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A Monthly Bulletin on Epidemiology and Public Health Practice in Washington

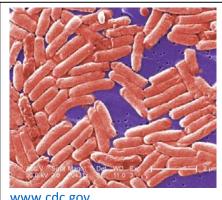
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Salmonella Infections and Kratom

Salmonellosis is one of the more common types of bacterial diarrheal infections in this country. A wide variety of exposures have caused salmonellosis outbreaks. A 2017-2018 multistate outbreak of salmonellosis involved a novel source of exposure.

Salmonellosis

Salmonella are bacteria that cause an infection in people known as salmonellosis. The bacteria are spread when food, water, and the environment are contaminated by the fecal matter of people, or more



www.cdc.gov

commonly animals, infected with Salmonella. Children under five years of age, persons over 65 years of age, and individuals with weakened immune systems are most susceptible to infection, and are more likely to develop a serious illness and complications as a result of salmonellosis.

People who experience salmonellosis typically report symptoms of diarrhea (occasionally

bloody), fever, nausea, and stomach cramps that beginning 12-72 hours after exposure. Occasionally people who become infected with Salmonella do not develop any signs or symptoms of their infections. From the onset of symptoms, illness generally lasts from four to seven days, but it may persist longer. Most people will recover from this disease without any treatment. In more severe cases, Salmonella may spread from the intestines, where it normally establishes itself, to the bloodstream and other organs in the body. When diarrhea becomes severe or complications occur, a person may need to be hospitalized



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PAGE 2 epiTRENDS June 2018

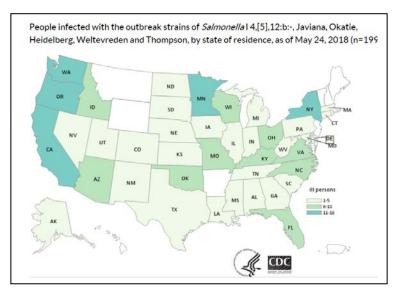
and given antibiotics to treat the infection. In rare cases, *Salmonella* may cause death if not treated promptly with antibiotics.

The Washington State Department of Health receives approximately 700-1000 reports of *Salmonella* infection per year. These infections are typically foodborne and is often associated with contaminated raw poultry, eggs, and unpasteurized dairy products. Other potential sources of infection frequently named by Washington case-patients include fresh produce, live poultry, and contact with pets, particularly reptiles. Recent large salmonellosis outbreaks include a Washington-Oregon outbreak linked to pre-cut melon and fruit mixes, as well as a multi-state outbreak associated with frozen shredded coconut.

Multistate Outbreak Associated with Kratom

Kratom (*Mitragyna speciosa*), is a plant native to Southeast Asia including in Thailand, Malaysia, Indonesia, and Papua New Guinea. Kratom may also be called thang, kakuam, thom, ketom and biak. Its leaves and extracts are consumed as an opioid substitute and for its stimulant effects. Kratom is consumed through chewing, smoking, or ingestion when brewed tea or as a powder taken in capsules. There are no approved uses of kratom in the United States.

The recent *Salmonella* multistate outbreak associated with kratom affected at least 199 people from 41 states from January 2017 to May 2018. Ages of case-patients ranged from less than one to 75 years, with a median age of 38. There were no associated deaths. Specific strains of multiple serotypes were eventually linked to the outbreak. Public health staff from state and local entities interviewed cases to ask about exposures they had prior to becoming ill. Most cases reported consuming the powdered form of kratom, but some people also reported consuming kratom as pills or tea.



The U.S. Food and Drug Administration (FDA) and several states tested leftover and unopened kratom products for the presence of *Salmonella*. Several companies issued recalls for their kratom products because of the possibility of bacterial contamination. The FDA website has a list of kratom products that have tested positive for *Salmonella* contamination as well as the list of recalled products (see Resources).

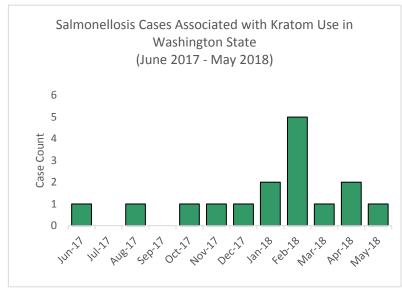
Washington State's Experience

Among the 41 states involved in the multistate kratom outbreak, Washington State had the highest case-count with 16 cases reported from January 2017 to May 2018. Washington cases included in the outbreak were identified via serotyping and pulsed-field gel electrophoresis

PAGE 3 epiTRENDS June 2018

(PFGE). Results from these laboratory tests identified strains of *Salmonella* I 4,[5],12:b:-, *S.* Okatie, and *S.* Thompson associated with the outbreak.

Among the 16 ill people residing in Washington, eight (50%) were male, and ages ranged from 4 to 60 years, with a median age of 34. Among these cases, three hospitalizations and no deaths were reported. Counties with reported kratomassociated cases include Benton, Clark, King, Lewis, Pierce, Snohomish, Spokane, Walla Walla, and Whatcom counties.



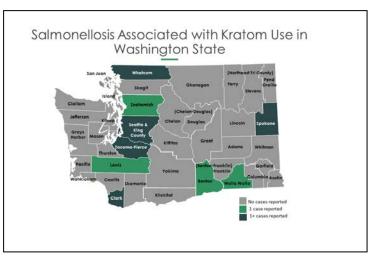
Prevention

People should be aware that kratom could be contaminated with

Salmonella and could make people ill. There is currently no knowledge on how to safely use kratom to prevent infection. For that reason, the Centers for Disease Control and Prevention (CDC) currently recommends that people do not consume kratom in any form, to prevent potential *Salmonella* infection.

Best practices to avoid spreading *Salmonella* infection to other people, and to avoid becoming infected include:

- Practice good hand hygiene by washing hands after using bathroom facilities,
- Promptly wash kitchen utensils and cooking surfaces that come into contact with raw poultry and meat, and
- Avoid drinking or eating any high-risk item that has not been thoroughly treated such as raw milk, untreated water, raw or expiring foods, or known Salmonella-contaminated products such as kratom.



The CDC continues to inform consumers that contaminated kratom products may have been unrecognized and therefore still available for purchase. If any symptoms of diarrhea, nausea, vomiting, fever, or stomach cramping arise in a person who has had recent exposure to kratom products, we advise that this person seek medical care for possible *Salmonella* infection.

PAGE 4 epiTRENDS June 2018

Resources

CDC multistate outbreak web posting:

https://www.cdc.gov/salmonella/kratom-02-18/index.html

FDA Multistate outbreak web posting:

https://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm597265.htm

FDA Kratom Overview:

https://www.fda.gov/NewsEvents/PublicHealthFocus/ucm584952.htm

CDC MMWR Kratom Exposures Reported to Poison Centers:

https://www.cdc.gov/mmwr/volumes/65/wr/mm6529a4.htm