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Q&A APRIL 4, 2006

Frequently asked questions on *Playing Chicken: Avoiding Arsenic in Your Meat*

By David Wallinga, M.D.

Q. What did you test?

A. We tested the chicken meat people most commonly eat—like breast meat, legs and thighs, as well as chicken strips and sandwiches from fast food restaurants. From Minnesota and California supermarkets we bought 151 packages of raw chicken from some of the nation’s largest chicken producing companies, along with premium chicken products including organic and kosher. We also bought and tested 90 orders of chicken products from fast food restaurants including McDonald’s, Wendy’s, Arby’s, Hardee’s, Jack in the Box, Carl’s Jr., Subway, Kentucky Fried Chicken, Church’s and Popeyes. Those samples were then sent to West Coast Analytical Service, Inc., an independent commercial analytical chemistry laboratory in California.

Q. Why do this testing?

A. The U.S. Department of Agriculture (USDA) had not tested for arsenic in the chicken meat that Americans commonly eat. USDA typically tests for arsenic only in chicken livers. USDA scientists, using the agency’s own data, have published scientific articles warning that average arsenic levels in chicken meat may be higher than previously thought. Before this report, there had been little if any actual data on how much arsenic is in chicken meat, besides liver, in the U.S.

Q. What did you find?

A. We found arsenic in most (55 percent) of the uncooked chicken products purchased from supermarkets, and in all of the chicken purchased in fast food restaurants. Arsenic was more than twice as prevalent in conventional brands of supermarket chicken as in certified organic and other “premium” brands.

Q. What does this mean for consumers?

A. We found a lot of supermarket chicken (45 percent of all products) with no detectable arsenic. The good news is that with smart choices, consumers should be able to limit or eliminate their intake of arsenic in chicken. One reasonable strategy is to buy certified organic chicken, or to buy chicken from other premium labels that can demonstrate no routine use of arsenic. Admittedly, the latter can be challenging. Use of arsenic is not prohibited for chicken labeled as kosher or “all natural” or “free range.” With the lack of any government testing, perhaps the best way to find chicken producers who use no arsenic in their chicken feed is to ask them. By using the online Eat Well Guide (eatwellguide.org) you can locate by zip code nearby chicken producers claiming to raise birds without antibiotics or other artificial feed additives.

Q. How does arsenic get into chicken meat?

A. Chicken producers intentionally add arsenic compounds to chicken feed on a routine basis. At least 70 percent of young chickens produced in the U.S. receive arsenic in their feed at some point during their six-week lifespan, according to estimates. Some of that arsenic makes its way into the meat. Because our testing found little or no arsenic in chicken from producers claiming not to use arsenic—such as certified organic producers—it strongly suggests that arsenic feed additives are a major, if not the only, source of arsenic in raw chicken.

Q. How easy is it to find chicken without arsenic?

A. We found a lot of supermarket chicken that carried no detectable arsenic. Some was from premium brands, which may cost more. But in our limited testing, none of the chicken breasts from Tyson and Foster Farms—the largest and eighth largest American producers respectively—had detectable arsenic. And the raw chicken thighs from those brands on average had arsenic just above detectable levels. Buying chicken directly from farmers at farmers' markets or via the online Eat Well Guide (eatwellguide.org) is easy and can also save you money. If we stopped allowing any arsenic in chicken feed, as in Europe, all available chicken likely would have lower or zero levels of arsenic.

Q. What did you find out about arsenic in fast food chicken?

A. Again, there seems to be good news. Though we found some arsenic in all of our samples, there was enormous variation in the average levels of arsenic found among different brands. Of course, we only tested 90 orders of fast food chicken, including sandwiches, nuggets, strips or pieces of breast or thigh meat. But some of the brands we tested, on average, had as much as 20-fold higher levels of arsenic in their products than did other companies. If this limited testing is representative, there likely is much that fast food restaurants can do to limit their customers' intake of arsenic.

