

Ready-to-bake cookie dough not ready-to-eat, study of *E. coli* outbreak finds

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The investigation of a 2009 multistate outbreak of Shiga toxin-producing *Escherichia coli* (STEC), an important cause of bacterial gastrointestinal illness, led to a new culprit: ready-to-bake commercial prepackaged cookie dough. Published in *Clinical Infectious Diseases* and [available online](#), a new report describing the outbreak offers recommendations for prevention, including a stronger message for consumers: Don't eat prepackaged cookie dough before it's baked.

The report's authors, led by Karen Neil, MD, MSPH, and colleagues at the [Centers for Disease Control and Prevention](#) and at state health departments, reached two key conclusions: 1) manufacturers of cookie dough should consider reformulating their product to make it as safe as a ready-to-eat product and 2) more effective consumer education about the risks of consuming unbaked goods is needed. During the 2009 outbreak, 77 patients with illnesses were identified in 30 states, and 35 people were hospitalized.

Previous *E. coli*-related food-borne illnesses have been associated with [ground beef](#), [leafy green vegetables](#), sprouts, melons, salami, and unpasteurized apple cider. The 2009 investigation, which involved extensive traceback, laboratory, and environmental analysis, led to a recall of 3.6 million packages of the cookie dough. However, no single source, vehicle, or production process associated with the dough could be identified for certain to have contributed to the contamination.

Dr. Neil and colleagues suspected that one of the ingredients used to

produce the dough was contaminated. Their investigation didn't conclusively implicate flour, but it remains the prime suspect. They pointed out that a single purchase of contaminated flour might have been used to manufacture multiple lots and varieties of dough over a period of time as suggested by the use-by dates on the contaminated product.

Flour does not ordinarily undergo a "kill step" to kill pathogens that may be present, unlike the other ingredients in the cookie dough like the pasteurized eggs, molasses, sugar, baking soda, and margarine. Chocolate was also not implicated in this outbreak since eating chocolate chip cookie dough was less strongly associated with these illnesses when compared with consuming other flavors of cookie dough, according to Dr. Neil.

The study authors conclude that "foods containing raw flour should be considered as possible vehicles of infection of future outbreaks of STEC." Manufacturers should consider using heat-treated or pasteurized flour, in ready-to-cook or ready-to-bake foods that may be consumed without cooking or baking, despite label statements about the danger of such risky eating practices, the authors conclude. In addition, manufacturers should consider formulating ready-to-bake prepackaged cookie dough to be as safe as a ready-to-eat food item.

Eating uncooked cookie dough appears to be a popular practice, especially among adolescent girls, the study authors note, with several patients reporting that they bought the product with no intention of actually baking cookies. Since educating consumers about the health risks may not completely halt the habit of snacking on cookie dough, making the snacks safer may be the best outcome possible.

More information: A Novel Vehicle for Transmission of Escherichia coli O157:H7 to Humans: Multistate Outbreak of E. coli O157:H7 Infections Associated With Consumption of Ready-to-Bake Commercial

Prepackaged Cookie Dough—United States, 2009.

www.oxfordjournals.org/our_journals/cid/prpaper.pdf

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