

E. coli Outbreak Linked to Baby Spinach



Food Safety Alert

Posted January 6, 2022

This outbreak is over. Stay up to date on food recalls and outbreaks to avoid getting sick from eating contaminated food.

Fast Facts

- Illnesses: 15
- Hospitalizations: 4
- Deaths: 0
- [States](#): 10
- Recall: No
- Investigation status: Closed



What You Should Do

Vegetables, including leafy greens, are an important part of a healthy and balanced diet. However, they can sometimes be contaminated with harmful germs.

The safest produce is cooked; the next safest is washed. This is because no washing method can remove all germs.

When eating raw leafy greens:

- **Wash** your hands, utensils, and surfaces before and after preparing leafy greens.
- **Clean** leafy greens before eating or cutting them.
 - Discard outer leaves on whole heads of lettuce and any torn or bruised leaves.
 - Rinse under running water and use your hands to gently rub the surface of the leaves.
 - Dry with a clean cloth or paper towel.
 - If the label on a leafy greens package says “ready-to-eat”, “triple washed”, or “no washing necessary”, you don’t need to wash the greens.
- **Separate** leafy greens from raw meat, poultry, and seafood.
- **Refrigerate** leafy greens within 2 hours. Refrigerate within 1 hour if they have been exposed to temperatures above 90°F (such as a hot car or picnic).

Investigation Details

Posted January 6, 2022

This outbreak is over. Stay up to date on food recalls and outbreaks to avoid getting sick from eating contaminated food.

January 6, 2022

CDC, public health and regulatory officials in several states, and the U.S. Food and Drug Administration (FDA) investigated a multistate outbreak of *E. coli* O157:H7 infections.

Epidemiologic and laboratory data showed that Josie’s Organics prepackaged baby spinach with a “best by” date of October 23, 2021, made people sick.

As of January 6, 2022, this outbreak is over.

Epidemiologic Data

A total of 15 people infected with the outbreak strain of *E. coli* O157:H7 were reported from 10 states. The true number of sick people in this outbreak was likely much higher than the number reported, and this outbreak may not be

limited to the states with known illnesses. This is because many people recover without medical care and are not tested for *E. coli*.

Illnesses started on dates ranging from October 13, 2021, to November 8, 2021. Sick people ranged in age from 1 to 76 years, with a median age of 26, and 80% were female. Of 15 people with information available, 4 were hospitalized and 3 developed a type of kidney failure called hemolytic uremic syndrome (HUS). No deaths were reported.

State and local public health officials interviewed people about the foods they ate in the week before they got sick. Of the 13 people interviewed, a total of 11 (85%) reported eating spinach. This percentage was significantly higher than the 46% of respondents who reported eating spinach in the FoodNet Population Survey—a survey that helps estimate how often people eat various foods. This comparison suggests that people in this outbreak got sick from eating spinach.

Laboratory and Traceback Data

Public health investigators used the PulseNet system to identify illnesses that were part of this outbreak. CDC PulseNet manages a national database of DNA fingerprints of bacteria that cause foodborne illnesses. DNA fingerprinting is performed on bacteria using a method called whole genome sequencing (WGS).

WGS showed that bacteria from sick people's samples were closely related genetically. This suggests that people in this outbreak got sick from the same food.

Officials in Minnesota found the outbreak strain of *E. coli* O157:H7 in a package of leftover Josie's Organics baby spinach collected from a sick person's home.

FDA conducted a traceback investigation for the positive product sample and traced it back to a small number of farms in two different geographic regions. However, investigators did not identify a potential point of contamination.

Whole genome sequencing of bacteria from 15 people's samples predicted resistance to chloramphenicol, streptomycin, sulfisoxazole, tetracycline, and trimethoprim-sulfamethoxazole. Standard antibiotic resistance testing of clinical isolates by CDC's National Antimicrobial Resistance Monitoring System (NARMS) (NARMS) laboratory is currently underway. These findings do not affect treatment

guidance since antibiotics are not recommended for patients with *E. coli* O157:H7 infections

Public Health Actions

On November 15, 2021, CDC advised people not to eat, sell or serve Josie's Organics prepackaged baby spinach with "best by" date of October 23, 2021.

