



HEALTH AND NUTRITION

Action Alerts
Breaking Medical News
Health Topics
Cancer Resources
Diabetes Resources
Healthy School Lunches
Vegetarian and Vegan Diets
Reports and Surveys
Clinical Research Studies
Health Care Professionals

ETHICAL RESEARCH & EDUCATION

MEDIA CENTER

LEGISLATIVE FOCUS

CLINICAL RESEARCH

FACT SHEETS AND FAQs

MEMBERSHIP

SHOP

STAY CONNECTED

Receive action alerts, breaking medical news, e-newsletters, and special offers via e-mail.

[SIGN UP >](#)

Like us on
facebook

Follow us on
twitter

21-DAY VEGAN KICKSTART

Nutrition CME
Free CME Courses for
Health Care Professionals

THE CANCER PROJECT

Healthy School Lunches
Improving the food served
to children in schools

Nutrition MD
Helping health care providers and
individuals adopt healthier diets.

Nutrition for Kids

Fecal Contamination in Retail Chicken Products

A Report from the Physicians Committee for Responsible Medicine April 2012

Fecal contamination is surprisingly common on chicken products in grocery stores. In this study, scientists with the Physicians Committee for Responsible Medicine tested chicken products sold by 15 grocery store chains in 10 U.S. cities for the presence of feces. A certified, independent analytical testing laboratory in Chicago, Ill., tested for the presence of *E. coli* as evidence of fecal contamination. Chicken products from every city and every grocery store chain tested positive for fecal contamination. Overall, 48 percent of chicken samples tested positive.

Like

221

Send



© iStock

Fecal Contamination of Chicken Products in 10 U.S. Cities

City	Grocery Store	Chicken Products with Fecal Contamination
Charleston, S.C.	Harris Teeter	33%
	Publix	33%
Chicago, Ill.	Dominick's	33%
	Jewel-Osco	67%
Dallas, Texas	Albertsons	33%
	Kroger	100%
Denver, Colo.	Albertsons	50%
	Safeway	67%
Houston, Texas	H-E-B	17%
	Randalls	17%
Miami, Fla.	Publix	50%
	Winn-Dixie	83%
Milwaukee, Wis.	Pic 'n Save	17%
	Piggly Wiggly	50%
Phoenix, Ariz.	Fry's	50%
	Safeway*	0%
San Diego, Calif.	Albertsons	17%
	Ralphs	83%
Washington, D.C.	Giant	83%
	Safeway	67%

* Indicates a store where retesting was performed; retesting found that 60 percent of the samples were positive for fecal contamination.

Background

In the conditions of typical poultry farms and transportation, chickens defecate on themselves and one another and commonly stand in feces. Feces are also present in intestines at the time of slaughter. As a result,

Feces are also present in chickens at the time of slaughter. As a result, feces are common in poultry farms, transport vehicles, and slaughter plants.

A typical large processing plant may slaughter more than a million birds per week.¹ There, chickens are stunned, killed, bled, and sent through scalding tanks, which help remove feathers but also act as reservoirs that transfer feces from one carcass to another. After scalding, feathers and intestines are mechanically removed. Intestinal contents can spill onto machinery and contaminate the muscles and organs of the chicken and those processed afterward.

The eviscerated carcasses are then rinsed with chlorinated water and checked for visible fecal matter. However, some slaughter lines process as many as 140 birds per minute, allowing inspectors minimal time to examine each carcass for visible feces.²

After the visual check for fecal matter, carcasses are typically chilled in ice water, effectively a communal bath in which feces spread from bird to bird. After chilling, a chicken may be cut up, allowing for further fecal spread from carcass to implements. The remains are then packaged, carrying fecal bacteria to consumers. Feces consist of undigested food, dead cells, hepatically excreted compounds, parasites, and live bacteria, which may be benign or pathogenic. Feces on retail products are of concern to consumers for both esthetic and health reasons, but fecal traces are typically not visible.

To assess the efficacy of procedures to limit fecal contamination, the U.S. Department of Agriculture requires poultry slaughter and processing establishments to test for levels of *E. coli*, a bacterium that is a highly specific indicator of fecal contamination. According to the USDA's *Guidelines for Escherichia coli Testing for Process Control Verification in Poultry Slaughter Establishments*, facilities must test one chicken per 22,000 slaughtered or perform at least one test per week.³

This study assessed the frequency of fecal contamination on retail chicken products in 10 U.S. cities.

Methods

PCRM purchased chicken products—whole chickens, breasts, drumsticks, thighs, or wings—from stores in 10 cities in nine states. Twelve samples of chicken were initially purchased in each city for a total of 120 samples.

The grocery store chains sampled were Albertsons, Dominick's, Fry's, Giant, Harris Teeter, H-E-B, Jewel-Osco, Kroger, Pic 'n Save, Piggly Wiggly, Publix, Ralphs, Randalls, Safeway, and Winn-Dixie.

