



Seniors and Food Safety

by *Melissa Vaccaro, MS, CHO*

Times are changing. Consumers today are demanding all kinds of food from all over the world. The food in our grocery stores is from around the globe. With this globalization comes a greater concern for food safety. Most of us spend nearly 50 percent of our money on foods that others prepare for us, such as at restaurants and carry-out operations. Some people rely solely on foods that others prepare for them, such as residents of long-term care facilities. Our awareness and knowledge of

pathogens that can cause foodborne illness, along with our increased and rapidly changing surveillance systems, have allowed us to learn about infectious agents we never knew existed many years ago. We also know that some people are more susceptible to getting sick from contaminated foods than others.

We are living longer. Depending on the study you read, most statistics show the average American is living to be 72-82 years old. More and more of our population



FOODBORNE ILLNESS AND OUR SENIOR POPULATION

is classified as “senior.” Well, who defined “senior?” According to the Centers for Disease Control and Prevention (CDC), people age 65 and older are generally classified as senior and are more susceptible to disease and illness.

As much as we would like to think otherwise, as we age it is normal for our bodies not to work as well as they did when we were younger. Changes in our bodies and organs are expected as we grow older—our eyes don’t see

as well, our legs are a bit weaker, our knees crack when we go up and down stairs. But our digestive system and immune system also become more challenged. These changes often make us more susceptible to contracting a foodborne illness as we age.

Foodborne illness is a serious public health threat to people of all ages, but senior citizens are often at higher risk. The CDC Foodborne Disease Active Surveillance Network notes that deaths from foodborne illness among nursing home residents are 10 to 100 times greater than for the general population. To confront this major problem, the Food and Drug Administration (FDA) provides guidelines in the FDA Model Retail Food Code for facilities that serve highly susceptible populations (HSP). The FDA defines “highly susceptible populations” as persons who are more likely than others in the general population to experience foodborne disease because they are:

- Immunocompromised, preschool age children, or older adults; and
- Obtaining food at a facility that provides services such as custodial care, health care, or assisted living, such as a child or adult daycare center, kidney dialysis center, hospital or nursing home, or nutritional or socialization services such as a senior center.

A LOOK AT TRENDS

- According to the government census, in 2011, 35 million people were over age 65 in the United States.
- By 2030, projections indicate that 20 percent of the population is likely to be over age 65 (about 70 million people).
- By 2050, the group over 65 will number 86.7 million and comprise 21 percent of the population.
- More than 1.7 million people reside in nursing homes in the United States, according to the CDC 2010 Trend Report.
- The National Center for Health Statistics in 2010 reports that nearly one million seniors live in residential care facilities (assisted living and personal care homes). These numbers are expected to double by 2030.
- As the senior population grows, those who reside in these types of facilities will also increase, and thus there

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will be greater numbers of seniors at risk for foodborne illness. Therefore, foodborne illness in this population and these settings is a very important issue.

- According to the CDC, people over 74 years of age are five times more likely to die from infectious diarrheal disease than in the next highest group (children under four years of age). They are also 15 times more likely to die than younger adults.
- Adults 65 and older are at a higher risk for hospitalization and death from foodborne illness. For example, older adults residing in nursing homes are 10 times more likely to die from bacterial gastroenteritis than the general population, according to FoodNet (CDC, 2013). This data shows food safety is particularly important for adults 65 and older.

FOODBORNE ILLNESS IN SENIORS

The increased risk of foodborne illness is because our organs and body systems go through fluctuations as we age. These changes include:

- The gastrointestinal tract holds on to food for a longer period of time, allowing bacteria to grow.
- The liver and kidneys may not properly rid our bodies of foreign bacteria and toxins.
- The stomach may not produce enough acid. The acidity helps to reduce the number of bacteria in our intestinal tract. Without proper amounts of acid, there is an increased risk of bacterial growth.
- Underlying chronic conditions, such as diabetes and cancer, may also increase a person’s risk of foodborne illness.
- By the age of 65, many of us have been diagnosed with one or more chronic conditions, such as diabetes, arthritis, cancer, or cardiovascular disease, and are taking at least one medication. The side effects of some medications or the chronic disease process may weaken the immune system, causing older adults to be more susceptible to contracting a foodborne illness.
- After the age of 75 years and older, many adults have a weakened immune system and are at an increased risk for contracting a foodborne illness.

Fundamentally, as we age our immune system and other organs in our bodies become a bit sluggish in recognizing

and eradicating the body of harmful bacteria and other pathogens that cause infections, such as foodborne illness. Should older adults contract a foodborne illness, they are more likely to have a prolonged illness, submit to hospitalization, or even die. *To avoid contracting a foodborne illness, older adults—and those that prepare foods for older adults—must be especially vigilant when handling, preparing, serving, and consuming foods.*

FOODS SENIORS ARE WARNED NOT TO EAT

To reduce risks of illness from bacteria in food, seniors (and others who face special risks of illness) are advised *not* to eat:

- Raw or undercooked meat or poultry.
- Raw fish, partially cooked seafood (such as shrimp and crab), and refrigerated smoked seafood.
- Raw shellfish (including oysters, clams, mussels, and scallops) and their juices.
- Unpasteurized (raw) milk and products made with raw milk, like yogurt and cheese.

