

UPDATED: FDA Investigates Pattern of Contamination in Certain Raw Pet Foods Made by Arrow Reliance Inc., Including Darwin's Natural Pet Products and ZooLogics Pet Food

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The FDA has detected Shiga toxin-producing Escherichia coli (STEC) O128 and Salmonella in samples of raw pet foods manufactured by Arrow Reliance Inc. The samples were collected by the FDA to determine whether the firm had addressed an ongoing pattern of pathogenic contamination in Darwin's and ZooLogics raw pet foods. The firm has recalled the affected products, but has not yet issued public notification.

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- The FDA is alerting pet owners to a history of five recalls of and multiple complaints associated with Darwin's Natural Selections and Darwin's ZooLogics pet foods, manufactured by Arrow

Reliance Inc., dba Darwin's Natural Pet Products, over the period from October 17, 2016 to March 26, 2018. In each instance, the company recalled these products after being alerted to positive findings of Shiga toxin-producing *E. coli* O128, *Salmonella* and/or *Listeria monocytogenes* in samples of their raw pet food products.

- In its most recent recall, on March 26, 2018, Arrow Reliance/Darwin's Natural recalled ZooLogics Chicken with Vegetable Meals for Dogs (Lot #43887 and 44037), ZooLogics Turkey with Vegetable Meals for Dogs (Lot #44127), and ZooLogics Duck with Organic Vegetables Meals for Dogs (Lot # 44147) after FDA found that the products tested positive for *Salmonella* and/or Shiga toxin-producing *E. coli*. These products have the potential to cause illness and death in humans and animals. The company states that it only sells its products online through direct-to-consumer sales.
- Although there are no reports of illnesses currently identified in connection with the most recent recall on March 26, 2018, the FDA has investigated six complaints of illness and/or death in animals that have eaten previously recalled Darwin's Natural Selections and/or Darwin's ZooLogics products.
- Arrow Reliance/Darwin's Natural has notified its customers directly of the recalls, but has so far not issued any public notification announcing this or any of the previous recalls.
- This issue is of particular public health importance because *Salmonella* and *Listeria monocytogenes* can make both people and animals sick, and Shiga toxin-producing *E. coli* O128 can cause serious illness in humans.

What is the Problem and What is Being Done About It?

As part of an ongoing investigation into complaints associated with products manufactured by Arrow Reliance/Darwin's Natural of Tukwila, WA, the FDA announced on February 13, 2018, that samples of Darwin's Natural Pet Products raw pet foods tested positive for *Salmonella*. These raw pet foods included ZooLogics Duck with Vegetable Meals for Dogs Lot #41957 and ZooLogics Chicken with Vegetable Meals for Dogs Lot #41567.

The February 2018 recall was triggered by a complaint of an adult dog that had recurring diarrhea over a nine-month period. The dog tested positive for *Salmonella* from initial testing by the veterinarian and by follow-up testing by the FDA's **Veterinary Laboratory Investigation and Response Network (Vet-LIRN)**. ([//AnimalVeterinary/ScienceResearch/ucm247334.htm](http://AnimalVeterinary/ScienceResearch/ucm247334.htm)) The Darwin's Natural raw pet food that the dog had been fed was also positive for *Salmonella*.

Arrow Reliance/Darwin's Natural was aware of the dog's illness and the positive results and initiated a recall on February 10, 2018 by directly notifying its customers via email. The firm did not issue a public recall notice.

On March 26, 2018, Arrow Reliance/Darwin's Natural recalled ZooLogics Chicken with Vegetable Meals for Dogs (Lot #43887 and 44037), ZooLogics Turkey with Vegetable Meals for Dogs (Lot #44127), and ZooLogics Duck with Organic Vegetables meals for Dogs (Lot #44147) after FDA testing indicated that the products contained *Salmonella* and/or Shiga toxin-producing *E. coli*. These products have the potential to cause illness and death in humans and animals.

Since October 2016, Arrow Reliance/Darwin's Natural has initiated five recalls and had six reported complaints (some referring to more than one animal) associated with their raw pet food products, including the death of one kitten from a severe systemic *Salmonella* infection. The

Salmonella isolated from the kitten was analyzed using whole genome sequencing and found to be indistinguishable from the *Salmonella* isolated from a closed package from the same lot of Darwin's Natural cat food that the kitten ate.

In addition to reports of illnesses associated with *Salmonella* contamination in the products, the FDA is aware of complaints of at least three animals who were reportedly injured by bone shards in the Darwin's Natural raw pet food products.

