<http://www.consumerreports.org/cro/index.htm>

**How safe is that chicken?**

**Most tested broilers were contaminated**

Last updated: January 2010

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Illustration: Keith Negley

You would think that after years of alarms about food safety—outbreaks of illness followed by renewed efforts at cleanup—a staple like chicken would be a lot safer to eat. But in our latest analysis of fresh, whole broilers bought at stores nationwide, two-thirds harbored salmonella and/or campylobacter, the leading bacterial causes of foodborne disease. That's a modest improvement since January 2007, when we found that eight of 10 broilers harbored those pathogens. But the numbers are still far too high, especially for campylobacter. Though the government has been talking about regulating it for years, it has yet to do so. (See [Viewpoint](http://consumerreports.org/cro/magazine-archive/2010/january/viewpoint/overview/lax-rules-risky-food-ov.htm).)  
  
The message is clear: Consumers still can't let down their guard. They must cook chicken to at least 165° F and prevent raw chicken or its juices from touching any other food.  
Illustration of chicken under microscope  
Illustration by Keith Negley  
  
Each year, salmonella and campylobacter from chicken and other food sources infect 3.4 million Americans, send 25,500 to hospitals, and kill about 500, according to estimates by the national Centers for Disease Control and Prevention. But the problem might be even more widespread: Many people who get sick don't seek medical care, and many of those who do aren't screened for foodborne infections, says Donna Rosenbaum, executive director of Safe Tables Our Priority, a national nonprofit food-safety organization. What's more, the CDC reports that in about 20 percent of salmonella cases and 55 percent of campylobacter cases, the bugs have proved resistant to at least one antibiotic. For that reason, victims who are sick enough to need antibiotics might have to try two or more before finding one that helps.  
  
*Consumer Reports* has been measuring contamination in store-bought chickens since 1998. For our latest analysis, we had an outside lab test 382 chickens bought last spring from more than 100 supermarkets, gourmet- and natural-food stores, and mass merchandisers in 22 states. We tested three top brands—Foster Farms, Perdue, and Tyson—as well as 30 nonorganic store brands, nine organic store brands, and nine organic name brands. Five of the organic brands were labeled "air-chilled" (a slaughterhouse process in which carcasses are refrigerated and may be misted, rather than dunked in cold chlorinated water).  
  
Among our findings:

* Campylobacter was in 62 percent of the chickens, salmonella was in 14 percent, and both bacteria were in 9 percent. Only 34 percent of the birds were clear of both pathogens. That's double the percentage of clean birds we found in our 2007 report but far less than the 51 percent in our 2003 report.
* Among the cleanest overall were air-chilled broilers. About 40 percent harbored one or both pathogens. Eight Bell & Evans organic broilers, which are air chilled, were free of both, but our sample was too small to determine that all Bell & Evans broilers would be.
* Store-brand organic chickens had no salmonella at all, showing that it's possible for chicken to arrive in stores without that bacterium riding along. But as our tests showed, banishing one bug doesn't mean banishing both: 57 percent of those birds harbored campylobacter.
* The cleanest name-brand chickens were Perdue's: 56 percent were free of both pathogens. This is the first time since we began testing chicken that one major brand has fared significantly better than others across the board.
* Most contaminated were Tyson and Foster Farms chickens. More than 80 percent tested positive for one or both pathogens.
* Among all brands and types of broilers tested, 68 percent of the salmonella and 60 percent of the campylobacter organisms we analyzed showed resistance to one or more antibiotics.

**Dirty birds**



As they're raised, chickens can peck at droppings and insects that carry salmonella and campylobacter. The bacteria settle in their intestines, usually without harm, and the chickens contaminate their environment with infected feces. When the birds are slaughtered, intestinal bacteria can wind up on their carcasses.  
  
To minimize contamination, processors of poultry (and of meat and seafood) follow federally mandated procedures collectively known as HACCP (pronounced hass-ip), which stands for Hazard Analysis and Critical Control Point. Those measures are in effect in slaughterhouses and processing plants and are the consumer's main protection against contaminated chicken. HACCP, implemented for poultry and meat plants in 1997, requires companies to spell out where contamination might occur and then institute procedures to prevent, reduce, or eliminate it.  
  
