Kidney beans, canned	½ cup	11%
	Sardines, Atlantic, canned in oil, drained solids with bone	3 ounces	11%
<p><b>Selenium</b></p> <p>The DV for selenium is 55 mcg for adults and children age 5 years and older.</p>	Sardines, canned in oil, drained solids with bone	3 ounces	82%
	Beef steak, bottom round, roasted	3 ounces	60%
	Chicken, light meat, roasted	3 ounces	40%
	Cottage cheese, 1% milkfat	1 cup	36%
	Rice, brown, long-grain, cooked	1 cup	35%
	Egg, hard-cooked	1 large	27%
	Bread, whole-wheat	1 slice	24%
	Baked beans, canned, plain or vegetarian	1 cup	25%
<p><b>Zinc</b></p> <p>The DV for zinc is 11 mg for adults and children age 4 years and older.</p>	Breakfast cereals, fortified with 25% of the DV for zinc	1 serving	25%
	Oats, regular and quick, unenriched, cooked with water	1 cup	21%
	Pumpkin seeds, roasted	1 ounce	20%
	Cheese, cheddar	1.5 ounces	14%
	Shrimp, cooked	3 ounces	13%
	Lentils, boiled	½ cups	12%
	Sardines, canned in oil, drained solids with bone	3 ounces	10%
	Milk, 1% milkfat	1 cup	9%

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### *Glutathione*

Glutathione is a nutrient that helps reduce oxidative stress. Additionally, it may help support metabolic processes within the immune system including detoxification and regulation. Some foods containing glutathione can reduce or prevent oxidative stress, such as broccoli and other cruciferous vegetables, green tea, and foods with phytonutrients or selenium (such as, cottage cheese, brown rice, and eggs). Many factors can influence the safe dosage for glutathione. Therefore always check with your medical professional or a Registered Dietician for supplement recommendations.

### *Phytonutrients*

Phytonutrients naturally occur within colorful fruits and vegetables, legumes, whole grains, nuts, and other plant foods. These powerful nutrients can help protect the body from the effects of pollutants, as well as decrease the negative effects of inflammation and oxidation.

Color	Types of Phytonutrients	Foods
<b>White</b>	Flavanones, flavonols, and polyphenols.	Bananas, cabbage, mushrooms, and onions.
<b>Red</b>	Anthocyanidins, carotenoids, flavanones, flavan-3-ols, flavones, flavonols, and polyphenols.	Pink grapefruit, raspberries, red grapes, red peppers, strawberries and tomatoes.
<b>Yellow/Orange</b>	Carotenoids, flavanones and flavonols.	Carrots, oranges, peaches, and yellow squash.
<b>Blue/Purple</b>	Anthocyanidins, flavan-3-ols, polyphenols and proanthocyanidins.	Blackberries, blueberries, eggplant, and plums.
<b>Dark Green</b>	Carotenoids, flavanones, flavones and flavonols.	Artichoke, arugula, Bok choy, broccoli, chard, collard greens, kale, mustard greens, romaine lettuce and spinach.
<b>Light Green</b>	Carotenoids, flavanones, flavones and flavonols.	Brussels sprouts, cabbage, and kiwi.

### *Support the microbes in your gut*

Feeding the good bacteria (probiotics) in your gut with prebiotic foods aids in digestion and detoxification. Prebiotics help defend the gut from harmful pathogens including toxins. Particularly helpful are dry bean varieties and whole grains. Foods in the allium family that are rich in inulin - garlic, onions, shallots, leeks and chives also support the functions of the gut and the liver that can provide protection from toxins.

### *Herbs and spices*

Some herbs and spices can help reduce inflammation. Flavor foods with spices such as turmeric, ginger, rosemary and cloves instead of salt. To a lesser effect oregano, cinnamon and cayenne pepper can also reduce inflammation.