Previous Updates

[December 3, 2021](#)

Epidemiologic and laboratory data show that Josie's Organics prepackaged baby spinach with a "best by" date of October 23, 2021, may be contaminated with *E. coli* and may be making people sick.

Epidemiologic Data

Since the last update on November 15, four more illnesses have been reported. As of December 3, 2021, a total of 14 people infected with the outbreak strain of *E. coli* O157:H7 have been reported from nine states. Illnesses started on dates ranging from October 13, 2021, to October 27, 2021.

Sick people range in age from 2 to 76 years, with a median age of 26, and 79% are female. Of 12 people with information available, 4 have been hospitalized and 3 developed a type of kidney failure called hemolytic uremic syndrome (HUS). No deaths have been reported.

The true number of sick people in an outbreak is likely much higher than the number reported, and the outbreak may not be limited to the states with known illnesses. This is because many people recover without medical care and are not tested for *E. coli*. In addition, recent illnesses may not yet be reported as it usually takes 3 to 4 weeks to determine if a sick person is part of an outbreak.

State and local public health officials are interviewing people about the foods they ate in the week before they got sick. Of the 12 people interviewed, 10 (83%) reported eating spinach in the week before they got sick. This percentage was significantly higher than the 46% of respondents who reported eating spinach in the previous week in the FoodNet Population Survey, a survey that helps estimate how often people eat various foods. This difference suggests that people in this outbreak got sick from eating spinach. Six people reported eating Josie's Organics brand spinach.

Laboratory Data

On November 15, 2021, CDC reported that officials in Minnesota found *E. coli* O157:H7 in a package of leftover Josie's Organics baby spinach collected from a sick person's home. Whole genome sequencing (DNA fingerprinting for bacteria) showed that the *E. coli* O157:H7 in the leftover package of spinach is closely related to bacteria isolated from ill people. This means that the person likely got sick from eating the spinach.

Public Health Actions

CDC is advising people not to eat, sell or serve Josie's Organics prepackaged baby spinach with "best by" date of October 23, 2021.

November 15, 2021

CDC, public health and regulatory officials in several states, and the U.S. Food and Drug Administration (FDA) are collecting different types of data to investigate a multistate outbreak of *E. coli* O157:H7 infections.

Epidemiologic and laboratory data show that Josie's Organics prepackaged baby spinach may be contaminated with *E. coli* and may be making people sick.

Epidemiologic Data

As of November 15, 2021, a total of 10 people infected with the outbreak strain of *E. coli* O157:H7 have been reported from seven states. Illnesses started on dates ranging from October 15, 2021, to October 27, 2021.

Sick people range in age from 2 to 71 years, with a median age of 26, and 70% are female. Of eight people with information available, two have been hospitalized. No deaths have been reported.

The true number of sick people in an outbreak is likely much higher than the number reported, and the outbreak may not be limited to the states with known illnesses. This is because many people recover without medical care and are not tested for *E. coli*. In addition, recent illnesses may not yet be reported as it usually takes 3 to 4 weeks to determine if a sick person is part of an outbreak.

State and local public health officials are interviewing people about the foods they ate in the week before they got sick. Of the six people interviewed, five (83%) reported eating spinach in the week before they got sick.

Laboratory Data

Public health investigators are using the PulseNet system to identify illnesses that may be part of this outbreak. CDC PulseNet manages a national database of DNA fingerprints of bacteria that cause foodborne illnesses. DNA fingerprinting is performed on bacteria using a method called whole genome sequencing (WGS). WGS showed that bacteria from sick people's samples are closely related genetically. This suggests that people in this outbreak got sick from the same food.

Officials in Minnesota found *E. coli* O157:H7 in a package of leftover Josie's Organics baby spinach collected from a sick person's home. The leftover spinach had a "best by" date of October 23, 2021. WGS is underway and results will be reported once available.

Public Health Actions

CDC is advising people not to eat, sell or serve Josie's Organics prepackaged baby spinach with "best by" date of October 23, 2021.