Inspectors for the U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS) monitor chicken companies' HACCP plans. They inspect carcasses and viscera for tumors, bruises, and other defects. During testing periods, they also pluck a broiler a day off the line and test it for the presence of salmonella. Plants that produce more than 12 salmonella-positive samples over 51 consecutive days of production fail to meet the FSIS-established performance standard, which triggers an FSIS review of the plant's HACCP plan. The plant would be expected to fix any problems; penalties are possible. To further motivate chicken processors to clean up their act, the [USDA has begun publicly posting processors' salmonella test results online](http://www.fsis.usda.gov/science/progress_report_salmonella_testing/index.asp). (The data isn't archived, making it hard to assess a processor's performance over time.)  
  
With this gentle prodding, poultry plants have improved, FSIS data indicate. Yet only 82 percent of broiler plants demonstrate what the FSIS calls "consistent process control." By the end of 2010, 90 percent of eligible plants should be able to meet that standard, according to FSIS projections.  
  
That still leaves campylobacter. As we went to press in November, an FSIS spokesperson said that baseline data on the prevalence of campylobacter in broiler and turkey carcasses had been collected and were being analyzed and that draft performance standards based on those findings and a risk assessment would be ready by the year's end. FSIS testing for campylobacter would follow.  
  
Carol L. Tucker-Foreman, distinguished fellow at the Consumer Federation of America's Food Policy Institute and a former USDA official, cited "at least a decade of promises and failures to develop campylobacter baseline data and a standard." But she acknowledged that the FSIS could deliver a report on baseline data by the end of 2009. "It is essential," she added, "to have a performance standard for campylobacter."

**Behind the numbers**



At 14 percent, the overall salmonella incidence is within the range we've seen in the past 12 years. In previous tests, the incidence ranged from 9 percent to 16 percent overall. Campylobacter incidence has varied more. Now it's 62 percent overall; in our previous tests it ranged from 42 percent to 81 percent.

When we took bacteria samples from contaminated chicken and analyzed their resistance to common antibiotics, most bugs could resist at least one antibiotic, and some evaded multiple classes of drugs. If a patient needs treatment, that might leave a doctor with poorer odds of choosing an effective antibiotic to fight infections that might be more stubborn.

The good news: All of the antibiotics were effective against 32 percent of the salmonella samples and 40 percent of the campylobacter samples. Back in January 2007, we reported that those figures were just 16 percent and 33 percent.

It's not surprising that we found antibiotic-resistant bacteria even in organic chickens, which are raised without antibiotics. "Chickens grown under organic conditions are given exposure to the outdoors, which provides contact with vermin such as rodents, insects, and birds that can carry and transmit these bacteria to chickens," said Michael Doyle, Ph.D., director of the University of Georgia's Center for Food Safety. Moreover, once genes for antibiotic resistance are in the gene pool of microbes, they can persist in the soil for years, even after the antibiotics are no longer in use.

**The safeguards in place**

Despite modest improvement in some numbers, our findings suggest that most companies' safeguards might be inadequate. To tease out what might account for Perdue's and Bell & Evans' relative success, we asked those companies as well as Tyson and Foster Farms whether they have added any food-safety measures in the past few years. We didn't reveal our test results.

Bruce Stewart-Brown, Perdue's vice president of food safety and quality, and a doctor of veterinary medicine, told us the company has increased its salmonella vaccinations over the past few years. That's designed to prevent chicks from picking up the bacterium from their mothers. Further protections, Stewart-Brown said, include an "all-in, all-out production model." Translation: Flocks are cleared out completely. Between flocks, farmers dry the empty chicken houses (which kills bacteria) and often use a product that temporarily changes the pH of the ground (to make it inhospitable to bacterial growth). Birds on each farm are the same age, so there are no older birds to contaminate newly arrived younger ones. "We also work closely with the farmers that raise our poultry," he said. "We make sure they isolate any other species of animals that might transfer microbiology to our chickens, use footwear and clothing control programs, and closely regulate visitation by outsiders."

Stewart-Brown also says that Perdue has implemented 25 food-safety steps at its processing plants.

