Fowl Play

Your favorite lean meat serves up more than protein: There's a good chance the chicken on your plate contains pathogens and poison. What is Uncle Sam doing about it? Diddly squawk. SELF investigates. **By Tula Karras**

Jenelle Dorner, 32, of Bloomington, Indiana, doesn't eat chicken. In fact, she hardly eats anything. "Each night while I sleep, I'm fed nutrients and fluids by IV," says the married mother of one. Eight years ago, Dorner developed gastroparesis, a condition that delays or prevents food from reaching the intestines, where nutrients are absorbed. The possible cause? A hearty helping of bacteria-ridden chicken she ate at a restaurant 14 years ago.

Her story is an extreme one, but poultry can make you sick as easily today as it did to Dorner when she bit into her destructive dinner. In fact, there is a 50 percent chance that the bird you bring home from the grocery store will contain *Campylobacter* (known as campy for short), the bacteria that was lurking in Dorner's undercooked entrée. The pathogen, found in a chicken's intestinal tract, causes no harm to the animals, but it can make humans very ill, sometimes fatally, if high cooking temperatures don't kill it. Seeing as how the average American puts away more than 42 pounds of poultry per year (equal to 222 chicken breasts), your chances of getting sick are considerable. An estimated 76 million cases of foodborne illness occur each year in the United States, and during the past decade, poultry has caused more cases than any other individual food group, including vegetables, fruit, seafood and beef, according to data from the Center for Science in the Public Interest (CSPI), a food and health watchdog group in Washington, D.C. "Infections of campy are so common that many of us have probably already had it at least once," says Robert Tauxe, M.D., deputy director of the Centers for Disease Control and Prevention's Division of Foodborne, Bacterial and Mycotic Diseases in Atlanta.

Dorner's ordeal began in 1995, when she was a sophomore at the University of Illinois at Urbana-Champaign. Her father took her to a restaurant to celebrate her 19th birthday, and she ordered chicken. "I remember thinking it was slightly pink, but other than that, it seemed fine," she says. Three days later, Dorner began vomiting and experiencing stomach pains and diarrhea. Doctors at the student health center suspected a virus and sent her home with instructions to stay hydrated. But her condition worsened. "I was running a fever, couldn't keep anything down and had bloody diarrhea," Dorner recalls. She returned to the health center, where they took a stool sample and admitted her to the hospital. Dorner's lab work revealed that she had contracted campy. After taking the antibiotic Cipro, she felt better, but her digestive system was never the same. In 2001, Dorner began having severe abdominal pain and couldn't eat a meal without vomiting, the first signs of her gastroparesis. During the next five years, her condition progressed to full-blown digestive failure. "My doctors won't ever be certain, but they believe that my campylobacter infection 14 years ago could have weakened my digestive system and set the stage for the gastroparesis," Dorner says. "I was completely healthy until I had that meal."

DETOX YOUR MEALS

If bacteria in your bird isn't enough to give you pause, the arsenic should be. About 70 percent of broiler chickens are fed arsenic, a known carcinogen, to help them grow bigger faster. Avoid eating it yourself.

Buy organic. Chicken feed used at organic farms is guaranteed to be free of arsenic.

Shop for these brands. Buy from Tyson, Rocky Jr. Natural Chicken, Gerber Amish and Smart Chicken; a 2006 study by the Institute for Agriculture and Trade Policy in Minneapolis found that their products contained little to no arsenic. (Pathogens may still be present.)

De-liver yourself. Arsenic accumulates in the organs of animals, and levels are highest in the liver. So unless it's organic, don't eat it. (As if you needed another reason!)

Skip the skin. Arsenic lurks in the skin as well as the muscle, so peel your poultry; it may reduce the level of poison in your meal.

Modify your order. If your deli or salad bar doesn't specify, assume the chicken is not organic and may be higher in arsenic.

OPPOSITE PAGE: NEAL C. LAURON/*THE COLUMBUS DISPATCH*/AP PHOTO

Overcrowding, dirty drinking water and bug-infested feed can turn chicken houses into ideal breeding grounds for bacteria.

