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Food Poisoning in Produce and Vegetables

Is Your Produce Poisoned?

Tainted fruits and vegetables are a hidden health threat to you and your family. Here's what you need to do about it

By [Louisa Kamps](#), Louisa Kamps, a writer in Madison, WI, has written for Elle, the New Yorker, the New York Times, and Food & Wine.

Intro

In November 2003, after several days of steadily worsening muscle aches and nausea, Anna Doyle, 34, a Pennsylvania mother of one, realized that she had something more serious than the flu. By the time she dragged herself to the hospital, doctors there had already seen a parade of patients with similar symptoms, and they quickly diagnosed Doyle with [hepatitis A](#), a liver infection caused by eating contaminated food. The worst part of contracting the virus, which causes liver inflammation and kept her bedridden for weeks, was how profoundly it sapped her strength. "I'm a really independent, strong person, and to be weak and timid and unable to function was overwhelming," she says.

Doyle recovered. But she's still stunned by the cause of her illness: In one of the largest outbreaks of foodborne illness associated with produce, raw [scallions](#) served at a busy Chi-Chi's restaurant ultimately sickened 555 people and killed 3. "Who would have thought that green [onions](#) could kill you?" asks Doyle. "Now, I think that everything I eat could kill me."

Although most Americans are all too familiar with the dangers of contaminated meat, many don't realize that good-for-you fruits and veggies can harbor the same microbes--and cause the same mild-to-severe diseases. In fact, of the 200,000 to 800,000 cases of food poisoning Americans get each day, experts think that one-third could come from produce.

*That same fall, when 16-year-old Kayce Galindo fell ill after stopping at a restaurant in Carlsbad, CA, for a lemon-[chicken](#) dinner salad, her mother, Karie, whisked her to the hospital. The doctor diagnosed her crippling stomach cramps, vomiting, and bloody diarrhea as a severe case of food poisoning caused by the potentially lethal *E. coli* bacteria. Though she eventually recovered, Kayce spent 2 days in critical condition. When the local health department traced the contamination to the salad's greens--not the [chicken](#)--Karie says she was "shocked that something on a piece of [lettuce](#) could do this."*

Every year, Americans contract an estimated 76 million cases of food poisoning. Fortunately, most aren't life threatening and run their course. (See a doctor if you get diarrhea and vomiting that last more than 2 days, come on suddenly, or won't let up.) But the vast majority of these illnesses are never diagnosed or reported because the sufferer doesn't go to the doctor or assumes she has the flu. Most are therefore never traced to a specific food source. Presuming these cases are similar to the 25,000 that are investigated each year, produce could be the culprit in up to a third of these, as well. "Produce is an overlooked source of foodborne illness," says Sami Gottlieb, MD, an epidemiologist for the Centers for Disease Control and Prevention.

An analysis by the food advocacy group Center for Science in the Public Interest found that of more than 3,500 cases from 1990 to 2003, produce was responsible for the greatest number of individual food poisonings (though seafood caused more outbreaks). That means that while you're curled over the toilet cursing the hamburger or seafood platter you ate, the accompanying [lettuce](#) or tomato could have been the real culprit.

What can you do? Even public-health advocates say you shouldn't cut back on heart-protecting, cancer-fighting, low-calorie fruits and greens. "The one thing we do not want," says Jeff Farrar, MPH, PhD, head of the food-safety section of the California Department of Health Services, "is for consumers to stop eating fruits and [vegetables](#). They are a critical part of a healthy diet." Instead, read on to learn about the root causes of foodborne illness, to find out what to do if you get sick, and to get the most up-to-date, expert-tested methods to keep you and your family safe from dirty produce.

Cases of Tainted Produce on the Rise

The sharp rise in produce-associated poisoning in the United States can be attributed to changes in food sourcing, demand, and distribution. Crops have always been vulnerable to contamination because they're grown near farms that also raise animals, and bacteria from manure leaches into soil and water. Rapidly growing agricultural consolidation, from small family farms to centralized agribusiness, magnifies the risk. Today, crops tend to be larger and more widely distributed, so one outbreak can affect scores of people.