Tom Stone, director of marketing at Bell & Evans, which produced those clean chickens, said the company has started packaging its products with a machine that seals the edges with film and shrinks the material, so there's no need for a "diaper" under the chicken to sop up fluids. "Our chickens are air-chilled and carry the ‘No Retained Water' statement," he said.

But listen to Foster Farms and Tyson and you'd think they would have been as clean. Robert O'Connor, vice president of technical services at Foster Farms and a doctor of veterinary medicine, cited the company's use of "the most technologically advanced and proven systems available." Tyson spokesman Gary Mickelson said his company's safeguards include keeping hatcheries sanitized, vaccinating some breeder stock against salmonella, and ensuring proper refrigeration during product delivery.

Our own experts say that controlling the spread of bacteria is a matter of being vigilant and taking many small steps, from hatchery to store, rather than relying on one magic bullet. A May 2008 release of USDA compliance guidelines for the poultry industry recommends 37 "best practices," including controlling litter moisture in chicken houses and continuously rinsing carcasses and equipment in processing plants. Chicken producers that follow good practices in the hatchery and on the farm and abide by those government guidelines should be able to produce fewer chickens that harbor salmonella, though not necessarily campylobacter.

**What you can do**

Too often, America's food-safety net has holes. Although Perdue chickens were cleaner than other big brands in our tests, and most air-chilled organic brands were especially clean, our tests are a snapshot in time and no type has been consistently low enough in pathogens to recommend over all others. Buying cleaner chicken may improve your odds if you fail to prepare chicken carefully. If you choose organic, be aware that it cost us up to $4.55 more per pound than the rest.

**Whatever bird you buy, one slipup and you're at risk.** Most important is to cook chicken to at least 165° F. Even if it's no longer pink, it can still harbor bacteria, so use a meat thermometer. The Polder THM-360, $30, and Taylor Weekend Warrior 806, $16, were excellent in our tests. Other tips:

* Make chicken one of the last items you buy before heading to the checkout line.
* Choose chicken that is well wrapped and at the bottom of the case, where the temperature should be coolest.
* Place chicken in a plastic bag like those in the produce department to keep juices from leaking.
* If you'll cook the chicken within a couple of days, store it at 40° F or below. Otherwise, freeze it.
* Thaw frozen chicken in a refrigerator, inside its packaging and on a plate, or on a plate in a microwave oven. Never thaw it on a counter: When the inside is still frozen, the outside can warm up, providing a breeding ground for bacteria. Cook chicken thawed in a microwave oven right away.
* Don't return cooked meat to the plate that held it raw.
* Refrigerate or freeze leftovers within 2 hours of cooking.

For more ways to help ensure that your food is safe, go to our Web site at [*www.BuySafeEatWell.org*](http://buysafeeatwell.org/)*.*

**Sickened by chicken?**

Michele Lundell, 53, of Apple Valley, Minn., became ill from campylobacter.

Within a few days of eating salad at a Minnesota restaurant in February 2009, Michele Lundell, a supervisor for a company that makes plastic tubing, experienced diarrhea, fever, and headache. "I kept getting sicker and sicker," she recalled. A test confirmed campylobacter. After her doctor prescribed antibiotics, Lundell said, she felt better for about a day, but then "all the same symptoms came back." She said she was hospitalized for six days. A Minnesota Department of Health investigation found that 10 people who had eaten at the restaurant were stricken with campylobacter and that the lettuce was most likely contaminated by raw or undercooked chicken. Lundell said she hasn't fully recovered. "It's hard to believe," she said, "that a person goes out to eat and gets so sick that it changes your life."

**Science lesson: A little bit can make you sick**

As few as 15 salmonella or 400 campylobacter organisms can make you ill. The salmonella found in raw poultry, meats, seafood, and produce can cause nausea, vomiting, abdominal cramps, diarrhea, fever, and headache, sometimes followed by arthritis symptoms. Campylobacter is found mainly in raw chicken. It wasn't recognized as a human pathogen until 1977, but it is now one of the most common causes of bacterial foodborne illness. The usual symptoms are diarrhea, often with fever, abdominal pain, nausea, headache, and muscle pain. Rarer are complications such as arthritis, meningitis, and Guillain-Barré syndrome, a potentially fatal neurological condition.