50%

of chicken breasts in stores contain bacteria that could make you sick.

FOLLOW THE CHICKEN

From farm to table, there are many opportunities for poultry to become tainted—and a number of missed chances for the industry and the USDA to help produce safer birds.

1 A chicken's life

Big poultry producers raise tens of thousands of birds in one house, where they share limited space and water—so bacteria spreads easily. Birds are fed antibiotic- and arsenic-laced feed to fatten them in their brief six-week life span.

2 USDA "inspected"

After chickens are slaughtered (when most contamination occurs), USDA inspectors look for *visible* signs of bacteria, such as feces. But not even X-ray vision could detect bacteria. Dirty birds can still get a thumbs-up.

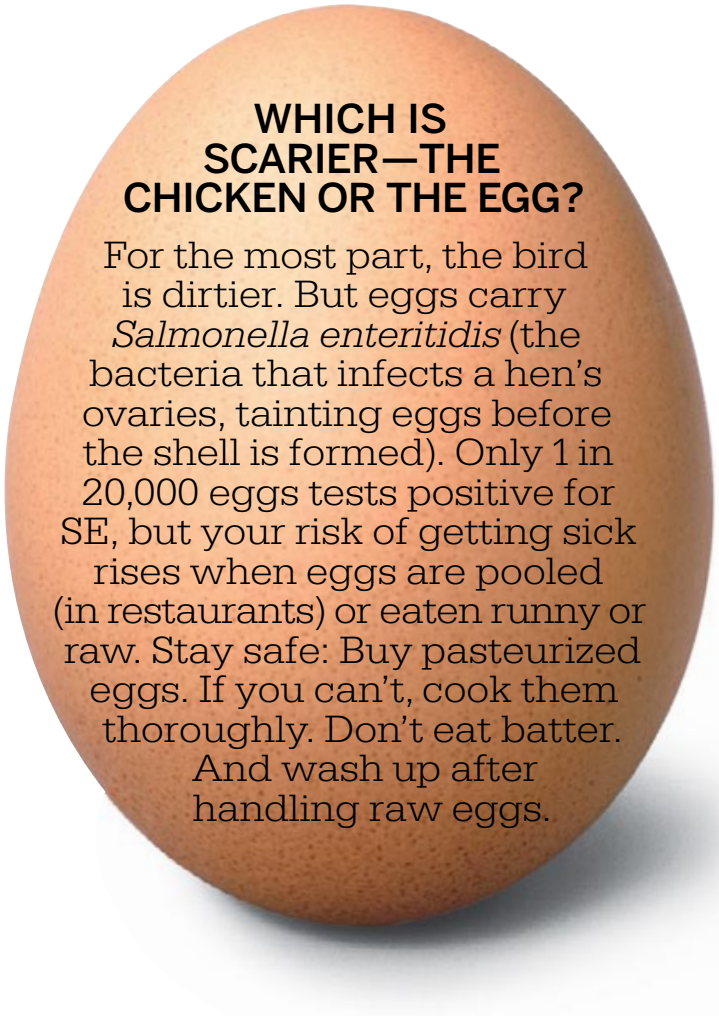
Campy isn't the only bug infecting chickens and the women who eat them. Between 2000 and 2005, rates of salmonella, another dangerous chicken-borne pathogen, spiked 80 percent in broiler birds. Although rates have declined slightly since then, the percentage of food poisonings from salmonella has remained steady over the past decade. And in addition to gut-ravaging bacteria, there could be another harmful hitchhiker on your roaster: Conventionally raised birds may also contain arsenic, a known carcinogen. "About 70 percent of broiler chickens in the United States are fed arsenic at some point," says David Wallinga, M.D., director of the Food and Health Program at the Institute for Agriculture and Trade Policy (IATP), a nonprofit think tank focusing on farming and food policy, in Minneapolis. Farmers add arsenic to chicken feed in order to fatten their flocks—birds go from hatchling to slaughter in only six weeks—and to give the birds their pinkish hue. And the practice is actually legal.

