

# Video study finds risky food-safety behavior more common than thought

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How safe is the food we get from restaurants, cafeterias and other food-service providers? A new study from North Carolina State University -- the first study to place video cameras in commercial kitchens to see how precisely food handlers followed food-safety guidelines -- discovered that risky practices happen more often than previously thought.

"Meals prepared outside the home have been implicated in up to 70 percent of food poisoning outbreaks, making them a vital focus area for food safety professionals," says Dr. Ben Chapman, assistant professor and food safety specialist in the department of family and consumer sciences at NC State and lead author of the paper. "We set out to see how closely food handlers were complying with food safety guidance, so that we can determine how effective training efforts are."

In order to get firsthand data on these food-safety practices, researchers placed small video cameras in unobtrusive spots around eight food-service kitchens that volunteered to participate in the study. There were as many as eight cameras in each kitchen, which recorded directly to computer files and were later reviewed by Chapman and others. What they found demonstrates the need for new food safety-focused messages and methods targeting food handlers.

"We found a lot more risky practices in some areas than we expected," Chapman says. For example, most previous studies relied on inspection results and self-reporting by food handlers to estimate instances of "cross-contamination" and found that cross-contamination was relatively

infrequent. But Chapman's study found approximately one cross-contamination event per food handler per hour. In other words, the average kitchen worker committed eight cross-contamination errors, which have the potential to lead to illnesses, in the course of the typical eight-hour shift.

Cross-contamination occurs when pathogens, such as Salmonella, are transferred from a raw or contaminated source to food that is ready to eat. For example, using a knife to cut raw chicken and then using the same knife to slice a sandwich in half. Cross-contamination can also result from direct contact, such as raw meat dripping onto vegetables that are to be used in a salad.

"Each of these errors would have been deemed a violation under U.S. Food and Drug Administration Food Code inspection guidelines. But more importantly, cross-contamination has the potential to lead to foodborne illnesses and has in recent outbreaks" Chapman says. "And it's important to note that the food-service providers we surveyed in this study reflected the best practices in the industry for training their staff."

The study also confirmed the long-held supposition that more food-safety mistakes are made when things are busier in the kitchen. "During peak hours, we found increases in cross-contamination and decreases in workers complying with hand-washing guidelines," Chapman says.

But the researchers do more than identify problems in the new paper; they outline solutions that can be applied to the food service industry. One suggestion is that food-safety training for kitchen staff needs to address the "team-like" nature of a commercial kitchen, rather than focusing on food handlers as individuals. "This study shows us that each food handler is operating as part of a system," Chapman says, "and the food-safety culture of the overall organization - the kitchen and the management - needs to be addressed in order to effect change. For

example, the general manager of a restaurant could take steps to highlight the value his or her business places on food safety."

Other steps that can be taken to address food-safety concerns include the introduction of new tools and procedures designed to minimize the risk of foodborne illness. New tools could be as simple as installing hand sanitizer units in accessible areas of the kitchen, which may be effective for reducing the likelihood of transfer of some pathogens. New procedures may include overhauling existing food-preparation schedules so that cooks face less time pressure during peak hours - and are therefore less likely to make [food-safety](#) mistakes.

**More information:** The study, "Assessment of Food Safety Practices of Food Service Food Handlers: Testing a Communication Intervention", is published in the June issue of the Journal of Food Protection.

Provided by North Carolina State University

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