**From henhouse to your house**

The government's food-safety rules require chicken processors to identify "critical control points" where contamination might occur, then establish procedures for preventing, eliminating, or reducing those hazards. As our tests show, nothing guarantees a clean chicken. The contamination rate can vary with what the birds are fed, the preventive measures used, growing conditions, and the time of year, says Michael Doyle, Ph.D., director of the University of Georgia's Center for Food Safety. The procedures differ among plants; those outlined here are a possible scenario.



**In the hatchery**

Some chicks are contaminated with salmonella from their mothers or their own shells during hatching. Others ingest bacteria from their surroundings. Live birds infected with campylobacter or salmonella usually show no symptoms. To reduce the risk to people, some companies vaccinate hens and chicks against salmonella.



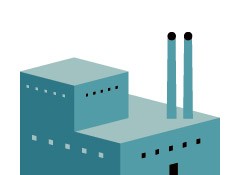
**In the chicken house**

Usually a new flock of thousands of chicks is trucked to a house run by a farmer according to the poultry producer's specifications. Chickens habitually peck the ground, ingesting bacteria from litter and feces, and could be exposed to vermin. Companies try to keep germ carriers away and continuously monitor the flocks' general health. Antibiotics are used to prevent or treat illness and might also be given to speed chickens' growth. But treated birds can't be sold as USDA-certified organic.



**On the road**

Chickens travel to the processing plant in cages. Filth can spread.



**Processing plant**

See In the processing plant.



**After processing**

Companies take steps to ensure their packaged chickens are properly refrigerated during shipping and delivery to market. Federal regulations require transport at a temperature no higher than 40° F.



**In the store**

Improper temperature or handling can introduce bacteria or cause them to multiply.



**In your kitchen**

Cooking chicken thoroughly, to at least 165° F, and washing anything that comes in contact with raw chicken greatly reduces risk.

**In the processing plant**

Birds are stunned, killed, and bled.

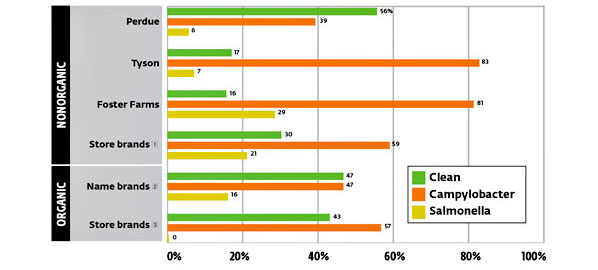
**Scalding.** Hot water loosens feathers for easier plucking. Some bacteria on feathers, feet, and skin are killed, but others float from one bird to another. Carcasses are washed. **Critical control point** Check temperature and pH of water.  
  
**Defeathering.** A machine's rubber fingers pluck feathers and remove the outermost layer of skin. Contaminated fingers can spread bacteria from carcass to carcass.  
  
**USDA visual inspection.** After internal organs are removed, a Department of Agriculture inspector checks carcasses and viscera for signs of disease, bruises, and other defects.  
  
**Washing.** Birds are sprayed with chlorinated water or other washes to reduce bacteria and are checked for visible fecal matter. Chickens that pass muster are chilled; those that fail are reprocessed or discarded.**Critical control point** Record chlorine level and adjust if necessary.  
  
**Chilling.** To prevent spoilage, carcasses are submerged in icy chlorinated water or air-chilled to lower their internal temperature to 40° F or less. When chickens emerge, USDA inspectors grade them for quality. At this stage, the USDA conducts salmonella testing, and the plant conducts one test for E. coli per 22,000 birds. Critical control point Monitor chlorine level of chiller or temperature of air-chill room; check internal temperature of birds.  
  
**Cut-up and packaging area.** Birds are cut into pieces if necessary, packaged, and shipped. Critical control point Check for metal fragments in packaged poultry.

**Talk the talk**

**Certified Humane Raised and Handled.** For starters, the chicken had access to clean food and water, according to third-party inspectors with expertise in animal welfare.  
  
