

# Outbreak of *Salmonella* Infections Linked to Gravel Ridge Farms Shell Eggs - Final Update



## Food Safety Alert

Posted October 25, 2018 at 4:15 PM ET

**CDC, public health and regulatory officials in several states, and the U.S. Food and Drug Administration (FDA) investigated a multistate outbreak of *Salmonella* Enteritidis infections linked to shell eggs from Gravel Ridge Farms.**

### Advice to Consumers, Restaurants, and Retailers

#### At A Glance

- [Reported Cases](#): 44
- [States](#): 11
- Hospitalizations: 12
- Deaths: 0
- Recall: Yes



- On September 8, 2018, Gravel Ridge Farms [recalled](#) cage-free large eggs with use by dates of July 25, 2018 through October 3, 2018 because they might be contaminated with *Salmonella*.
- Contact a healthcare provider if you think you got sick from eating recalled Gravel Ridge Farms shell eggs.

- Consumers and restaurants should always [handle and cook eggs safely](#) to avoid foodborne illness from raw eggs. It is important to handle and prepare all fresh eggs and egg products carefully.
  - Eggs should be cooked until both the yolk and white are firm. Scrambled eggs should not be runny. Egg dishes such as casseroles and quiches should be cooked to an internal temperature of 160°F or hotter.
  - Make sure that foods that contain raw or lightly cooked eggs, such as eggs over easy or hollandaise sauce, are made only with pasteurized eggs. Pasteurization kills disease-causing germs.
  - Wash hands and items that came into contact with raw eggs—including countertops, utensils, dishes, and cutting boards—with soap and water.

## Latest Outbreak Information

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- As of October 25, 2018, this outbreak appears to be over.
- Forty-four people infected with the outbreak strain of *Salmonella* Enteritidis were reported from 11 states.
  - Illnesses started on dates ranging from May 17, 2018 to August 26, 2018.
  - Twelve people have been hospitalized. No deaths have been reported.
- [Epidemiologic, traceback, and laboratory evidence](#) indicated that shell eggs from Gravel Ridge Farms were the likely source of the outbreak.
- On September 8, 2018, Gravel Ridge Farms recalled cage-free large eggs with use by dates of July 25, 2018 through October 3, 2018 because they might have been contaminated with *Salmonella*.

## Symptoms of *Salmonella* Infection

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- Most people infected with *Salmonella* develop diarrhea, fever, and stomach cramps 12 to 72 hours after being exposed to the bacteria.
- The illness usually lasts 4 to 7 days, and most people recover without treatment.
- In some people, the diarrhea may be so severe that the patient needs to be hospitalized. *Salmonella* infection may spread from the intestines to the bloodstream and then to other places in the body.
- Children younger than 5 years, adults older than 65 years, and people with weakened immune systems are more likely to have a severe illness.

## Investigation Details

October 25, 2018

CDC, public health and regulatory officials in several states, and the [U.S. Food and Drug Administration \(FDA\)](#) investigated a multistate outbreak of *Salmonella* Enteritidis infections.

Public health investigators used the [PulseNet](#) system to identify illnesses that were part of this outbreak. PulseNet is the national subtyping network of public health and food regulatory agency laboratories coordinated by CDC. DNA fingerprinting was performed on *Salmonella* bacteria isolated from ill people by using techniques called [pulsed-field gel electrophoresis](#) (PFGE) and [whole genome sequencing](#) (WGS). CDC PulseNet manages a national database of these DNA fingerprints to identify possible outbreaks. WGS gives a more detailed DNA fingerprint than PFGE. WGS performed on bacteria isolated from ill people showed that they were closely related genetically. This means that people in this outbreak were more likely to share a common source of infection.

As of October 24, 2018, 44 people infected with the outbreak strain of *Salmonella* Enteritidis were reported from 11 states. A list of the states and the number of cases in each can be found on the [Map of Reported Cases](#) page.

Illnesses started on dates ranging from [May 17, 2018 to August 26, 2018](#). Ill people ranged in age from one year to 94, with a median age of 32. Sixty percent of ill people were female. Of 37 people with information available, 12 (32%) were hospitalized. No deaths were reported.

WGS analysis did not predict antibiotic resistance in bacteria isolated from 25 ill people and 1 food sample. Testing of three clinical isolates using standard [antibiotic susceptibility testing](#) methods by CDC's [National Antimicrobial Resistance Monitoring System \(NARMS\)](#) laboratory also did not show antibiotic resistance.

## Investigation of the Outbreak

[Epidemiologic, traceback, and laboratory evidence](#) indicated that shell eggs from Gravel Ridge Farms were the likely source of this outbreak.

State and local health officials [interviewed ill people and asked questions](#) about the foods they ate and other exposures in the week before they became ill. Twenty-six (81%) of 32 people interviewed reported eating restaurant dishes made with eggs. This percentage was significantly higher than results from a [survey](#)<sup>[PDF - 787 KB]</sup> of healthy people in which 38% of respondents reported eating any eggs away from home in the week before they were interviewed. These restaurants reported using shell eggs in the dishes eaten by ill people.

FDA and state partners traced the source of the shell eggs supplied to these restaurants. Gravel Ridge Farms in Cullman, Alabama, supplied shell eggs to restaurants where 20 of the 26 ill people ate eggs. Several ill people lived in states where Gravel Ridge Farms shell eggs were not sold, but most traveled to states where they were sold in the week before their illness began.

The outbreak strain of *Salmonella* Enteritidis was identified in environmental samples from Gravel Ridge Farms. Officials in Alabama also collected eggs from the Gravel Ridge Farms facility for testing. The outbreak strain of *Salmonella* Enteritidis was identified in these eggs. WGS results showed that the *Salmonella* bacteria from the environmental samples and from Gravel Ridge Farms eggs were closely related genetically to the *Salmonella* bacteria isolated from ill people. These results provided more evidence that people in this outbreak got sick from eating shell eggs from Gravel Ridge Farms.

On September 8, 2018, Gravel Ridge Farms [recalled](#) cage-free large eggs with use by dates of July 25, 2018 through October 3, 2018 because they might have been contaminated with *Salmonella* bacteria. This outbreak appears to be over.