FOCUS ON

Food Safety

OKLAHOMA COOPERATIVE EXTENSION SERVICE

Oklahoma Cooperative Extension Service • Oklahoma State University
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The extent of foodborne illness in the United States and its associated costs are significant. The Centers for Disease Control (CDC) estimate that unsafe foods cause as many as 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths annually. In terms of medical costs and productivity losses, foodborne illness associated with seven major pathogens cost the nation between $7 billion and $37 billion annually, according to the USDA's estimates.

While the likelihood of serious complications is unknown, the Food and Drug Administration (FDA) estimates that two to three percent of all foodborne illnesses lead to secondary long-term illnesses. For example, certain strains of E.coli can cause kidney failure in young children and infants; Salmonella can lead to reactive arthritis and serious infections; Listeria can cause meningitis and stillbirths; and Campylobacter is the most common precipitating factor for Guillain-Barre syndrome.

Foodborne illness can affect anyone, but is complicated by increasing the number of people who are at "high risk" or are highly susceptible. Included in this group are people that test positive for the Human Immunodeficiency Virus, with Acquired Immunodeficiency Syndrome (AIDS), who have weakened immune systems as a result of pharmaceutical or radiological treatments, the elderly, pregnant or nursing women, infants, and preschool-age children. It is the goal of the Oklahoma Cooperative Extension Service to educate all consumers on ways to reduce their risk with special emphasis on those with the greatest risk.

For information on food safety or other FCS programs, please check our web site at http://fcs.okstate.edu/.

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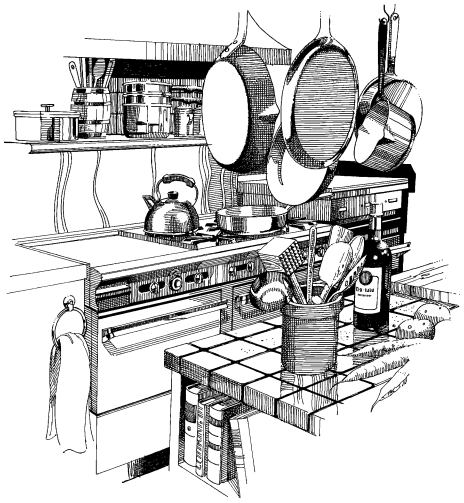

In This Issue –

Food Safety for Seniors

Research has shown that seniors (people over 60 years of age) are an educated group when it comes to knowledge of good, food safety practices. Seniors are at higher risk for foodborne illness than they were at younger ages. It is important that they know and practice safe food handling.

Foodborne illness is more likely to affect seniors because as people age, the ability of the immune system to function at normal levels decreases. The immune system is one of the most important mechanisms for fighting disease and preserving health. A decrease in the level of disease-fighting cells significantly impacts the number of infections that may occur.

In addition to the normal decrease in the function of the immune system, undergoing major surgery reduces the body's ability to fight off infections.

Changes in the gastrointestinal tract with aging increase the risk of getting a foodborne illness. With age, inflammation of the lining of the stomach and a decrease in stomach acid occurs. The stomach plays an important role in limiting the number of bacteria that enter the small intestine, a decrease or loss of stomach acidity increases the likelihood of infection if a pathogen is ingested with food or water.

Adding to the problem is a slow down in the digestive process, allowing for the rapid growth of pathogens in the gut and the possible formation of toxins.

There is a connection between malnutrition and foodborne illness. Malnutrition leads to increased incidence of infections, including those that result from foodborne bacteria. There are many reasons why malnutrition occurs in seniors. There may be a decrease in the pleasure of eating. Medication, digestive disorders, chronic illnesses, physical disabilities or depression may result in a loss of appetite.

As a result of these types of physical changes, changes in the production, processing, and preparation of food and lifestyle changes, seniors need to know that "doing things the way we've always done them" may leave them open to foodborne illness.

This project studied four areas where research found seniors fail to use the safest practices:

1. Thawing foods safely,
2. Storing leftovers safely,
3. Storing large amounts of hot food safely,
4. Grilling meats safely.

A "Food Safety for Seniors" curriculum to teach seniors correct food safety practices was developed using funding provided by a USDA, Food Safety & Quality National Initiative Plan of Work Project Grant.