The average person ingests an estimated 8.1 micrograms of arsenic a day from chicken, according to a study from the USDA. And when you add that to the small amounts of arsenic you can be exposed to from other sources, such as drinking water, dust and arsenic-treated wood, a steady diet of chicken could quickly become risky. "Chronic exposure [10 to 40 micrograms a day, research suggests] is associated with an increased risk for skin, bladder and respiratory cancer," says Caroline Smith DeWaal, food-safety director at the CSPI. Richard Lobb, a spokesman for the National Chicken Council in Washington, D.C., told SELF that the arsenic found in some chickens could also come from environmental sources—insisting that there is no evidence that arsenic fed to chickens harms humans.

Along with arsenic, farmers are also allowed to lace their birds' feed with antibiotics to control bacteria in crowded quarters. It sounds great in theory, but if you catch a strain of bacteria that was exposed to antibiotics in the chicken's gut, and that strain "learned" to outsmart the antibiotics, then it will be harder for you to recover. "Antibiotic-resistant strains can last longer in your body and are more likely to lead to hospitalization," Dr. Tauxe says. What's more, these superbugs are on the rise, so even though the hens might be healthy, they may be making you sicker. (Lobb reinforced that "food safety is a top concern of the poultry industry" and that it has worked to adopt judicious use of antibiotics in its farming practices.)

Who's guarding the henhouse?

It may as well be the fox himself, considering how little regulatory agencies are doing. The failures start on the farm. *Farm* is a quaint term that does nothing to conjure up the thousands of chickens crammed together in cramped quarters, making it easier for them to swap bacteria through direct contact and their water supply (see "Follow the Chicken," above). When the birds arrive at the slaughterhouse, they are usually rinsed with hot water and chlorine—a step that can help reduce bacteria levels but isn't



3 Microbial testing

Poultry plants undergo USDA microbial testing for salmonella every 12 to 24 months. When a plant fails, it can usually continue operating, but it becomes subject to more frequent tests. Plants that perform well are tested less often.

4 Packing pathogens

Plants continue to send chicken into the marketplace while they're waiting to get lab results telling them whether or not their chicken is tainted. Results can take up to three weeks.

5 Dangerous dinners

If an outbreak occurs because of salmonella or campy, a plant may issue a recall. But by that time, you may have bought and eaten the bird. If you or the restaurant didn't cook it thoroughly, you can get sick.

required by the USDA. (The chlorine used for rinsing presents no safety issue for humans.) Unfortunately, dirty birds still go under the knife. It is here, when birds are gutted and defeathered, that bacteria travels from the intestines to the surface of muscle meat and the porous poultry skin. A USDA officer is on site in every plant, responsible for giving *visual* once-overs to about 35 birds a minute. "Inspectors look for things like whether entrails or feces have contaminated the outside of the bird and whether there are bruises or other signs of disease," says Kenneth Petersen, D.V.M., assistant administrator in the Office of Field Operations at the USDA's Food Safety and Inspection Service. But a hen may look fine and still be loaded with microscopic salmonella or campylobacter.

The gold standard for detecting bacteria in chicken is microbial testing. The USDA requires that plants submit to a test for salmonella about once a year. (There is currently no regulatory test for campy.) And in recent months, the USDA has begun reallocating resources to test poorly performing plants more often and plants with better records less often. These cleaner plants undergo testing at least once every two years. During the testing period, the USDA pulls one sample from the plant per day for 51 days. "If more than 12 of those 51 samples test positive for salmonella, it's deemed a performance-standard failure," Dr. Petersen says. Put it another way: A plant can pass even if just under 20 percent of its poultry is riddled with potentially harmful pathogens. And that plant's birds can end up in your grocery store.