**Free-range, free-roaming.** The chicken has had access to the outdoors, even if that means only that the door to the chicken house was left open briefly each day.  
  
**Fresh.** The carcass's internal temperature hasn't dropped below 24° F. Still, the chicken might be partly frozen.  
  
**Kosher.** The chicken was prepared according to Jewish dietary laws. Salt was added as part of the process.  
  
**Natural.** The chicken was "minimally processed" in a way that didn't fundamentally alter the raw product. It has no artificial ingredients, preservatives, or added color.  
  
**No antibiotics administered.** Don't assume this was verified unless you also see the label "USDA organic."  
  
**No hormones.** Pointless; the USDA prohibits the use of hormones in raising poultry.  
  
**USDA organic.** A USDA-accredited certifier has checked that the chicken company followed standards: Chickens were raised without antibiotics, ate 100 percent organic feed with no animal byproducts, and could go outdoors (though they might not have). For more about labels, go to our affiliate Web site at[*www.GreenerChoices.org*](http://www.greenerchoices.org/).

**Levels of contamination**

Below, the percentages of broilers that tested positive for campylobacter, salmonella, or neither (clean). We analyzed 70 chickens from each major brand, 66 from nonorganic store brands, 62 from organic name brands, and 44 from organic store brands. Figures are averages for store brands (both organic and nonorganic) and for organic name brands. Totals may exceed 100 percent because some broilers harbored both pathogens.



**1.** AJ's, Acme, Albertsons, America's Choice, Diebergs, Earth Fare, Fiesta, Fresh & Easy, Giant, Giant Eagle, Harris Teeter, Harry's, Hill Country Fare, Jewel, King Sooper, Kroger Value, Market Pantry, Nature's Promise, Publix, Roundy's, Safeway, Schnucks, Shaws, Shop 'n Save, Sweetbay, Tops, Wegmans, White Gem, Wild Harvest, Whole Foods.  
**2.** Bell & Evans, Coastal Range, Coleman, D'Artagnan, Eberly's, MBA Brand Smart Chicken, Mary's, Pollo Rosso, Rosie.  
**3.** Central Market HEB, O Organics (Safeway), Pacific Village (New Seasons), Private Selection Organic Fred Meyer, Private Selection Organic King Sooper, Private Selection Organic Kroger, Trader Joe's, Wegmans, Whole Foods.

**Resistance to antibiotics**

Some antibiotics important for humans are fed to nonorganic chickens to speed growth or prevent or treat illness. But bacteria may evolve to become immune to antibiotics, at which point the drugs become less effective in treating people. We took 53 salmonella samples and 103 campylobacter samples from chickens and determined what percentage of samples resisted antibiotics that usually work against those pathogens. "Resistant" indicates the percentage of bacteria that could survive a normal dose of the drug. Each color represents a class of antibiotics. Within classes, drugs are in alphabetical order.

|  |  |
| --- | --- |
| **Salmonella drug** | **Resistant (a)** |
| Gentamicin | 4% |
| Kanamycin | 17 |
| Streptomycin | 34 |
| Cefoxitin | 28 |
| Ceftiofur | 30 |
| Ceftriaxone | 0 (b) |
| Amoxicillin/clavulanic acid | 28 |
| Ampicillin | 30 |
| Chloramphenicol | 2 |
| Nalidixic acid | 2 |
| Sulfisoxazole | 21 |
| Tetracycline | 49 |
| **One or more drugs** | **68** |
| **Campylobacter drug** | **Resistant (c)** |
| Ciprofloxacin | 18% |
| Nalidixic acid | 21 |
| Tetracycline | 49 |
| **One or more drugs** | **60** |

(a) Tested drugs that were effective against salmonella: Amikacin, Ciprofloxacin, and Trimethoprim/Sulfamethoxazole. (b) 17% of samples were somewhat resistant: Ceftriaxone inhibited bacterial growth but didn't stop it. (c) Tested drugs that were effective against campylobacter: Gentamicin, Azithromycin, Erythromycin, Telithromycin, Clindamycin, and Florfenicol.

