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Between Pathogens and Chemical Contaminants, Avoid Chicken

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STORY AT-A-GLANCE

- Between 2009 and 2015, there were 5,760 reported foodborne outbreaks resulting in 100,939 illnesses, 5,699 hospitalizations and 145 deaths
- Chicken was responsible for the most outbreak-associated illnesses — 3,114 cases in all (12%), followed by pork and seeded vegetables, each responsible for 10% of illnesses
- Food testing through the years has shown that chicken is particularly prone to contamination with dangerous pathogens, including antibiotic-resistant bacteria
- Raw chicken has become a notorious carrier of salmonella, campylobacter, clostridium perfringens and listeria bacteria. Salmonella contamination is of particular concern, as multidrug-resistant salmonella has become prevalent
- According to predictions, 10 million people worldwide will die from antibiotic-resistant diseases by 2050 lest swift action is taken to curb resistance — and that necessitates the elimination of unnecessary agricultural use of antibiotics

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While health agencies make a big stink about unsterilized foods such as raw organic milk, the food associated with the greatest number of foodborne illnesses is factory farmed chicken.

According to the latest Centers for Disease Control and Prevention (CDC) statistics,[1] there were 5,760 reported foodborne outbreaks between 2009 and 2015, resulting in 100,939 illnesses, 5,699 hospitalizations and 145 deaths. Of these, chicken was responsible for the most outbreak-associated illnesses — 3,114 illnesses in total (12%), followed by pork and seeded vegetables, each of which was responsible for 10% of illnesses. As noted by CBS News:[2]

> *"No other food, it turns out, is quite as problematic as chicken — the heart-healthy alternative to red meat. Though fish and dairy technically caused more 'outbreaks,' chicken sickened the most people ...*
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> *'Chicken is a reservoir for salmonella,' explains Thomas Gremillion, director of the Food Policy Institute at the Consumer Federation of America.*
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> *Though proper cooking can kill most salmonella strains, normal food preparation techniques — like using a sponge to clean up spills or rinsing your chicken in the sink — tend to spread the bug around your kitchen, he says. That can 'cross-contaminate' your sink, cutting boards and vegetables.'*
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> *'This CDC report shows that government inspectors and industry need to do more to protect consumers from unsafe chicken,' says Gremillion.*
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> *'Rather than focusing on schemes to boost industry profits — such as eliminating slaughterhouse line speed limits — we should be talking about why the U.S. lags so far behind other countries on issues like addressing salmonella contamination in poultry, and what can be done to avoid some of these illnesses and the havoc they wreak on families.'*

Chicken Is Notoriously Prone to Bacterial Contamination

Over the years, food testing has shown that chicken is particularly prone to contamination with dangerous pathogens, including antibiotic-resistant bacteria. Consumer report testing in 2007 found 80% of whole chicken broilers harbored salmonella and/or campylobacter,[3] two of the leading causes of foodborne illness.

Retesting in 2010 revealed a modest improvement, with two-thirds being contaminated with these disease-causing bacteria. The improvement didn't last long though. Three years later, in 2013, Consumer Reports[4] found potentially harmful bacteria on 97% of the chicken breasts tested, and half of them had at least one type of bacterium that was resistant to three or more antibiotics.

Salmonella contamination is of particular concern, as data suggests multidrug-resistant salmonella has become particularly prevalent. And raw chicken has become a notorious carrier of salmonella, campylobacter, clostridium perfringens and listeria bacteria.[5] Contaminated chicken and turkey also cause the most deaths from food poisoning.[6]

Raw Chicken Should Be Sold With Health Warning

The same state of affairs is reported in other countries. In New Zealand, Michael Baker, a public health researcher and professor at University of Otago, is urging the implementation of a "tobacco-style" warning label on all raw chicken items, informing shoppers about the health risks involved.[7] "It's the most hazardous thing you can take into your kitchen," he says.

Each year, an estimated 30,000 New Zealanders contract foodborne illness, 500 of whom require hospitalization. Half of these illnesses are related to the handling and consumption of chicken, and this despite the fact that New Zealand boasts some of the toughest regulatory standards in the world.

In recent food tests, 65% of chicken samples obtained from around New Zealand tested positive for campylobacter contamination, some of which were antibiotic resistant, even though the drugs in question are not actually used in the poultry industry. An investigation confirmed the resistance could not have been caused by industry practices, and the cause of the resistance remains unclear.

Vast Majority of Meats Contaminated With Dangerous Bacteria

Poultry is not the only food that can make you sick, though. For a number of years now, tests have revealed meats of all kinds are significant sources of drug-resistant bacteria, with factory farmed meats (whether poultry, pork or beef) having the highest levels of contamination.