Since 2016, Arrow Reliance/Darwin's Natural has recalled the following raw pet food products:

- ZooLogics Turkey Meals for Dogs, due to *Salmonella* and Shiga toxin-producing *E. coli* 0128 Lot #44127, manufacture date 02/04/18, in 2 lb. flexible film packages, recalled on 3/26/2018
- Natural Selections Chicken with Organic Vegetables Meals for Dogs, due to *Salmonella* Lot #43887, manufacture date 1/30/18, in 2 lb. flexible film packages, recalled on 3/26/2018
- ZooLogics Chicken with Vegetables Meals for Dogs, due to *Salmonella* Lot #4403743887, manufacture date 2/7/18, in 2 lb. flexible film packages, recalled on 3/26/2018
- Natural Selections Duck with Organic Vegetables Meals for Dogs, due to *Salmonella* Lot #44147, manufacture date 2/5/18, in 2 lb. flexible film packages, recalled on 3/26/2018
- ZooLogics Duck with Vegetable Meals for Dogs, due to *Salmonella* Lot #41957, manufacture date 11/16/17, in 2 lb. flexible film packages, recalled on 2/10/18
- ZooLogics Chicken with Vegetable Meals for Dogs, due to *Salmonella* Lot #41567, manufacture date 11/2/17, in 2 lb. flexible film packages, recalled on 2/10/18
- **Natural Selections Duck with Organic Vegetables Meals for dogs, due to (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=160101>) *Salmonella* (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=160101>)**
Lot #40487, manufacture date 9/29/17, in 2 lb. flexible film packages, recalled on 12/04/17
- **Natural Selections Chicken with Organic Vegetables Meals for Dogs, due to *Salmonella* and *Listeria Monocytogenes* (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=160100>)**
Lot #40727, manufacture date 9/26/17, in 2 lb. flexible film packages, recalled on 12/04/17
- **Natural Selections Turkey with Organic Vegetables Meals for Dogs, due to *Salmonella* (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=160102>)**
Lot #39937, manufacture date 8/24/17 and Lot #40507, manufacture date 9/20/17, in 2 lb. flexible film packages, recalled on 12/04/17
- **Natural Selections Duck Meals for Cats, due to potential contamination with *Salmonella* (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=158642>)**
Lot #38277, manufacture date 6/1/17, in 2 lb. flexible film packages, recalled on 09/08/17
- **Natural Selections Beef with Organic Vegetables Meals for Dogs, due *Listeria Monocytogenes* (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=150428>)**
Lot #3146070, manufacture date 7/21/16, in 2 lb. flexible film packages, recalled on 10/17/16
- **Natural Selections Turkey with Organic Vegetables Meals for Dogs, due to *Listeria Monocytogenes* (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=150427>)**
Lot #3142070, manufacture date 7/20/16, in 2 lb. flexible film packages, recalled on 10/17/16

- **ZooLogics Turkey with Vegetable Meals for Dogs, due to *Listeria monocytogenes* (<https://www.accessdata.fda.gov/scripts/ires/index.cfm?Product=150429>)**

Lot #3155070, manufacture date 7/25/16, in 2 lb. flexible film packages, recalled on 10/17/16

The recalled lot codes and the manufacturing dates are printed directly on the flexible film packages.

Arrow Reliance/Darwin's Natural initiated each recall of the product lots by notifying customers directly via email. The company states that the raw pet foods are only sold online through direct-to-consumer sales.

This contaminated raw pet food is of particular public health importance because of the potential hazard to both human and animal health. Pets can get sick from *Salmonella*, *Listeria monocytogenes*, and *E. coli* O128, but may also be carriers of the bacteria and can infect humans. Pets do not have to be apparently ill to be able to pass *Salmonella*, *Listeria monocytogenes*, and *E. coli* O128 onto their human companions.

Raw pet food is more likely than other types of pet food to contain *Salmonella*, *Listeria monocytogenes*, and *E. coli* O128. Pet owners who choose to feed raw pet food **should be aware of the risks ([/ForConsumers/ConsumerUpdates/ucm403350.htm](#))** associated with these products.

The FDA has a **zero-tolerance policy (<http://wayback.archive-it.org/7993/20170112123601/http://www.fda.gov/AnimalVeterinary/NewsEvents/CVMUpdates/ucm360834.htm>)** for *Salmonella* or other pathogenic bacteria in all pet food, meaning the agency will take action, as appropriate, against any pet food found to be contaminated with the harmful bacteria.

What are the Symptoms of *Salmonella* Infection (Salmonellosis)?

People infected with *Salmonella* can develop diarrhea, fever and abdominal cramps. The illness usually lasts 4 to 7 days, and most people recover without treatment.

