Educating Consumers on the Safe Handling of Fresh Produce

April 16, 2014
The Partnership for Food Safety Education delivers trusted, science based behavioral health messaging and a network of resources that support consumers in their efforts to reduce risk of foodborne illness.

The mission of the Partnership is to end illness and death from foodborne infections in the United States.

Support for the Partnership for Food Safety Education is provided by PFSE Contributing Partners:

Food Marketing Institute & Produce Marketing Association
Housekeeping

CE certificates from the CDR and NEHA at teamfood安全性.org > Resources > Presentations

Email ashley@fightbac.org with questions!

• If you have a question, please type it into the “chat” box.

• Please take the post-survey! It will help the Partnership to serve you better.

• Thank you, BAC! Fighters, for your work to prevent foodborne illness across the United States!
Webinar Objectives:

✓ Consumer trends related to fresh produce
✓ Attribution of foodborne illness from fresh produce
✓ Integrating safe handling into nutrition messages
✓ Preview new creative platform for educating consumers

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The Partnership for Food Safety Education
Today’s speakers

Linda Verrill, Ph.D.

Ashley Eisenbeiser, M.S

Ellie Krieger, RDN
Linda Verrill, Ph.D.
Consumer Behavior

Consumer Science Specialist

FDA Center for Food Safety and Applied Nutrition
Foodborne Illness

Foodborne pathogens cause an estimated 47.8 million illnesses and 3,037 deaths a year (Morris et al., 2011)

Foodborne pathogens cause not only mild diarrhea but organ failure, paralysis, neurological impairment, blindness, stillbirths and death (Scallan et al., 2011)

14 pathogens represent over 95% of the annual illnesses and hospitalizations (Scallan et al., 2011)

5 pathogens are responsible for over 90% of the health burden:

- Salmonella
- Toxoplasma gondii
- Listeria monocytogenes
- Campylobacter
- Norovirus
Produce and Foodborne Illness

Salmonella in top 10 of pathogen-commodity pairings (CDC-MMWR, 2013)

Salmonella and produce are among the top 5 pathogen-commodity pairings responsible for outbreak-related illnesses and hospitalizations (CDC-MMWR, 2013)

Outbreaks and illnesses underreported, therefore underestimated (Morris et al., 2011)

Salmonella contamination of produce a growing problem (Lynch, 2009)

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Why are Illnesses from Produce Growing?

- Increases in consumption (Lin et al., 2004, Wells and Busby, 2008)
- Desire for year-round fresh product
- Increase in produce transport
- More cutting/coring in field for processed produce
- More fields close to animal product
Why Focus on Consumer Behavior?

• **Greatest proportion of food eaten is prepared at home** (Carlson et al., 2002)

• **21% of outbreaks attributed to foods eaten at home** (CDC-MMWR, 2013)

• **Pathogens easily spread across kitchen** (Redmond and Griffith, 2004; van Asselt et al., 2008)

• **Almost ¼ of US population at increased risk for illness:**
  * Over age 65
  * Pregnant
  * Home health care
  * Less than 5 years old
  * Immunocompromised

• **Few consumers think home is source of food contamination 8%** (FMI 2011)

• **Food prepared at home often served to wider community** (Byrd-Bredbenner et al., 2013)
Produce Handling Recommendations

• Purchase produce that is not bruised or damaged
• Store perishable fresh fruits and vegetable at 40 degrees Fahrenheit or less
• Keep produce separate from meat, poultry and seafood

Even produce that you plan to peel should be washed!

- Use a vegetable brush to scrub firm-skinned produce while holding under running water
- Wash less firm by rubbing or rinsing under running water.
- Not necessary to wash bagged, pre-washed produce
Poor Food Safety Practices in General

- ¼ of refrigerators too warm (Kosa et al., 2007)
- If they do wash, not done right (Anderson et al., 2004)
- Many don’t wash hands or cutting boards (Alterkruse et al., 1999)
- Risky food consumption (Alterkruse et al., 1999; Anderson et al., 2004)
Consumer Perceptions and Behavior in Handling Fresh Produce:

Percent of US Consumers who think it is likely that fruits and vegetables have germs that can make you sick, 2010 FDA Food Safety Survey.
Fruit and Vegetable Washing

Analysis of produce washing questions from FDA Consumer Food Safety Survey:

• Almost 100% report washing strawberries and tomatoes

• About half report washing cantaloupe
  • Large decrease for men from 2006 to 2010

• More than half wash bagged, pre-cut lettuce
  • Large increase for women from 2006 to 2010
Demographics for Poorest Food Handling

- Males
- Caucasians
- Young adults between 18 and 29 years
- Much older adults
- Most educated
- Higher income

(Patil et al., 2004; Fein et al., 2011; Kosa et al., 2007; Li-Cohen and Bruhn, 2002)
The Promise of Produce Safety Education

• Significant improvements in food handling from 1988 thru 2010 (Fein et al., 2011).