**The high cost of cheap chicken**

**97% of the breasts we tested harbored bacteria that could make you sick. Learn how to protect yourself.**

Published: December 2013



Dangerous bacteria  |  [Tainted chicken](javascript:void(0);)  |  [A new level of caution](javascript:void(0);)  |  [The better chicken to buy](javascript:void(0);)  |  [A good drug gone wrong](javascript:void(0);)  |  [Taking animals off drugs](javascript:void(0);)  |  [What needs to happen](javascript:void(0);)

**Dangerous bacteria**



We tested more than 300 raw chicken breasts from stores across the country.

When you shop at your favorite grocery store, you probably assume that the food on display is safe to take home. But in the poultry aisle, that simple assumption could make you very sick. Consumer Reports’ recent analysis of more than 300 raw chicken breasts purchased at stores across the U.S. found potentially harmful bacteria lurking in almost all of the chicken, including organic brands. In fact, we were conducting our research when news of the [national salmonella outbreak](http://www.consumerreports.org/cro/news/2013/10/consumer-reports-finds-dangerous-strain-of-salmonella-in-a-sample-of-foster-farms-chicken/index.htm)linked to three Foster Farms chicken plants became public. In that case 389 people were infected, and 40 percent of them were hospitalized, double the usual percentage in most outbreaks linked to salmonella. (Read about [sustainable alternatives when it comes to raising chickens](http://www.consumerreports.org/cro/news/2013/12/playing-chicken-safely/index.htm) and watch our video on the use of [antibiotics in animals](https://secure.consumersunion.org/site/Advocacy?cmd=display&page=UserAction&id=2819).)

**Related Topics**

* [Ground turkey tests](http://www.consumerreports.org/cro/magazine/2013/06/consumer-reports-investigation-talking-turkey/index.htm)
* [Whole chicken tests](http://www.consumerreports.org/cro/2012/05/how-safe-is-that-chicken/index.htm)
* [Pork tests](https://www.consumerreports.org/cro/pork0113.htm)

What’s going on with the nation’s most popular meat? (Americans buy an estimated 83 pounds per capita annually.) Though 48 million people fall sick every year from eating food tainted with salmonella, campylobacter, E. coli, and other contaminants, “more deaths were attributed to poultry than to any other commodity,” according to an analysis of outbreaks from 1998 through 2008 by the national Centers for Disease Control and Prevention (CDC). Here’s what you should know before buying your next package of chicken.

It’s unrealistic to expect that the uncooked chicken you buy won’t contain any potentially harmful bacteria. That’s one reason we advise you to prevent raw chicken or its juices from touching any other food and to cook it to at least 165˚ F. (Check our [reviews of meat thermometers](http://www.consumerreports.org/cro/meat-thermometers.htm).) Yet some bacteria are more worrisome than others—and our latest tests produced troubling findings. **More than half of the samples contained fecal contaminants**. And about half of them harbored at least one bacterium that was resistant to three or more commonly prescribed antibiotics.

Public-health officials say they think that the resistance to antibiotics in general is such a major concern that in September the [CDC released a landmark report](http://www.consumerreports.org/cro/news/2013/09/antiibiotic-misuse-kills-thousands-harms-millions/index.htm) outlining the dire threat it poses to our health. Antibiotic-­resistant infections are linked to at least 2 million illnesses and 23,000 deaths in the U.S. each year. And if antibiotic-­resistant bacteria continue their scary spread, they could lead to deadly infections after routine surgery or even a seemingly innocuous cut because the drugs that doctors prescribe will have lost their effectiveness.

Our tests showed that those resistant bacteria are commonly found in chicken at your local grocery store. We collected samples in July 2013, months before the Foster Farms salmonella outbreak drew a public-health alert from the Department of Agriculture (USDA). It turned out that we had purchased a package of the tainted chicken and that our tests found a strain of salmonella (known as Heidelberg) that matched one of those linked to the outbreak.

**48 million people fall sick each year from eating tainted food.**

Salmonella bacteria come in many strains. To understand their differences, think of all of the different breeds of dogs, says Lance Price, Ph.D., a professor in environmental and occupational health at the George Washington University School of Public Health and Health Services in Washington, D.C. “All dogs are the same species, but a Chihuahua and a pit bull behave differently,” he says. The drug-resistant Heidelberg strain of salmonella associated with the Foster Farms outbreak is more likely than other strains to cause disease. Antibiotic resistance by itself doesn’t make a pathogen more virulent, but when it occurs in a virulent strain such as the Heidelberg, something inherently dangerous suddenly becomes even worse—a bacterium that Price says acts “like a pit bull with rabies.”