According to a 2017 report by the CDC, 22% of antibiotic-resistant illness in humans is linked to consumption of contaminated foods, and tests have shown ground beef from animals raised in concentrated animal feeding operations (CAFOs) is three times more likely to contain antibiotic-resistant bacteria than organic grass fed beef.[8]

This really is no surprise, since overuse of antibiotics in livestock is the primary driver of antibiotic resistance, and CAFOs routinely use antibiotics, whereas organic grass fed standards do not permit their use.[9]

Most recently, an Environmental Working Group (EWG) analysis of food testing done by the Food and Drug Administration (FDA) in 2015 reveals 83% of supermarket meats were contaminated with enterococcus faecalis, i.e., fecal bacteria, and a high percentage had antibiotic-resistant bacteria:[10,11]

- 79% of ground turkey samples were contaminated with drug-resistant enterococcus faecalis, 87% of which were resistant to tetracyclines, used in human medicine to treat bronchitis, pneumonia and UTIs; 73% of the salmonella found on ground turkey was antibiotic-resistant salmonella
- 71% of pork chops were contaminated with drug-resistant enterococcus faecalis, 84% of which were resistant to tetracyclines
- 62% of ground beef samples were contaminated with drug-resistant enterococcus faecalis, 26% of which were resistant to tetracyclines
- 36% of chicken breasts, legs, thighs and wings were contaminated with drug-resistant enterococcus faecalis, 71% of which were resistant to tetracyclines; 1 in 5 strains of salmonella was resistant to amoxicillin, a type of penicillin, which as a class is designated as "critically important" in human medicine. Amoxicillin is the No. 1 antibiotic prescribed to children in the U.S.

Industry Diversion Tactics

The routine use of antibiotics in CAFOs is a major, driving factor behind the emergence of antibiotic-resistant pathogens that are now making our food supply riskier than ever. A recent article in The Guardian[12] highlights tactics used by the drug and CAFO industries to muddy the water and confuse consumers about the health risks associated with agricultural antibiotics.

> *"Pharmaceutical and meat companies are using similar tactics to the cigarette industry, in an attempt to confuse consumers and hold off regulation, despite the fact that the rapidly growing risk of antimicrobial resistance is one of the biggest health risks of our time,"* The Guardian reports.[13]
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> *"In one Facebook ad entitled 'How to survive as a working mom,' a stressed woman has a baby on her lap and a phone under one ear. 'Breathe,' the advert says. 'Pour a glass of wine (if that's your thing). Prepare your family the chicken. Whether the label says 'no antibiotics' or not, the meat and milk you buy is free of harmful residues from antibiotics.'*
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> *The Enough Movement — the 'global community' behind this advert — promises to tell you the truth about food. But it's a PR campaign funded by Elanco, a multinational animal drugs company that sells antibiotics for use on livestock."*

It's About Drug-Resistant Pathogens, Not Antibiotic Residues

In a joint investigation, The Guardian and the Bureau of Investigative Journalism concluded Elanco and other organizations with a vested interest in the poultry industry are devising advertising campaigns aimed at downplaying consumer concerns about the use of antibiotics. The ruse used by these players is that food safety inspection testing ensures there are no traces of antibiotics left in the food by the time it hits the store shelf.

But that's NOT the real issue. The problem is that antibiotics promote the development of drug-resistant bacteria in the animals, and those bacteria are still on the meat when you buy it. That's the primary danger — not that the meat might contain trace amounts of antibiotics. Ultimately, it's the antibiotic-resistant bacteria that kill.

According to predictions, 10 million people worldwide will die from antibiotic-resistant diseases by 2050 lest swift action is taken to curb resistance — and that necessitates the elimination of unnecessary agricultural use of antibiotics.

A 2016 report[14] commissioned by the U.K. government found that of 139 studies, 72% confirmed suspicions that consumption of antibiotic-treated foods is in fact causing antibiotic-resistant disease in humans. Only 5% failed to confirm such a link.

As noted by The Guardian, by "shifting the debate from resistance to residues," the Enough Movement aims to confuse consumers about this vital public health concern. Sarah Sorscher, deputy director of regulatory affairs at the Center for Science in the Public Interest also commented on the ad campaign:[15]

> *"Ads like this are patronizing. Industry should be looking for ways to address valid consumer concerns. Instead, they're trying to brush us off like we're a bunch of hysterical women who just need a pat on the head and a good glass of wine to calm down."*

Poultry Inspectors Sickened by Chicken Disinfectant

Pathogens that can make you seriously ill, or worse, are not the only thing making chicken potentially hazardous. A recent article in The Intercept[16] recounts the story of Jessica Robertson, a former poultry plant inspector in Sanpete County, Utah, who became chronically ill from exposure to chemicals used to coat raw chicken.

Robertson is now speaking out in defense of other workers exposed to hazardous chemicals on the job. She began working as a part-time inspector at a turkey processing plant in 2002. As of 2008, she was working as a full-time consumer safety inspector for the U.S. Department of Agriculture (USDA).

Then, in 2015, strange health problems began to surface. Her eyes would itch, and she'd have shortness of breath, frequent coughing and nose bleeds. Halfway through each workweek, she'd start losing her voice.

Another USDA inspector, Tina McClellan, told Robertson she struggled with frequent headaches, nausea and respiratory issues. Line workers at the processing plant were also becoming ill.