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### COOKING TIPS WHEN AIR QUALITY IS POOR

When cooking or preparing food choose methods and heating sources that can protect indoor air quality when the outdoor Air Quality Index (AQI) reaches harmful levels. Download the free Oregon Air app from your smartphone store for local air quality ratings. Consider not cooking and increasing the amount of raw foods on your menu such as fresh fruit, salads, sandwiches, smoothies and prepackaged, ready-to-eat foods.

When cooking at high temperatures oils, fat, and other food ingredients can release pollutants. Therefore, when outdoor air quality is poor, avoid or limit these cooking methods: frying, grilling, sautéing, stir-frying, or roasting. Also, remove excess fat when cooking high-fat foods like meat or poultry to decrease pollutants.

When smoke levels are high, burning wood, coal, oil or natural gas results in emissions to indoor air that can be harmful to lung and heart health. Natural gas burns cleaner than almost any fuel. However, natural gas is not emission-free. To reduce risk, limit use of these stoves. If you need to use a gas stove, run your HEPA air filter and/or turn on the range hood above your stove while cooking if it vents outside.

Use electric stoves or small electrical appliances such as slow cookers, electric pressure cookers, toaster ovens, microwave ovens, or roasters. With these heating sources steaming, boiling, stewing, and baking release relatively harmless water vapor.

To help avoid trips outside, plan your menus and cooking methods in advance to help you use the fresh or stored foods you may already have on hand. You can find free menu planning tips with colorful, inexpensive, easy recipes (many with video demonstrations) at [www.foodhero.org](http://www.foodhero.org). You can also find substitutions, serving sizes and nutrition facts labels. Another great source with similar resources is [www.myplate.gov](http://www.myplate.gov). Myplate.gov is also available as a free app from smartphone stores.

### FOOD SAFETY: CLEAN

Whether your fruit and vegetables are from your garden, purchased at a farmers market, or your local grocery store, they must be thoroughly cleaned before preparing and eating.

Wear food safe gloves when rinsing fruits and vegetables. Produce that is home grown or purchased at farmers markets should get a very gentle rinse with potable water before it is brought indoors.

Once inside, dry completely and store until ready for use. With clean, gloved hands, rinse and rub produce under cool running water when ready to use. Then rinse with cool running water and friction helps remove hazardous tiny particles from smoke and ash as well as harmful bacteria. Use a produce brush on bumpy produce, use fingers and palms to rub smooth produce and fingertips on delicate greens. Dip fragile berries and swirl in clean water. There's no need to use soap or a produce wash.

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### LIMIT EXPOSURE TO POLLUTANTS

Avoid bringing smoke and ash indoors by keeping doors and windows closed as much as possible. Wildfire smoke can irritate your eyes, nose, throat, lungs, and skin. Therefore, limit your time outdoors and reduce physical activity when air quality is poor. If you need to be outdoors, wear protective clothing that covers your skin and an N95 mask to reduce your exposure to pollutants.

Remove shoes and boots before entering. Remove outer layers of clothes, bag them or wash promptly.

### MANAGE STRESS

Wildfires and smoke from wildfires can be very stressful. Whether you are directly impacted or live hundreds of miles away, the impact of wildfires can leave you feeling overwhelmed, fearful, and anxious.

Make it a priority to regularly choose nutritious foods throughout the year so your body can build up its protective defenses.

Be mindful of the foods you select during stressful times, and limit foods that further exacerbate stress such as caffeine, monosodium glutamate, sugar, and saturated fats.

Protect your lungs while exercising by wearing an N95 respirator mask. Rooms where the air is cleaned well with HEPA air filters are also safe for exercise activities. Exercise is a great stress reliever, increases your sense of well-being, and it can boost your feel-good endorphins.

Having a good support system when going through difficult times can help reduce stress. Find others who can offer encouragement, practical help, and a sense of connectedness. If possible, invite others to share a meal. Sharing food with others can help boost spirits during an emergency or disaster.