Most of the illnesses caused by Foster Farms chicken produced symptoms typical of any salmonella infection—nausea, vomiting, severe stomach cramps, diarrhea, and a low-grade fever, says Christopher Braden, M.D., director of the division of foodborne, waterborne, and environmental diseases at the CDC. What was different was that the outbreak sent about twice as many people to a hospital as a typical salmonella outbreak does. About 20 percent of people with salmonella end up hospitalized; almost 40 percent of those sickened by the Foster Farms-­produced chicken did, Braden says.



Rick Schiller of San Jose, Calif., was rushed to the E.R. after being sickened by chicken.   
Photo: Jeff Singer

Rick Schiller, 51, was one of those unlucky victims. In September the San Jose, Calif., resident woke up at 2 a.m. “I’ve never felt so sick in my life,” he said. In addition to vomiting and diarrhea, he had terrible stomach pain. His symptoms worsened during the next few days, and his abdominal pain became so severe that his fiancée rushed him to an emergency room.

Schiller’s doctor ordered a stool culture, which revealed salmonella Heidelberg. It was one of the strains identified in the Foster Farms outbreak. Schiller had bought two packages of Foster Farms chicken thighs, and his fiancée prepared a meal for him using one of them. The other package, which was still in his freezer, had a plant code that matched one associated with the outbreak.

# Playing chicken . . . safely

## Why we need to think bigger when it comes to chicken safety

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Most chickens raised in the U.S. spend their lives in conditions like this.

Each year, about 48 million Americans get sick and 3,000 die from eating food tainted with salmonella, campylobacter, and other contaminants, according to the Centers for Disease Control and Prevention. More deaths are attributed to contaminated chicken than any other food, with salmonella as the leading cause of death.

At the [Food Safety and Sustainability Center](http://www.greenerchoices.org/) at Consumer Reports, we are very interested in the systemic causes of safety problems in the food supply. This gives us a unique view of what continues to be wrong—and what is getting worse—about meat safety in the U.S. Despite attempts in this country to address meat safety and cleanliness at the processing plant, the United States continues to lag behind many countries when it comes to the safety of its meat. We believe that to be in large part because of the failure to implement systemic solutions, including sound practices in livestock agriculture and slaughterhouses.

**We recently tested 316 samples of raw chicken breasts bought from stores across the country, and found salmonella on 10.8 percent of samples. We also found campylobacter, another pathogen, on 43 percent**. (Read our report "[The High Cost of Cheap Chicken](http://www.consumerreports.org/cro/chicken0214).")

Chickens raised for meat in the U.S. are often treated with subtherapeutic doses of antibiotics to prevent disease and promote growth. The Food and Drug Administration recently issued guidance that recognizes this problem and begins to address these uses. But much more is needed. The practice of antibiotic overuse can have disastrous side effects, as it can lead to antibiotic resistance in harmful bacteria such as salmonella and campylobacter, which then makes it harder to treat people who get sick. We found at least one multidrug-resistant pathogen on about half of samples and at least two multidrug-resistant pathogens on almost 12 percent of samples we tested.

Part of the chicken industry approach is that if poultry are contaminated with feces during slaughter, some companies use chemical disinfectants and chlorine baths to disinfect after the fact.

Some will argue that these measures—antibiotics, disinfectants, chlorine baths—are necessary to control harmful bacteria. But these are Band-Aid solutions in a broken system. If we are serious about food safety, we have to take a comprehensive approach that includes monitoring, government enforcement, and changing how we raise and slaughter animals for food.

We are not the first or only country to face this problem. In Denmark, more than 65 percent of commercial chicken broiler flocks tested positive for salmonella contamination around 1989. The country put in place strict standards, addressing the roots of the problem and has prohibited daily doses of low-level antibiotics fed to healthy animals and chemical disinfectants. Salmonella contamination declined sharply. By 2000, rates were less than 5 percent. Systemic solutions were implemented throughout the European Union. In fact, government data show that 22 countries in 2010 met the European target for less than or equal to 1 percent contamination of two important salmonella types in their broiler flocks.