In the event that a plant fails to meet even this low standard, the USDA doesn't immediately suspend it. Instead, the agency performs a follow-up test "as soon as possible" and sends an officer to scrutinize the plant's procedures. Once the officer determines the problem, he asks the plant to address it. If the plant refuses to comply, the USDA sends it a letter giving it three days to clean up its act. If that doesn't work, the plant is suspended while it makes corrections. "Of the 135 letters we sent out in 2007, about 30 plants were suspended," Dr. Petersen says. Public health experts are critical. "There are roughly 6,000 processing plants in the United States, and they've suspended only 30? Not impressive," says Carol Tucker-Foreman, distinguished fellow of the Food Policy Institute for the Consumer Federation of America in Washington, D.C., and former assistant secretary of agriculture under the Carter administration. "The USDA works feverishly to prevent a plant from shutting down; they go in and hold hands and grant extensions," Tucker-Foreman says. A USDA spokesperson counters that safeguarding poultry,

70%
of broiler chickens are fed arsenic.

SICK-O-METER How can you tell if your icky stomach symptoms are courtesy of a recent meal or something else? Check in with this cheat sheet.

Tough it out at home if...

You're simply not feeling well or you vomited or had diarrhea only a few times, or if your symptoms are starting to resolve and you can keep down at least small amounts of liquid to replace lost fluids, says Charles F. Pattavina, M.D., spokesman in Bangor, Maine, for the American College of Emergency Physicians. You most likely have a virus that will pass in three days or so.

Call your doctor if...

Your abdominal pain is worse than a few cramps; or you are running a high fever; or you can't keep anything down (not even sips of liquid) for 4 to 6 hours or you can't keep down medications such as birth control; or you've been sick for at least three days; or you're extremely thirsty and light-headed (an early sign of dehydration). It may be viral, and you may need antinausea drugs and hydration.

Go straight to the ER if...

Your stomach pain is severe or you're dizzy; or your fever is very high (at or above 102°) and accompanied by chills and sweats; or you have blood in your stool or see it when you vomit. Ask about having a stool-sample test: If it's positive for campy or salmonella, you'll need antibiotics; plus, accurate tracking of food poisoning cases is essential to help the government monitor outbreaks.

FROM LEFT: SCIENCE SOURCE/PHOTO RESEARCHERS, ROBERT BECKER/*LINCOLN JOURNAL STAR*/AP PHOTO, ANDREW RUBTSOV/ALAMY. OPPOSITE PAGE, FROM LEFT: BRUCE FRIEDRICH/PETA/AP PHOTO, LES STONE/CORBIS/SYGMA. STILL LIFE: GETTY IMAGES.

eggs and meat is the agency's top priority, which it accomplishes "through a dedicated workforce, evolving technology and science and good business practices."

To reduce your odds of purchasing meat from plants that have failed USDA inspection, you have to jump through numerous hoops. The USDA has begun posting the names and identifying digits, or P numbers, of offending plants on its website (www.fsis.usda.gov/science/salmonella_verification_testing_program/index.asp)—a step that has reduced contamination rates, Tucker-Foreman says. To avoid buying a bird from a poorly performing plant, you can check the site monthly to print out the list, then compare it with the packages in your store or toss any chicken you already bought with matching numbers. But not all packages carry P numbers, and because plants can pump out bacteria-ridden chicken and still pass inspection, there is still no guarantee that your bird is bacteria-free.

The USDA claims it has broad authority to enforce regulations and take action against rogue plants if necessary; but, in truth, it is limited in its ability to permanently shut down repeat offenders. In 1999, the USDA tried to close a Supreme Beef meat plant in Texas because its meat failed the USDA's salmonella tests three times in 11 months. Supreme Beef sued the USDA, claiming that the meat could have arrived at the plant already tainted by salmonella, and the law applied only to sanitary conditions within the plant. A 2001 court decision agreed with Supreme Beef, in effect curtailing the USDA's power to make good on its threats. Critics blame the Bush administration for not appealing the decision to the Supreme Court and a Republican-dominated Congress for caving to the meat lobby and refusing to support proposals to bolster the USDA's authority. "The message the Bush administration sent to meat plants was, 'You don't have to worry you'll be shut down because your salmonella levels are too high,'" Tucker-Foreman says. Bottom line: Plants can churn out a virtual petri dish of product. And consumers, who are flocking to chicken in greater numbers each year (it is, after all, one of the leanest sources of meat protein), are paying the price.