Pets do not always display symptoms when infected with *Salmonella*, but signs can include vomiting, diarrhea (which may be bloody), fever, loss of appetite and/or decreased activity level. Pets can pass *Salmonella* to humans without showing any signs of the illness themselves.

How Soon After Exposure do Salmonellosis Symptoms Appear?

Most people infected with *Salmonella* develop diarrhea, fever, and abdominal cramps 6 to 72 hours after infection.

Although not all pets display symptoms when infected, those who do may have symptoms within 72 hours of infection. Pets do not need to display symptoms to be able to pass *Salmonella* onto their human companions. Once *Salmonella* gets established in the pet's gastrointestinal tract, the animal can shed the bacteria when it has a bowel movement, and the contamination will continue to spread.

What are the Complications of Salmonellosis?

In some people, the diarrhea may be so severe that they need to be hospitalized. In these patients, the *Salmonella* infection may spread from the intestines to the blood stream and then to other body sites and can cause death unless the person is treated promptly with antibiotics.

Who is at Risk of Salmonellosis?

Young children are particularly at risk for salmonellosis if they handle or ingest contaminated pet food or unwashed bowls used to feed the pet food. Very young children may also be exposed by crawling on or otherwise touching contaminated surfaces and put their hands or other objects in their mouth (without handwashing), or have oral contact with an animal that has consumed contaminated pet food, or with that animal's feces. Once *Salmonella* gets established in the pet's gastrointestinal tract, the animal can shed the bacteria when it has a bowel movement, and the contamination will continue to spread.

Others at increased risk of serious infection are the elderly, pregnant women, and people with weakened immune systems.

As with humans, dogs and cats who are very young, very old, or have health conditions are particularly at risk for developing salmonellosis.

What are the Symptoms of *Listeria Monocytogenes* Infection (Listeriosis)?

Gastrointestinal symptoms including diarrhea, fever, and muscle aches are symptoms of infection with *Listeria monocytogenes*.

Listeriosis is not common in pets, and when infected, typical symptoms include diarrhea and vomiting.

Pets can pass *Listeria monocytogenes* to humans without showing any signs of the illness themselves.

How Soon After Exposure do Listeriosis Symptoms Appear?

Gastroenteritis caused by *Listeria monocytogenes* has a relatively short incubation period, from a few hours to 2 or 3 days. The severe, invasive form of the illness can have a very long incubation period, estimated to vary from 3 days to 3 months.

Although not all pets display symptoms when infected, those who do may have symptoms within a matter of a few hours, but possibly weeks after infection. Pets do not need to display symptoms to be able to pass *Listeria monocytogenes* onto their human companions. Once *Listeria monocytogenes* gets established in the pet's gastrointestinal tract, the animal can shed the bacteria when it has a bowel movement, and the contamination will continue to spread.

What are the Complications of Listeriosis?

Listeriosis can be fatal, especially in certain high-risk groups. In addition, when *Listeria monocytogenes* infects a woman during pregnancy, it can cause miscarriage, stillbirth, premature labor, and serious illness or death in newborns.

In severe cases of listeriosis in pets, symptoms include fever, muscular and respiratory signs, abortion, and death.

Who is at Risk of Listeriosis?

High-risk groups include the elderly, people with weakened immune systems and certain chronic medical conditions (such as cancer), and pregnant women.

Very young children are at risk if exposed to *Listeria monocytogenes* by crawling on or otherwise touching contaminated surfaces and put their hands or other objects in their mouth (without handwashing), or have oral contact with an animal that has consumed contaminated pet food, or with that animal's feces. Once *Listeria monocytogenes* gets established in the pet's gastrointestinal tract, the animal can shed the bacteria when it has a bowel movement, and the contamination will continue to spread.

Others at increased risk of serious infection are the elderly, pregnant women, and people with weakened immune systems.

As with humans, dogs and cats who are very young, very old, or have health conditions are at an increased risk for developing listeriosis.

What are the symptoms of *E. coli* O128 infection?

Most people infected with *E. coli* O128 can develop nausea or vomiting, diarrhea (often bloody) and abdominal cramps. Most people recover within a week.

Some illnesses last longer and can be more severe, resulting in a type of kidney failure called hemolytic uremic syndrome (HUS). HUS can occur in people of any age, but is most common in young children under 5 years, older adults, and people with weakened immune systems.

Symptoms of HUS can include fever, abdominal pain, pale skin tone, fatigue and irritability, small, unexplained bruises or bleeding from the nose and mouth, and decreased urination. The condition can lead to serious kidney damage and death.

People who experience these symptoms should seek emergency medical care immediately.