Over the past 15 years, the incidence of produceborne illness has more than doubled, as a series of landmark outbreaks made many people sick--especially children and those with weakened immunity. Kelley Beverly, 45, who has always served her family only thoroughly cooked meat, was horrified in 1996 when her son Michael, then 2½, got infected with *E. coli* by drinking tainted apple juice. He spent 8 days on kidney dialysis before he recovered. "It was terrifying," says Beverly, who lives outside Seattle. "I didn't know juice could be a problem."

Other fruits and [vegetables](#) have also caused outbreaks. In 1996 and 1997, [raspberries](#) were responsible for 1,386 cases of cyclosporiasis, a diarrheal illness caused by the *Cyclospora* parasite. And in 2001, contaminated cantaloupe sickened 50 people with salmonellosis, a common gastrointestinal illness that is not usually life threatening. Fresh spinach, [tomatoes](#), cilantro, watermelon, pears, carrots, and some varieties of sprouts have also been implicated.

Ironically, Americans' healthy habit of eating more raw fruits and [vegetables](#) than ever, even out of season, is driving the trend. "Increasing demand for fruits and [vegetables](#) in winter means more imports from countries where some of the basic infrastructure for sanitary living, like uncontaminated water, may not exist," says Craig Hedberg, PhD, an associate professor of environmental and occupational health at the University of Minnesota School of Public Health.

Indeed, 2003's [hepatitis A](#) outbreak--which came from Mexican-grown [scallions](#)--is "a very dramatic example of what is probably happening at low levels on a fairly regular basis," Hedberg says, as we eat fresh produce from countries where sanitation standards aren't as high as our own. In inspections conducted in 1999 and 2000-2001, the FDA found that 4.4 percent of 1,003 samples of fresh produce imported from 21 countries tested positive for harmful bacteria--four times the contamination rate of American produce samples.

But limiting yourself to domestic produce won't necessarily protect you. In an outbreak that's become legendary in epidemiological circles, more than 140 people got sick from *Salmonella*-contaminated domestic tomatoes served during the 2002 US Transplant Games at Disney's Wide World of Sports Complex in Florida. Because those sickened were mostly recipients of new hearts, kidneys, livers, or lungs--a population acutely vulnerable to foodborne illness--it's miraculous that no one died. At the same time that the [hepatitis A](#) outbreak caused by [scallions](#) was running its course on the East Coast in 2003, dozens of people on the West Coast were sickened by the California lettuce that turned up in Kayce Galindo's salad and landed her in the hospital.

Slashing Your Risk

Farmers, industry retailers, and government regulators are pushing to improve the safety of fruits and [vegetables](#) long before they land in the hands of consumers. But public awareness lags far behind. With that in mind, there's plenty you can do to combat bacteria in produce--at the grocery store, at home, and at restaurants when you eat out. Below are the safe-food strategies practiced by top health experts. Follow them to slash your odds of getting sick from fruits and [vegetables](#), wherever you eat.

Wash hands (and equipment) with a vengeance Prior to handling fruits and [vegetables](#), Linda Harris, PhD, a specialist in microbial food safety in the University of California, Davis, department of food science and technology, always washes her hands with warm, soapy water--and makes sure that any cutting boards, colanders, or knives she'll be using are clean. You should do the same.

Clean those fruits and veggies, too At the grocery store, "be aware that just as you fondled 12 apples before finding the 6 you want to take home, so did your neighbor," Harris says. "We sell our produce in a manner that leaves it open to contamination, and for that reason alone, fruits and [vegetables](#) should always be washed prior to consumption." Tumble tender fruits such as [raspberries](#) and grapes under cold running water in a colander, and scrub firmer produce (pears, apples, [tomatoes](#)) with hands under the running water. Also scrub root [vegetables](#) with a clean vegetable brush. Peel and discard the outer leaves of leafy vegetables such as spinach and lettuce. Harris thinks it's safe to eat "prewashed" veggies straight out of the bag: "Here's my thinking--these salads are usually prepared in facilities that are cleaner than anyone's kitchen. Even food-safety experts have to draw the line somewhere."