16% of the salmonella in chicken breasts is resistant to Cipro.

Debugging the birds

What *should* be happening to chicken before it lands in your #4 deli special? Ridding roasters of illness-causing bacteria must begin on the farm. "The industry knows how to produce safer poultry; they're just not doing it as carefully as they should," says Marion Nestle, Ph.D., professor of nutrition at New York University in New York City and author of *What to*

HAVE A SAFER DINNER TONIGHT

Feeling chicken about chicken? We spoke to public health experts to find out how you can minimize your risks when you're shopping, cooking and ordering off a menu.

In the meat aisle

CHOOSE FROZEN Freezing kills some campy in chicken, says Robert Tauxe, M.D., of the CDC, so buying poultry that's already on ice may help reduce the bacteria you bring into your kitchen. But salmonella survives the deep freeze, so follow package instructions when cooking prepared products such as stuffed breasts or chicken cordon bleu. A slew of salmonella cases in 2008 was attributed to frozen chicken that consumers failed to cook thoroughly. The most common mistake? They assumed the meat was precooked and used the microwave to heat their meals instead of the oven.

PICK CLEAN PACKAGES Look closely at the meat case. If a package of chicken appears leaky, drippy or sticky on the outside, skip it. "It is very likely to be contaminated, and if it leaks, the bacteria will get on other foods or on children in your grocery cart," Dr. Tauxe says. And regardless of the package you select, use a plastic bag from the produce section to grab it to keep bacteria off your hands and other food in your basket.

At home

BECOME A GERMOPHOBE Chicken pathogens, especially campy, are easily transferred from one food to another. "If you cut up raw chicken, don't wash your hands, then make a salad—you can guarantee there will be campy in that salad," Dr. Tauxe says. "I handle chicken as if it were a hazardous material," says Felicia Nestor, senior food policy analyst at Food and Water Watch, a nonprofit consumer-safety group in Washington, D.C. Follow her lead: Unwrap raw chicken in the sink, transfer it to a pan or cutting board, then scour the sink, counter and board with hot soapy water. Wash your hands with hot water and soap. Clean dishes that have touched raw chicken in the dishwasher.

TAKE YOUR CHICKEN'S TEMP In a whole chicken, stick a meat thermometer into the thickest part of the thigh to be sure it's cooked through. In boneless breasts or ground-chicken patties, aim for the fattest part.

FREEZE FOR LATER If you won't be eating the chicken you bought before it expires, freeze it for up to nine months.

Eating out

BE A FOOD SNOB Forget four stars; the restaurant rating you should be most interested in is from the health department. Not all counties require eateries to post it, but in those that do, look for a 90 or higher or a grade of A. This rating indicates the restaurant has procedures in place that render the kitchen an unwelcome area for bacteria.

EYE YOUR MEAT When relying on strangers, trust what you see. If the chicken is at all pink, or the juices don't run clear, send it back.

DON'T FEAR FAST FOOD CHAINS At least when it comes to foodborne illness. The meat you order at the drive-through or counter may be less likely to contain pathogens or be undercooked than meat at a sit-down restaurant. Unfortunately, many fast food meats might not score as well when it comes to arsenic. In the Institute for Agriculture and Trade Policy's 2006 arsenic report, all of the fast food samples tested contained detectable (but not dangerous) levels. Those with the lowest? KFC and Subway.

Many packages (such as this one) may not display a P number. Look for one; it's the only way to check up on the processing plant.

ALWAYS COOK YOUR CHICKEN WELL

165° Ground chicken **170°** Chicken breast **180°** Whole chicken

Eat (North Point Press). Less crowding in chicken coops and supplying chlorinated drinking water for the birds are a start. But to help completely eradicate pathogens, the industry should work to rid chicken feed of bacteria by keeping bug-carrying rodents out of chicken houses, and it should test birds for bacteria before slaughter, Dr. Tauxe suggests.