A series of four short lessons that would be presented by County Educators was developed. Each lesson included the following components:

- A short videotape on the topic,
- A participant handout which was made available in a large print and half-sheet envelop size formats (hard copy and on CD),
- Visuals with script (PowerPoint format) which was distributed to county educators as both a hard copy and as a computer CD,
- An evaluation tool for each lesson (hard copy and on CD).

Twenty-three County Educators received training on why seniors are at greater risk for foodborne illness than younger adults, which behaviors put them at greater risk, a review of lesson components, and instruction on use of the evaluation tool. Educators were asked to return the evaluations to the food specialist after lessons were presented.

One-hundred-seventy-three evaluations were returned. Of those only six were for the "Grilling Meat Safely" lesson. This was probably because the evaluation period was between December and March, not the grilling season. Since the sample size was small, no results will be discussed.

Oklahoma FoodSafe

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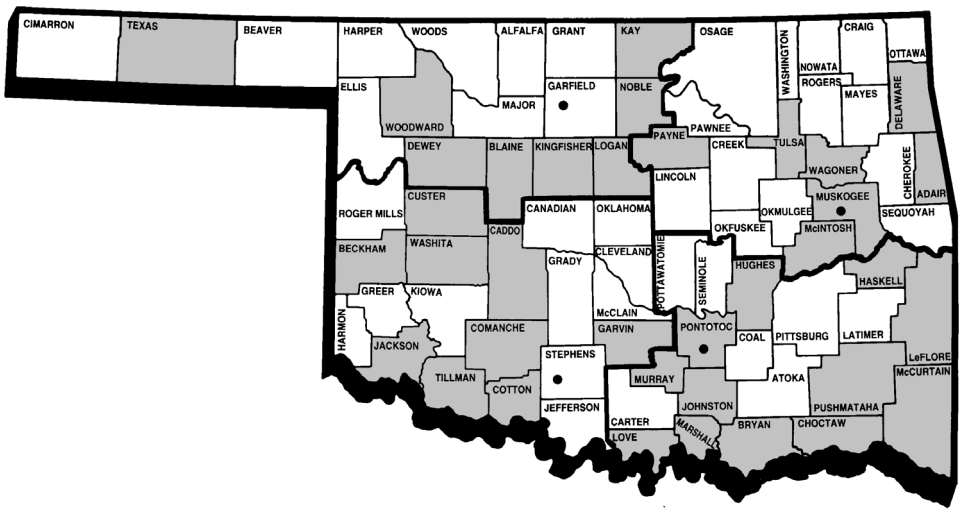
A summary of results showed:

- Most participants (63.4% of 41) of "Thawing Meat Safely" believed they thawed meat safely prior to the lesson. Of those that did not (36.6%), **40% indicated they definitely planned to change and 46.7% probably would to a safer method of thawing.**
- Most participants (76.9% of 91) of "Storing Leftovers" believed they handled leftovers safely prior to the lesson. Of those that did not, **52.4% definitely planned to change the way they handled leftovers to reduce their risk of foodborne illness;** 19.0% probably would change; 19.0% would think about changing their handling of leftovers; and 9.5% planned no changes.
- More than half (54.3% of 35) of participants of "Cooling Hot Foods" found the need to change the way they cool food to reduce the risk of foodborne illness. Of those, **73.7% definitely planned to change the way they cool food after attending the lesson; 21.1% indicated they probably would change;** and 5.3% would think about making a change.

County Educators that received training will continue to use the lessons to reach the group at high risk of foodborne illness. The lessons, handouts, and videos have been made available on the Family and Consumer Sciences web site (http://fcs.okstate.edu/). They will also be distributed to all counties and to other state Cooperative Extension Services.

Oklahoma's "Quick & Easy Cooking Schools"



Bringing consumers to a meeting focusing on food safety can be difficult. It is often better to combine the information with education on how to incorporate nutrition information or new food preparation skills. This was done in the *Quick & Easy Cooking Schools* program.