Don't let greens air-dry Blotting tender fruits and [vegetables](#) dry with a paper towel will remove more microorganisms. And with fruits and [vegetables](#) that can take it ([apples](#), [carrots](#), celery), Harris and her colleagues have demonstrated that rubbing produce dry also dramatically reduces pathogens.

"But don't rub it on your jeans!" she cautions.

Cut with care Even fruits and [vegetables](#) with inedible rinds should be thoroughly washed before they're cut, because rinds (especially the lumpy "netted" rinds of fruits such as cantaloupes) can trap bacteria that a knife blade can transfer to the fruit. And because bacteria can thrive in moist, bruised areas on produce, cut away those spots as soon as possible.

Chill out Even trace amounts of bacteria on cut produce can multiply to lethal levels if left at room temperature, so refrigerate cut or sliced fruits and veggies. In summer, foodborne illness spikes, so bring ice-packed coolers to picnics to chill those foods. And never eat foods left out for longer than 2 hours (on, say, a crudité platter, or left over from a meal). "If people go wrong, it's in forgetting to respect the 2-hour rule," says Harris. "Even here, people put out leftovers like melon slices and I have to say, 'C'mon guys, we're a food science department, we're supposed to know better!'"

Be a clean freak... Unkempt restaurant workers who handle food and sloppy salad bars that look neglected are red flags for Robert Gravani, PhD, a professor of food science at Cornell University, who looks for "overall cleanliness" everywhere he eats and shops. "It's all about attention to details. If there's something I don't like, I walk out. And if it's a significant violation, I might call the local health department and alert them to the problem."

...And a hand-washing hawk "If I see a food-handler in a restroom leaving without washing his hands, I have no problem saying, 'Dude, you didn't wash your hands!'" says Doug Powell, PhD, a professor of food safety at the University of Guelph in Ontario.

Scrutinize your farmers' market Despite their wholesome appearance, farm stands get extra scrutiny from food-safety advocates. "I've seen produce delivered in the backs of trucks alongside cans of oil, chemical containers, dirty diapers, dogs, and other inappropriate things," says Susan Strong, REHS, a retail food specialist with the California Department of Health Services. Also reconsider reaching for samples. "Produce vendors sometimes use rusty pocketknives to slice off pieces of fruit and then wipe the knife blade on the front of their shirt or on a dirty rag. Not good!"

Don't consume "recycled" condiments Strong isn't concerned about the temperature of open bowls of condiments, such as salsa and chutney, at restaurants because harmful bacteria can't grow in acidic conditions. "However, I am concerned that these and other food products, such as bread, chips, or nuts, not be re-served to another customer. Leftover unpackaged foods should be emptied onto used dinner plates so staff are not tempted to 'recycle' them."

What to Do If You Get Sick

If there's a silver lining to the news that foodborne illness caused by produce is on the rise, it's that greater consumer awareness and response can help improve the safety of our food supply in the long run. If you get nausea and the runs and suspect food poisoning, the most important thing to do is to rehydrate with [water](#) (not sugary [sports drinks](#) or soda, which work against hydration).

Then slowly introduce bland foods, such as broth and [soda crackers](#), when you feel better. If symptoms don't go away after a few days, see a doctor. And there's something else you can do, too: Put the word out to your local health department to help them connect the dots between your episode and similar reported cases.

If you suspect that produce has made you sick, log on to a Web site developed at Michigan State University, [RUSick2.com](#), to share your story. In a study, reporting to RUSick2 helped identify two foodborne outbreaks that health officials said might have otherwise gone unrecognized.

And that makes Paul Bartlett, PhD, MPH, an epidemiologist at MSU's National Food Safety and Toxicology Center, optimistic about the possibility of stanching the rise of produceborne illnesses. "Health departments would love to be able to stop outbreaks in their tracks," he says. "If everyone started using RUSick2 tomorrow, I'm convinced more outbreaks would be identified and contaminated food removed more quickly."

Last Update: 10/21/2004

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