Brands tested included Perdue, Pilgrim's, Sanderson Farms, Covington Farms, Eating Right, Foster Farms, Gerber's Poultry, Harris Teeter, Harvestland, H-E-B, Hill Country Fare, Murray's, Nature's Promise, Open Nature, Smart Chicken, Piggly Wiggly, Publix, Red Bird Farms, Roundy's, Safeway, Safeway O Organics, Springer Mountain Farms, Super G, Supervalu, and Wild Harvest Natural.

The products were purchased, and store packaging was left undisturbed. The packages were placed unopened in coolers with ice packs and immediately shipped overnight to EMSL Analytical Inc., a certified, independent analytical testing laboratory in Chicago, Ill. Using detection methods standard for food testing, EMSL tested for the presence of *E.*

coli.⁴ As noted above, *E. coli* is a specific indicator of fecal contamination and is used by slaughter and processing plants to check for fecal contamination of food products and water, following USDA requirements.

Results

Testing revealed that 48 percent of all chicken samples tested positive for feces. Among skinless breasts, 49 percent of products were contaminated, compared with 28 percent of breasts with skin intact, indicating that skin removal did not reduce fecal contamination in the samples tested.

Of the antibiotic-free chicken samples, 46 percent tested positive for fecal contamination, while 48 percent of conventional samples tested positive.

Of the 20 stores sampled, one (Safeway, Phoenix, Ariz.) had no detectable fecal bacteria in six samples. To determine whether this was an aberrant

result based on sampling, 10 additional samples were purchased and tested by EMSL Analytical Inc. Of these 10 samples, six tested positive for fecal contamination, suggesting previous findings were the result of sampling, rather than to an absence of feces in the store.

Discussion

The results show that feces are common on chicken products. Although variability was evident from store to store, it appears that consumers bring feces into their kitchens on roughly half of the retail chicken products

purchased, regardless of the region or brand. This variability appears to be due to sampling, rather than to differences in procedures followed by different stores or brands.

Retail chicken products are rarely tested for feces. Instead, testing is commonly performed during slaughter and processing to assess the effectiveness of practices intended to limit fecal spread. A 2009 USDA study found that 87 percent of chicken carcasses tested positive for *E. coli* after chilling and just prior to packaging.⁵

The current findings suggest that skinless chicken is at least as likely as to be contaminated as chicken with skin left intact. Likewise, antibiotic-free products appear to be as likely as “conventional” chicken to be contaminated. Nearly 50 percent of both types of products tested positive for fecal traces.

Conclusion

Overall, roughly half of the chicken samples purchased in supermarkets were contaminated with feces, which originate in chickens’ intestines, but are easily spread during rearing, transport, slaughter, and processing. In turn, feces carried on chicken products into the home are easily transferred to countertops, cutting boards, utensils, refrigerators, and family members.

While consumers are counseled by the USDA to apply high cooking heat to poultry products, this treatment simply cooks the feces along with the muscle tissue and does nothing to remove it from the ingested product.

In summary, feces are present on approximately half of chicken products at retail stores in locations across the United States.

References

1. World Poultry. Broiler welfare symposium: The balance between producers’ and consumers’ standards. World Poultry. 2009;25(12). Available at: <http://www.worldpoultry.net/chickens/management/welfare/broiler-welfare-symposium-the-balance-between-producers%E2%80%99-and-consumers%E2%80%99-standards-7665.html>. Accessed Feb 12, 2012.
2. Bilgili SF. Recent advances in electrical stunning. *Poult Sci*. 1999;78(2):282-286.
3. Federal Register Vol. 61, No. 131. United States Department of Agriculture/Food Safety and Inspection Service. *Hum Gene Ther*. 1996;7(15):1923-1926.
4. Lattuada CP, Dillard LH, Rose BE. Examination of Fresh, Refrigerated, and Frozen Prepared Meat, Poultry and Pasteurized Egg products. In: Dey BP, Lattuada CP. Examination of Microbiology Laboratory Guidebook. Vol. 1-2. 3rd ed. Washington, DC. 1998.
5. Altekruse SF, Berrang ME, Marks H, et al. Enumeration of *Escherichia coli* cells on chicken carcasses as a potential measure of microbial process control in a random selection of slaughter establishments in the United States. *Appl Environ Microbiol*. 2009;75(11):3522-3527.

This site does not provide medical or legal advice. This Web site is for informational purposes only.
[Full Disclaimer](#) | [Privacy Policy](#)

Physicians Committee for Responsible Medicine
 5100 Wisconsin Ave., N.W., Ste.400, Washington DC, 20016
 Phone: 202-686-2210 Email: pcrm@pcrm.org