• Produce safety education program successful (Scott, Pope, & Thompson, 2009)

• Hand hygiene may be best focus for improving produce handling behavior (Byrd-Bredbenner et al., 2013; Palumbo et al., 2007; Verrill, Lando, & O’Connell, 2012)
Poll:

The best way to reach more consumers about produce handling is:

A) Television
B) Grocery Stores
C) Magazines
D) Medical professionals
Ashley Eisenbeiser, M.S.

Safe Produce Handling Practices

Manager of Food Safety and Technical Services
Food Marketing Institute
6 Steps for Safer Fruits and Vegetables

- Check
- Clean
- Rinse
- Separate
- Chill
- Throw Away
Why are consumer fruit and vegetable handling practices so important?
Trends CDC Attribution from 1998 - 2008

Figure 1. Contribution of different food categories to estimated domestically-acquired illnesses and deaths, 1998-2008*

*Chart does not show 5% of illnesses and 2% of deaths attributed to other commodities. In addition, 1% of illnesses and 25% of deaths were not attributed to commodities; these were caused by pathogens not in the outbreak database, mainly *Toxoplasma* and *Vibrio vulnificus.*

Foods Linked to Outbreaks, 1998 - 2008

- Poultry: 616 cases
- Fish: 608 cases
- Beef: 389 cases
- Leafy Vegetables: 262 cases
- Pork: 260 cases
- Other: 1129 cases

(Other includes, Mollusks, Fruits and Nuts, Dairy, Grains and Beans, Eggs, Crustaceans, Vine-Stalk Vegetables, Roots, Sprouts, Oils and Sugars, Game, and Fungi)
Produce, along with any food, can become contaminated anywhere from Farm to Fork.

- Produce may become contaminated from bacteria found naturally in the soil or water where the produce grows.
- After harvest—during preparation or storage.
Check fresh produce for bruises or any other damage.

• Pre-cut fruits and vegetables should be on ice or refrigerated

Before consuming, rinse produce under running water and pat dry with clean cloth or paper towel.

• Firm skin fruits and vegetables should be rubbed by hand or scrubbed with a clean brush
Poll:

Rinsing produce with water is enough to remove pathogens:

A) True
B) False
Produce Foodborne Illness Outbreaks

- 30% associated with cross contamination.
- 40% associated with poor personal hygiene.

*Among the 11,627 (88%) foodborne disease outbreaks with a reported single setting where food was prepared


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Dewall et al., 2006
Consumers are concerned about the risk of foodborne illness; however, they are not taking all the steps to prevent it.

**Cross Contamination**
Separate Produce from raw meat, seafood, poultry, eggs and household chemicals

**When in doubt, throw it out**

**Poor personal hygiene**
Proper hand washing techniques
Getting on the Same Page: Consumer Advice

Food safety educators report promoting two “outlier” messages with consumers. These messages are not in FDA or PFSE advice for consumers.

Unsupported Outlier Messages*

- Washing Bagged, Pre-washed Produce: 52.60%
- Use of Produce Wash: 13.90%

*PFSE survey

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Rinse: Correct Practices

• **Do not wash packaged fruits and vegetables labeled ready-to-eat, washed, or triple-washed.**
  – Research shows that rewashing is not likely to increase safety due to potential risk of cross-contamination *(Palumbo et al., 2007).*

• **Before consuming, rinse produce under running water and pat dry with clean cloth or paper towel.**
  – Research has shown water to be just as effective as veggie wash, vinegar solution and detergent *(Palumbo et al., 2007).*

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Often, produce is consumed raw and does not have final ‘kill’ step for pathogens.
Consumers are the last line of defense in preventing foodborne illness.

