

# A safer supper: Study finds recipes with hand-washing, temperature reminders improve food safety

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Kansas State University's Sensory Analysis Center researchers, from left: Delores Chambers, center co-director and professor of food, nutrition, dietetics and health; Edgar Chambers IV, center co-director and university distinguished professor of food, nutrition, dietetics and health; and Kadri Koppel, assistant professor of food, nutrition, dietetics and health. Center researchers have found that including hand-washing reminders and meat thermometer instructions in published recipes helps to improve food safety. Credit: Kansas State University

Kansas State University researchers have discovered the secret ingredient to improving kitchen food safety: include hand-washing reminders and meat thermometer instructions in published recipes.

Edgar Chambers IV, co-director of the university's [Sensory Analysis Center](#), and collaborative food scientists have found that only 25 percent of people use a meat thermometer when they are cooking at home. But when a recipe includes a reminder, 85 percent of people will use a thermometer. The researchers saw similar results

for hand-washing: Only 40 to 50 percent of people wash their hands when cooking, but 70 to 80 percent of people will wash their hands when a recipe reminds them.

"This is such an easy thing to do: Just add the information to the recipe and people follow it," said Edgar Chambers, who is also a university distinguished professor of food, nutrition, dietetics and health. "It's a simple way to reduce foodborne illness and we can actually reduce health care costs by simply adding information to recipes. It's a great finding and a great piece of information for the promotion of [food safety](#) information."

Chambers and his research team - including researchers at Tennessee State University and RTI International in North Carolina—have published the research in the *Journal of Food Protection*. They presented the results to the U.S. Department of Agriculture, which intends to start including these food safety instructions in recipes that it develops, Chambers said.

The four-year collaborative project is supported by a \$2.5 million USDA grant. The researchers have spent three years studying consumer shopping and cooking behaviors. Now the researchers are spending the fourth and final year working with the Partnership for Food Safety Education in Washington, D.C., to develop a nationwide food safety campaign. The researchers want to educate consumers, manufacturers, grocers, journalists, magazines and publishers on the importance of including food safety instructions in published recipes.

"We want to provide research-based information for consumers," Chambers said. "The goal is to promote safe behaviors so that people actually begin to do them every day in the kitchen and as

part of their shopping behavior."

The project focused on several areas of food safety with poultry and eggs, including using meat thermometers, washing hands frequently and storing meat in plastic bags provided by the grocery stores.

The researchers observed 75 people cook two dishes—a Parmesan chicken breast and a turkey patty with mushroom sauce—following recipes that did not have food safety instructions. Another group of 75 participants cooked the same dishes following recipes that did include food safety instructions. The dishes required the participants to handle raw meat, eggs and fresh produce while scientists observed how often the participants washed their hands or used a meat thermometer.

By comparing the two groups, the researchers found that 60 percent more people used a meat thermometer and 20 to 30 percent more people washed their hands when the recipes included reminders about the two [food safety practices](#).

"This is such a wonderful outcome," Chambers said. "It's such an easy thing to do and such an easy way to help people remember to be safe. It doesn't cost anything—just a little extra paper and a little extra time to wash your hands and use that thermometer."

The researchers also are studying kitchen lighting, which also can affect food safety. Many people are switching to LED lights and energy-efficient lights for kitchens, which is great news for consumers, but bad news for food safety, Chambers said. The energy-efficient lights make meat and poultry appear as if they are more done than they actually are.

"We have shown through research that changing to more modern lighting in kitchens makes [people](#) believe their meat patties are done sooner than they would be under old lighting, which is wrong," Chambers said. "That is not good news for consumers unless they are using a meat thermometer."

The [researchers](#) recently published the lighting-

related research in the *Journal of Sensory Studies*.

**More information:** Curtis Maughan et al, A procedure for validating the use of photographs as surrogates for samples in sensory measurement of appearance: An example with color of cooked turkey patties, *Journal of Sensory Studies* (2016). [DOI: 10.1111/joss.12240](https://doi.org/10.1111/joss.12240)

Provided by Kansas State University

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