"Building partnerships to make a difference in peoples lives." That was the vision of Kristy Spalding and Radonna Sawatzky, OSU Cooperative Extension County Educators. Not only did they have a vision for their individual counties, they had a vision to make an impact on people's lives statewide. This vision developed into the *Quick & Easy Cooking Schools.*

Thirty-six counties in Oklahoma are above the state average for foodborne illness. Food safety has been an issue that Spalding, Washita County, and Sawatzky, Custer County, have been working on to lower the incidence of foodborne illness in both counties. Barbara Brown, State Food Specialist, has been working with county educators to reduce the risk of foodborne illness for citizens since 1981. Together they put together the curriculum for the *Quick & Easy Cooking Schools.*

It was important that the program meet the needs for food safety and nutrition education as well as a hands-on experience for participants. Research shows that people learn more through hands-on experiences than lectures or demonstrations. The teams' experience proved this as well. Participants had continually commented that they preferred hands-on cooking experiences.

The educators' vision was to take this program beyond their county boundaries and across the state. Knowing county budgets could not handle this endeavor they sought outside resources through a partnership.

A proposal to the Oklahoma Pork Council (OPC) Executive Board resulted in a four-year, $60,000 grant. The OPC chose to partner with OCES to provide science based education to participants on food safety and nutrition issues related to pork. Years one and two (2000-2001) targeted adults. Years three and four (2002-2003) will target youth audiences.

During each school, participants gained basic information on nutrition, food buying, food science, and food safety, and then divided into small groups where they prepared a variety of recipes illustrating the education received. The actual preparation and sampling of food reinforced the principles learned. The school was presented in a relaxed, enjoyable format. Participants had fun while learning.

After testing the program in two counties, County Educators across the state were trained on current, research-based food, nutrition, and food safety recommendations for pork. Educators were also trained on how to use the evaluation tools. Each educator received the opportunity to apply for a grant that would help cover school costs.

"Quick & Easy Cooking Schools" were held in 30 counties across the state.

By January 2002, 502 completed and usable pretests were received. Two-hundred-forty-nine usable posttests were returned. Of those, 122 were able to be matched with a usable pretest.

The schools produced results. Pre- and posttests were conducted for each school given.

- 39.1% of pretest participants usually ate pork prepared with a method that added fat to the final product compared to 30.1% of posttest participants. The percent that chose methods with no added fat remained constant (54.7% vs. 55%).
- The majority of participants ate pork occasionally both before and after attending the cooking school. There was a drop in the number who never ate pork (12.8% to 5.2%). More participants ate it more often (3-4 times or more than 4 times per 2 weeks) after attending.
- When nutrition related factors were combined (fat, cholesterol, salt, and nutrition) 47.7% of pretest participants indicated this as the number one reason pork was not cooked more often. When they took the posttest that percentage decreased to 30.8%. If only one factor is examined the cost of pork was the primary reason (41.8%) for less frequent use of pork. On the posttest that percent increased to 62.7%. Slightly over a third of participants (34.7%) cited ease and speed of preparation as deterrents to more frequent use. That decreased to 31.8% on the posttest. It is possible that participants learned the healthful nutrition profile and ease of preparation of pork during the cooking schools and did not need to circle those as concerns. That left the cost as the prime factor which affected their decision on how often they cooked pork.
- After respondents attended the cooking school the percentage that never

used a thermometer when cooking meat was cut almost in half. The percent that often used a thermometer rose from near 6% to above 23%. There was also doubling of the percent that used a thermometer most of the time. This is one of the primary steps that could be taken by individuals to reduce their risk of foodborne illnesses that result from the consumption of inadequately cooked meat.

- It is evident that attendance at the cooking school helped participants gain knowledge regarding the correct internal temperature needed to cook pork safely. There was a decrease in the percent that chose 155°F (a temperature too low to ensure safety) from the pre- to posttest. The percentage that chose the correct end point temperature nearly doubled (24.3% vs. 46.2%). Others indicated a temperature that would ensure safe pork but with drier meat.
- Barriers to preparation that decreased after participation in the school included "quick" (fast to prepare), "taste" (more liked the flavor) and "safer" (a safe meat to eat).
- Over 42% of participants thought of pork as a lean meat before and after attending the cooking school. Over 11% changed their image of pork from one of a high fat to a lean meat after attending the school. Twenty-seven participants (22%) changed their image of pork after attending the cooking school from a less nutritious food (high in fat, cholesterol or salt) to a healthful food (lean, low cholesterol).

In summary the "Quick and Easy Cooking School" pulled together the efforts of the OCES educators and the OPC to produce and provide an educational program that benefited nutritional health, reduced money spent on food, reduced food safety risks, and increased eating pleasure of Oklahomans.

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