The unlikely McRole model for safer chicken-processing standards: fast food chains. "Companies like McDonald's and Burger King don't count on USDA regulations to keep their product safe," Tucker-Foreman says. Because of the bad rap the fast food industry acquired during the Jack in the Box fatal E. coli outbreak in 1993, major fast food companies now go to extraordinary lengths to safeguard their products.

"We do microbiological testing hourly, every day," says Edward Sabatini, vice president of quality assurance, food safety and regulatory compliance at Burger King Corporation in Miami. The company holds all meat (it's frozen) until results come back, so tainted patties can be weeded out. It also monitors its flocks' feed and water and keeps wild birds, which can easily transfer salmonella to chickens, out of its breeder flocks. Plus, unlike other eateries, fast food chains standardize their cooking process (and cook meat well), so high cooking temperatures kill any wayward pathogen that has eluded Burger King's tightly knit regulatory system.

HOW MUCH IS TOO MUCH?

Despite its faults, chicken is still a smart animal-protein pick; skinless breasts have virtually no saturated fat. "Half of your day's protein should come from dairy, veggies and grains," says SELF contributing editor Janis Jibrin, R.D. The rest—about 6 ounces—can come from animal sources, including poultry. How to know when you've hit your limit:

If you eat organic chicken, you can get all 6 oz from poultry and avoid arsenic. But nutritionwise, it's best to forgo chicken for other healthful proteins (such as legumes, tofu, beef, pork and fish) a few times a week.

If you eat conventionally raised chicken, stick to three 6-oz servings per week to limit arsenic intake. Get the rest of your protein from healthful foods (fish and lean meat).

If you eat both, limit your intake of conventionally raised chicken to less than 18 oz per week. You can consume your additional 24 oz of protein from organic chicken, lean meat and legumes. When possible, choose fish such as wild salmon to increase your intake of heart-healthy omega-3 fatty acids.

In addition to putting controls in place on the farm, it's also up to the government to develop stricter standards for plant performance. "When the 20 percent salmonella performance standard was set in 1996, the idea was we would gradually ratchet it down to around 5 percent or so," says Michael Taylor, research professor at George Washington University School of Public Health and Health Services in Washington, D.C., and a former USDA administrator who helped write the original rule. "But the strategy of bringing the standard down was not pursued by subsequent departments, and there has been little follow-up," he says.

Some progress has been made on the antibiotic-resistant front. The FDA removed one group of commonly used antibiotics called fluoroquinolones from use in poultry in 2005. "But tetracycline and sulfa drugs are still added to feed," IATP's Dr. Wallinga says. The issue is of such urgency that more than 350 groups, including the American Medical Association, have endorsed a bill—the Preservation of Antibiotics for Medical Treatment Act—that would phase out the routine use of medically important antibiotics in animals. Log on to KeepAntibioticsWorking.org and click the Act Now button to send an automatic form letter in support of the bill to your congressional representatives.

If the state of chicken has ruffled your feathers and made you despair of a diet of tofu and lentils, take heart: There are things you can do to enjoy chicken without worry. Cook your chicken thoroughly (to kill off bacteria) and follow the steps outlined in "Have a Safer Dinner Tonight" (opposite page). You can also get on your squawk box and ask your congressperson to support the Food Safety Authority Modernization Act, which would enact measures to improve testing and inspection. Because, in the end, your tax dollars—which fund the USDA—should make the food you eat safer. "Why should we tolerate spending money on a program that defrauds the public with an archaic system and a seal that says our government has inspected this meat and it's OK?" Tucker-Foreman asks. When it comes to tonight's dinner, you'll have to take your health into your own hands. The greatest weapon against food poisoning is your own roasting pan. ■

Additional reporting by Lee Cabot Walker

TOM SCHIERLITZ; STYLING, BRIAN PRESTON-CAMPBELL.