Currently, there is no evidence that *E. coli* O128 causes illness in pets, but pets can serve as carriers and pass *E. coli* O128 to humans.

How Soon After Exposure do *E. coli* O128 infection symptoms appear?

People usually get sick from *E. coli* O128 about 2-8 days (average of 3-4 days) after exposure to the contaminated product.

Pets do not need to display symptoms to be able to pass *E. coli* O128 onto their human companions. Once *E. coli* O128 gets established in the pet's gastrointestinal tract, the animal can shed the bacteria when it has a bowel movement, and the contamination will continue to spread.

What are the Complications of *E. coli* O128 infection?

Severe cases of *E. coli* O128 can result in hemolytic uremic syndrome (HUS), a type of kidney failure. The condition can lead to serious kidney damage and death.

Currently, there is no evidence that *E. coli* O128 causes illness in pets.

Who is at Risk for *E. coli* O128?

People of any age can become infected and this infection can result in hemolytic uremic syndrome (HUS). But young children, the elderly, and people with weak immune systems are more likely than others to develop severe illness and HUS.

What Do Consumers Need To Do?

Consumers should not feed their pets recalled lots of raw pet food manufactured by Arrow Reliance Inc. Consumers who purchased this raw pet food should throw it away. People who think they might have become ill or their pets may be ill from exposure to contaminated raw pet food should talk to their health care providers or veterinarians.

Consumers who had this product in their homes should **clean their refrigerator (<https://www.cdc.gov/foodsafety/communication/clean-refrigerator-steps.html>)** and clean and disinfect all bowls, utensils, food prep surfaces, pet bedding, toys, floors, and any other surfaces that the food or pet may have had contact with. Because animals can shed the bacteria when they have bowel movements, it's particularly important to clean up the animal's feces in yards or parks where people or other animals may become exposed.

Pet owners who opt to feed their pets a raw diet should consult FDA's **Tips to Prevent Food-borne Illness from Raw Pet Food (</AnimalVeterinary/ResourcesforYou/AnimalHealthLiteracy/ucm368730.htm>)**.

Who Should be Contacted?

People who think they might have become ill due to exposure to contaminated raw pet food or the feces of pets that have eaten contaminated raw pet food should talk to their health care providers.

Contact your health care provider if you have diarrhea that lasts for more than three days, or is accompanied by high fever, blood in the stool, or so much vomiting that you cannot keep liquids down and you pass very little urine.

People who think their pets have become ill after consuming contaminated raw pet food should contact their veterinarians. Veterinarians who wish to have dogs tested for *Salmonella* may do so through the **Vet-LIRN Network (</AnimalVeterinary/ScienceResearch/ucm247334.htm>)** if the pet is from a household with a person infected with *Salmonella*.

The FDA encourages consumers to report complaints about this and other pet food products electronically through the **Safety Reporting Portal (<http://www.safetyreporting.hhs.gov/>)** or by calling their state's **FDA Consumer Complaint Coordinators (</Safety/ReportaProblem/ConsumerComplaintCoordinators/default.htm>)**.

The information in this release reflects the FDA's best efforts to communicate what it has learned from the manufacturer and the state and local public health agencies involved in the investigation. The agency will update this page as more information becomes available.

Additional Information

- [FDA's Advice: Know the Risks of Feeding Raw Foods to Your Pets \(/ForConsumers/ConsumerUpdates/ucm403350.htm\)](https://www.fda.gov/oc/ohrt/fda-advice-know-the-risks-of-feeding-raw-foods-to-your-pets)
- [Get the Facts! Raw Pet Food Diets can be Dangerous to You and Your Pet \(/AnimalVeterinary/ResourcesforYou/AnimalHealthLiteracy/ucm373757.htm\)](https://www.avma.org/advocacy-policy/animal-welfare/get-the-facts-raw-pet-food-diets-can-be-dangerous-to-you-and-your-pet)
- [Avoid the Dangers of Raw Pet Food \(/AnimalVeterinary/ResourcesforYou/AnimalHealthLiteracy/ucm368730.htm\)](https://www.avma.org/advocacy-policy/animal-welfare/avoid-the-dangers-of-raw-pet-food)
- [CDC \(https://www.cdc.gov/salmonella/index.html\) *Salmonella* \(https://www.cdc.gov/salmonella/index.html\)](https://www.cdc.gov/salmonella/index.html)
- [CDC *Listeria* \(https://www.cdc.gov/listeria/index.html\)](https://www.cdc.gov/listeria/index.html)
- [CDC Shiga toxin-producing *E. coli* \(https://www.cdc.gov/features/ecoliinfection/index.html\)](https://www.cdc.gov/features/ecoliinfection/index.html)