

How Restaurants Prepare Eggs

EHS-Net Study Findings and Recommendations

Thousands of illnesses related to germs in eggs have been reported to the Centers for Disease Control and Prevention. Most of these illnesses have been linked to restaurants. Thus, it is important to collect data that will describe restaurant practices for egg handling that pose foodborne illness risks. This can help us address these risky practices so we can prevent illnesses.

What the Study Described

This study described practices restaurants use to prepare eggs. It focused on practices that allow the growth or spread of germs in or on eggs. Four of these practices are described below.

- **Improper cooking of eggs** can allow germs to survive cooking. Eggs should be cooked to at least 160°F.
- **Mixing eggs together (pooling)** can allow one or more infected eggs to contaminate a larger batch of eggs. The larger batch can then be a source for germs and can lead to multiple illnesses or contamination of other food.
- **Storing uncooked eggs at improper temperatures** can allow germ growth in or on eggs. Uncooked eggs should be stored at or below 41°F.
- **Improper cleaning of utensils and equipment** can allow for contamination. Germs from uncooked eggs can transfer from utensils and equipment to other kitchen surfaces.

Eggs that are pooled, stored above 41°F, or prepared with improperly cleaned utensils but are then cooked properly are less likely to cause foodborne illness. But these three practices can lead to risks for contamination that proper cooking cannot solve. For example, a whisk used in a batch of eggs infected with germs and then not properly cleaned can spread germs to foods that may not be cooked, such as salad dressing, or to other kitchen surfaces.

When eggs are not pasteurized, these practices are more problematic. Pasteurization reduces the germs in eggs, making them less likely to cause foodborne illness even when they are prepared improperly.

High-risk egg-preparation practices, such as improper storage of eggs before cooking, pooling of eggs, and improper cleaning of utensils, were common in restaurants.



This study was conducted by the Environmental Health Specialists Network (EHS-Net). EHS-Net is a federally funded collaborative of federal, state, and local environmental health specialists and epidemiologists working to better understand the environmental causes of foodborne and waterborne illness. Visit <http://www.cdc.gov/nceh/ehs/EHSNet>.

What the Study Found

Most restaurants used unpasteurized eggs, which are more likely to cause illness if not cooked properly.

High-risk egg-preparation practices were common in restaurants. These practices include improper storage of eggs before cooking, pooling of eggs, and improper cleaning of utensils. Several of these methods can lead to contamination risks and should be avoided.

Most egg dishes observed in this study were cooked at or above the proper temperature. This is important because properly cooked eggs, even those prepared with high-risk practices, are less likely to cause illness. But most restaurants also said that they sometimes prepared undercooked eggs. This has high risk, especially because of how often other high-risk preparation practices were observed.

EHS-Net Recommends

Increased efforts are needed to reduce the spread of germs linked to eggs in restaurants. Public health food-safety regulators should

- Tell restaurants how to prepare eggs in ways that reduce the risk for spreading germs.
- Encourage restaurants to use pasteurized eggs.
- Focus restaurant inspections and outbreak investigations related to eggs on the high-risk practices seen in this study.

Restaurants that serve eggs should review their preparation practices and consider changes to reduce the risk for spreading germs. Specifically, these restaurants should

- Consider using pasteurized eggs.
- Not pool eggs.
- Keep uncooked eggs at the proper temperature.
- Properly clean utensils and equipment used with eggs.

More research is needed to find what prevents restaurants from safely preparing eggs and from using pasteurized eggs. Food-safety researchers could do this research. Restaurant managers also can review their practices and kitchens for barriers to safe egg preparation.