Q. The levels you found were within government standards—why should we be concerned?

A. It's true that USDA testing has almost always found arsenic residues in liver to be under the legal standard of 2,000 parts per billion. But we know much more about arsenic in poultry today than we did when the government set its arsenic standard. First, arsenic is much more common in the chicken meat that people actually eat than previously thought. Arsenic causes cancer and contributes to other diseases, including heart disease, diabetes and declines in intellectual function. Even low exposures to this type of serious toxin are generally presumed to be risky.

Second, the toxicity of arsenic found in chicken is higher than was previously understood. If there is no good reason to use arsenic in chicken feed, why allow it? In Europe, the use of arsenic in animal feeds is not approved. That's because Europe's food safety experts decided they lacked the science to be able to assure consumers that eating any arsenic residues in meat would be "safe."

Q. Are your test results representative of the arsenic I'd find in the chicken I might buy today?

A. Our samples represent a snapshot in time of the total arsenic found in just a few samples—generally, five packages or orders of each—of select chicken products. This is a limited look. But we're confident that these few samples still provide useful information. They show arsenic is widespread in chicken, for example.

We cannot know for sure how well this snapshot reflects the arsenic levels in other packages of the same brand bought in other states or at other points in time, for example. As long as it's legal to put arsenic into chicken feed, Americans deserve more comprehensive testing of chicken meat (not just liver) showing brand-by-brand, how much arsenic is in it.

Q. What happens to all of that arsenic put into chicken feed?

A. Aside from that ending up in meat, much of the arsenic in chicken feed will pollute the environment we live in. We estimate from 1.7 to 2.2 million pounds of a single arsenic feed additive, roxarsone, are given each year to chickens. Arsenic therefore also contaminates much of the 26-55 billion pounds of litter or waste generated each year by the U.S. boiler chicken industry, likely also contaminating the communities where the waste is generated or dispersed. Because chicken production is so concentrated geographically, arsenic-contaminated chicken waste creates a huge disposal problem. One way or another, putting arsenic in chicken feed means exposing more people to more arsenic.

Q. Why do chicken producers routinely put arsenic into feed?

A. Chicken producers can use any particular feed additive according to restrictions that the Food and Drug Administration mandates on the product label. The problem is that these label restrictions are very non-specific. FDA-approved labels for most of the arsenic products added to chicken feed, for example, allow them to be used “for increased rate of weight gain, improved feed efficiency, and improved pigmentation.” Many of the same products are also labeled for use in preventing a parasitic infection, called coccidiosis, in flocks. Broad and non-specific labeling like this means there really is no way to discern whether arsenic is being used to color chicken meat, to make birds grow faster, or to try and prevent disease in flocks of 30,000 birds being raised in close confinement, indoors.

Our first question when it comes to intentional uses of poisons like arsenic should be: “Is this use really necessary?” Many chicken producers raise birds without arsenic, including European chicken producers as well as USDA-certified organic producers here in the U.S. We also detected no arsenic in 45 percent of our raw chicken samples. Based on our limited sampling, some of the largest producers of chicken in America likely have taken steps already to reduce or avoid the routine use of arsenic.

Q. How toxic is the arsenic added to chicken feed?

A. Arsenic feed additives, like roxarsone, are in an organic form. Conventional wisdom had it that organic arsenics were not very toxic at all. But science evolves, and as a result we’ve gotten smarter about arsenic. First off, organic arsenic in chicken doesn’t stay that way. Strong evidence now suggests that within the chicken roxarsone is converted into the inorganic forms of arsenic thought to date to pose the greatest health risks to humans. In fact, the EPA considers 65 percent of the arsenic in chicken meat to be inorganic arsenic.

Second, the human body, in the process of converting and eliminating arsenic, creates some organic arsenic species more toxic than their inorganic parent compounds. All forms of arsenic alter how cells interpret the genetic instructions they carry, recent science shows.

Typically, arsenic is added to animal feed in combination with other drugs, like antibiotics and anti-parasitic agents. As far as we know, the combined impact on human health of eating chicken meat from the birds eating this feed with chemically-active compounds has not been investigated. ■

This Q&A is based on the findings of the report Playing Chicken: Avoiding Arsenic in Your Meat by David Wallinga, M.D., of the Institute for Agriculture and Trade Policy. The report is available at iatp.org.