In the country with the world’s lowest salmonella rates, Sweden, the government requires chicken producers to also implement better practices including good hygiene in hatcheries and farms, prohibits chemical disinfectants and subtherapeutic antibiotics, and requires extensive testing and monitoring. Flocks are tested before entering the slaughterhouse and have to be destroyed if a bird tests positive. And the chickens are tested again after slaughter. Contaminated birds can certainly never be sold to consumers. (The US allows up to 7.5 percent contamination rates with salmonella of whole chickens, over 40 percent for ground chicken, and has no standard for salmonella in chicken parts).

In an attempt to address salmonella contamination in this country, the U.S. Department of Agriculture recently released an Action Plan. The first item on the list is a so-called proposed modernization of poultry slaughter inspection. Currently, USDA inspectors in poultry houses inspect slaughtered chickens that hang upside down on a slaughter line, which zips along at a maximum speed of 140 birds per minute. A new USDA rule currently under consideration could *increase* the maximum line speed to 175 birds per minute—almost 3 birds per second. The “modernization” could reassign some of the USDA inspectors’ duties to plant employees. When it comes to better hygiene, USDA needs to set mandatory microbial standards for all meat products so producers have a clear safety target to meet.

The health and safety of the food system requires an action plan for change from the ground up. And the good news is that there are those farming on the progressive side of chicken production—a demonstration that it is possible and economically viable to produce chicken more sustainably.

We recently met Will Harris, the owner of White Oak Pastures Farm in Georgia. He shifted from an industrial-style, chemical- and drug-intensive system to a sustainable model of farming, and his chickens are raised on pasture. His farm has four animal welfare label certifications. Many farmers are not only changing the way they raise the animals, but also how animals are slaughtered.



On the Gunthorp family farm in northern Indiana.

Like Harris in Georgia, Greg Gunthorp, a farmer in northern Indiana, has his own USDA-inspected slaughterhouse on the farm, where he processes about 6 to 8 birds per minute. Having a dedicated processing plant means he avoids cross-contamination from the conventional poultry being processed with his sustainable chicken. And he doesn’t use chlorine to “disinfect” the birds before selling it to the customers.

These courageous farmers voluntarily took steps to implement sustainable practices not because it was easier but because it was the right thing to do for their workers, their animals, and the food they sell to us. They have shown that it is possible, and even economically viable, to clean up chicken coops, provide clean living conditions for animals inside and outside, to minimize stress to the animals, feed the animals what they would naturally eat, and to not feed drugs to healthy animals. They provide a meaningful alternative for consumers who want to choose meat that comes from sustainable and healthy farms.

In order to accelerate the demand for meat and poultry produced with better production practices, consumers should look for reliable companies and labels. Labels that are backed by rigorous and meaningful standards include Animal Welfare Approved for beef, pork, and chicken, and American Grassfed Certified for beef. USDA Organic is also a strong label, which prohibits feeding chicken parts back to chickens and prohibits antibiotics after the first day of life. But there is room for improvement and we continue to advocate with the U.S. Department of Agriculture for stronger organic standards.

And don’t bother with labels such as “natural,” “free range,” “cage free,” and “no hormones,” which aren’t meaningful. (Read more about [labels on chickens](http://www.greenerchoices.org/chicken-labels).)

When other countries take a systemic approach to a meat safety problem and see a steady decline in salmonella contamination rates, there is no reason why the U.S. meat supply can’t also move in that direction. Instead, since 1998, Consumer Reports’ tests of chicken have shown salmonella rates have not changed much, ranging between 11 percent and 16 percent. And contamination with multidrug-resistant pathogens continues.

Our government needs to step up and protect consumers. The chicken industry needs to quit focusing on cutting costs and start focusing on saving people’s lives. It’s time to tackle the *system* of animal agriculture that sickens and kills people, and quit using Band-Aid solutions, especially Band-Aids that allow the problem to fester underneath.