Consumers can reduce the risk of foodborne illness by following safe food handling practices.
Ellie Krieger, RDN

Food Safety: an Essential Ingredient for Nutrition Education

Registered Dietitian Nutritionist/Author and TV Personality

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Healthy Food + Food Safety = Good Nutrition
Color Connection

**RED**
Lycopene and anthocyanins

**YELLOW/ORANGE**
Carotenoids

**GREEN**
Lutein and indoles

**BLUE/PURPLE**
Anthocyanins and phenolics

**WHITE**
allicin

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To get the most love from our fruits and veggies, we need to love them first with a commitment to handling and preparing them safely...

Need to effectively integrate and present to consumers food safety and nutrition content!
Recipes and Demonstrations:
Model and include safe handling practices

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Poll:

Do you model food safety when you do cooking demonstrations for consumers?

A) Yes
B) No
C) I don’t do cooking demonstrations
D) Yes, but I feel like I could do more
Food Safe Recipe: Broccoli Stalk, Celery, and Radish Salad

**Ingredients:**
3 or 4 large broccoli stalks (from 2 to 3 lb. broccoli; reserve florets for another use)
6 medium radishes, thinly sliced (about 1 cup)
1 celery heart (about 3/4 lb.), trimmed and thinly sliced on the diagonal (including the leaves)
1/3 cup loosely packed fresh flat-leaf parsley leaves
1 T. extra-virgin olive oil
1 T. fresh lemon juice
Fine sea salt and freshly ground black pepper
1 oz. Parmigiano-Reggiano, shaved with a vegetable peeler (about 3/4 cup)
Steps:
1) Before cutting, rinse the broccoli stalks, celery stalks, whole radishes, parsley, and whole lemon under running tap water. Rub the firm skinned produce (lemons and radishes) with your hands or a veggie brush. Blot the produce dry with clean cloth or paper towels.

2) Use a clean knife and clean cutting board. Slice the celery and radishes.

3) Peel away the tough outer layer of the broccoli stalks, leaving only the tender interiors. Trim the tough ends from the stalks (about ½ inch), halve the stalks lengthwise if they are more than 1 inch in diameter, and slice the stalks on the diagonal about 1/8 inch thick. Transfer to a medium bowl.

4) Add radishes, celery, parsley, oil, lemon juice, ¼ tsp salt, 1/8 tsp pepper and toss to combine.

5) Enjoy by serving garnished with the shaved parmigiano.
Reaching Kids: Vegetables 360°
1) 10 minute Veggie-Byte
2) Parent Outreach
3) Good food ambassadors
4) Lunch room tastings
5) Vegetables served on regular menus

Photo courtesy Ellie Krieger
Be a role model – cook with kids!

Several studies have shown that children's consumption of fruits and vegetables is correlated with parents’ intake and children’s attitudes about fruit. Children are also more likely to eat new foods when they see a parent consuming them.

Food Safety is integral to cooking and eating well. It doesn’t have to involve a scary conversation—it’s simply about forming good basic habits for healthfully preparing and enjoying more produce.
Campaign Preview

Six Simple Steps to Smart Produce Safety

1. CHECK for bruising or damage
2. CLEAN fruits, vegetables and utensils
3. RINSE fresh fruits and vegetables
4. SEPARATE from contaminated food
5. CHILL out-produce below 40°F
6. THROW AWAY when in doubt, throw it out

Introducing our new campaign to help consumers reduce their risk of foodborne illness. Together, let's create a food safe America.

Ellie Krieger, Registered Dietitian and TV Personality

Turn Everyone Into a ProducePro
Share easy tips to keep produce safe and healthy.

Help get the word out about keeping produce safe in the home kitchen.

Enjoy a library of downloadable educational tools and activities that make it easy to explain the science behind the safety steps.

PRODUCE protip
Refrigerate all cut, peeled, or cooked fresh fruits and vegetables within two hours of preparing.

For more tips visit storeurl.com
Campaign Elements

- Consumer Fact Sheet
- Educator Talking Points
- Safe Handling Graphic
- Retail Circular
- Retail Point of Sale
- Retail Handouts

Watch your weekly E-cards from PFSE for news of the launch!
Q&A

Type your question in your dashboard!
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Upcoming Events
Knowledge Exchange: 7/29 1:00 PM EST
CFSEC Conference: 12/4-12/5

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Thank you for joining!

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Together: A Food Safe America