> *"Robertson believes that the source of the ailments were chemicals used at the plant — including a little-known chemical called peracetic acid, or PAA,"* The Intercept reports.[17] *"A colorless bleaching agent with a faintly vinegary odor, PAA has been used to sterilize medical instruments in hospitals.*
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> *In recent years, escalating quantities of it have also been used to remove bacteria from the carcasses of chickens and turkeys, despite concerns from industry watchdogs that breathing it may put workers at risk, especially when combined with chlorine and other chemical treatments."*

Peracetic Acid Deteriorates Health by Accumulating in Organs

According to the Material Safety Data Sheet on PAA,[18] the chemical "may be toxic to blood, kidneys, lungs, liver, mucous membranes, heart, cardiovascular system, upper respiratory tract, skin, eyes, central nervous system, teeth. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure ... may produce general deterioration of health by an accumulation in one or many human organs."

Robertson's case isn't the first time the dangers of chemical exposure in poultry plants have come to light. In 2011, a New York state poultry plant inspector died from sudden uncontrolled bleeding in his lungs.

Both chlorine and PAA were used at the plant where he worked. Crazy enough, neither the FDA nor the USDA take the health of plant workers into account when assessing the safety of chemicals used in meat.

There's also no permissible exposure limit set for PAA by the Occupational Safety and Health Administration. Robertson and McClellan began filing hazardous conditions reports, which were forwarded to the USDA district office in Denver. Alas, no significant changes were implemented to protect workers.

May 2016, Robertson ended up being rushed to the emergency room, unable to breathe. Eventually, Roberson and McClellan were both diagnosed with work-related asthma, triggered by chemical exposure. As noted in the featured article:

> *"Their story is a reminder that, even as consumers have grown increasingly vigilant about buying meat that is naturally and humanely processed — a concern not lost on Norbest, which markets its turkey as 'ranch raised' with 'no added hormones or steroids' — the inhumane conditions endured by the people who work in America's slaughterhouses remain hidden from view."*

Toxic Chemicals, Bacteria Make Raw Chicken Questionable Food

As noted by The Intercept, that same chemical, PAA, is on the chicken you buy — if bought in the U.S., that is. If you live in the EU, you will be relieved to learn these kinds of chemical baths are not permitted for chicken. Again, the chicken carcass is doused with PAA in an effort to reduce the bacterial load, yet chicken is still responsible for the greatest number of illnesses.

Disturbingly, but not surprisingly, the FDA also has not conducted any kind of testing to ascertain whether chicken meat sprayed with PAA is safe to eat. The agency is simply relying on assurances from the industry. Surveys suggest "the overwhelming majority of European consumers don't want to eat poultry bathed in chemicals."

Do American consumers care? I bet they would were they informed. Now you know, and can make a more educated decision for yourself and your family. I for one cannot with a clear conscience recommend buying raw chicken anymore. If you do opt for chicken, make sure it's a) organic and free-range, and b) cooked.

Strategies to Protect Yourself, Limit Drug-Resistant Bacteria

Aside from avoiding bringing raw chicken into your home, you can also limit your risk of antibiotic-resistant disease by focusing on:

Infection prevention, with a focus on strengthening your immune system naturally. Avoiding sugars, processed foods and grains, promoting stress reduction and optimizing your sleep and vitamin D level are foundational for this. Adding in traditionally fermented and cultured foods is also important, as this will help optimize your microbiome.

Limiting your use of antibiotics — Any time your doctor prescribes an antibiotic, ask if it's absolutely necessary, and keep in mind that antibiotics do not work for viral infections. For example, antibiotics are typically unnecessary for most ear infections, and they do not work on the common cold or flu, both of which are caused by viruses.

Avoiding antibiotics in food by purchasing organic or biodynamic grass fed meats and animal products.

Avoiding antibacterial household products such as antibacterial soaps, hand sanitizers and wipes, as these promote antibiotic resistance by allowing the strongest bacteria to survive and thrive in your home.

Properly washing your hands with warm water and plain soap, to prevent the spread of bacteria — Be particularly mindful of washing your hands and kitchen surfaces after handling raw meats, as about half of all meat sold in American grocery stores is likely to be contaminated with pathogenic bacteria. Avoid antibiotic soaps that typically have dangerous chemicals like triclosan.

Commonsense precautions in the kitchen — Kitchens are notorious breeding grounds for disease-causing bacteria, courtesy of contaminated meat products,

including antibiotic-resistant strains of E-coli. To avoid cross-contamination between foods in your kitchen, adhere to the following recommendations:

- Use a designated cutting board, preferably wood, not plastic, for raw meat and poultry, and never use this board for other food preparation, such as cutting up vegetables. Color coding your cutting boards is a simple way to distinguish between them
- To sanitize your cutting board, use hot water and detergent. Simply wiping it off with a rag will not destroy the bacteria
- For an inexpensive, safe and effective kitchen counter and cutting board sanitizer, use 3% hydrogen peroxide and vinegar. Keep each liquid in a separate spray bottle, and then spray the surface with one, followed by the other, and wipe off
- **Coconut oil** can also be used to clean, treat and sanitize your wooden cutting boards. It's loaded with lauric acid that has potent antimicrobial actions. The fats will also help condition the wood

Sources and References

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