Figure 1: Foodborne Illness in Seniors

Pathogen	Number of Confirmed Cases in Adults 65 and Older in 2013	% of Adults 65 and Older Hospitalized from Pathogen in 2013
Campylobacter	964	31
Listeria	63	90
Cryptosporidium	125	24
E. coli 0157	47	59
E. coli non-0157	44	22
Salmonella	947	48
Shigella	83	43
Yersinia	37	56

CDC, Foodborne Disease Active Surveillance Network (FoodNet) 2013 data

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Figure 2: Control Methods to Prevent Foodborne Illness

Source of Contamination	Primary Agents of Concern	PHF/TCS Primary Control Method
Fruits and Vegetables, fresh	<ul style="list-style-type: none"> E. coli O157:H7 Salmonella Norovirus Hepatitis A virus Shigella 	<ul style="list-style-type: none"> Cook to proper temperature* Prevention of cross-contamination to ready-to-eat foods
Ready-to-Eat Meat and Poultry Products	<ul style="list-style-type: none"> Listeria monocytogenes 	<ul style="list-style-type: none"> Proper refrigeration during storage Proper hand-washing procedures Avoid bare-hand contact with ready-to-eat foods Clean and sanitized equipment
Pasteurized Dairy Products	<ul style="list-style-type: none"> Listeria monocytogenes 	<ul style="list-style-type: none"> Proper refrigeration during storage
Ice	<ul style="list-style-type: none"> Norovirus 	<ul style="list-style-type: none"> Cleaning and sanitizing the internal components of the ice machine according to manufacturers' guidelines
Eggs, raw or unpasteurized	<ul style="list-style-type: none"> Salmonella 	<ul style="list-style-type: none"> Cook to proper temperature* Prevention of cross-contamination to ready-to-eat foods
Poultry, raw	<ul style="list-style-type: none"> Campylobacter Salmonella Clostridium perfringens 	<ul style="list-style-type: none"> Cook to proper temperature* Prevention of cross-contamination to ready-to-eat foods
Meat, raw	<ul style="list-style-type: none"> E. coli O157:H7 Salmonella Campylobacter Clostridium perfringens 	<ul style="list-style-type: none"> Cook to proper temperature* Prevention of cross-contamination to ready-to-eat foods
Infectious Food Workers	<ul style="list-style-type: none"> Norovirus Hepatitis A virus Shigella Salmonella (Non-Typhi) Staphylococcus aureus E. coli Salmonella Typhi 	<ul style="list-style-type: none"> Exclusion of infectious food workers Proper hand-washing procedures Avoid bare-hand contact with ready-to-eat foods

2013 FDA Food Code Annex. * See Figure 3 for Critical Limits for Temperature Control of Pathogens.

Figure 3: Critical Limits for Temperature Control of Pathogens

Process	Food Item	Temperatures (for 15 seconds)
Final Cooking Temperatures	Poultry and Stuffed Foods	165°F
	Ground Meat	155°F
	Fish and Other Meats	145°F
	Unpasteurized Eggs (immediate service)	145°F
Reheating Foods	Internal Temperature	165°F
	Intact Package	135°F
Cooling	Within 2 hours	From 135°F to 70°F
	Within 4 hours	Cooled to 41°F
	Total time cooling not to exceed 6 hours	Cooled from 135°F to 41°F

2013 FDA Food Code

- Soft cheeses made from unpasteurized milk, such as feta, brie, camembert, blue-veined, and Mexican-style cheeses (such as queso fresco, panela, asadero, and queso blanco). Hard and semi-soft cheeses are ok to eat.
- Raw or undercooked eggs or foods containing raw or undercooked eggs, including certain homemade salad dressings (such as Caesar salad dressing), homemade cookie dough and cake batters, and homemade eggnog. *NOTE: Most pre-made foods from grocery stores, such as Caesar dressing, pre-made cookie dough, or packaged eggnog, are made with pasteurized eggs.*
- Unwashed fresh vegetables, including lettuce/salads.
- Unpasteurized fruit or vegetable juices (these juices will carry a warning label).

- Hot dogs, luncheon meats (cold cuts), fermented and dry sausage, and other deli-style meats, poultry products, and smoked fish — unless they are reheated until steaming hot.
- Salads (without added preservatives) prepared on site in a deli-type establishment, such as ham salad, chicken salad, or seafood salad.
- Unpasteurized, refrigerated pâtés or meat spreads.
- Raw sprouts (alfalfa, bean, or any other sprout).

CONTROL MEASURES

Even foods that are generally safe for a HSP population to eat must still be prepared, held, and served in a safe manner. Any food can become contaminated. It is important that the foodservice director or CDM control the food facility (preferably using a HACCP system) to

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ensure safe food to their clients. Of utmost importance is employee hygiene and training. Employees play a very important part in ensuring safe foods. Make sure your staff is trained in all duties for which they may be responsible. Just as food safety changes from time to time due to new findings and science, employees must be retrained from time to time as well. Keep a record of your training to share with your regulatory agency.

Employees must also have exemplary personal hygiene. They should not work with or around food if they are sick. If an employee is sick, they should discuss this with their Director. In some cases an employee may be reassigned to duties with less food exposure, however, the illness may require exclusion from the facility altogether.

It's critical that food employees wash hands frequently and any time their hands may have become contaminated. Hand sanitizers are *not* a replacement for handwashing in the foodservice industry.

In addition to employee training and hygiene, receiving, storage, preparation, thawing, cooking, cooling, and service must all be closely monitored and controlled. Steps can be taken to control pathogen contamination and growth in food. Several primary control methods are detailed in Figure 2.

Our seniors are a precious gift. Many people are getting to know generations of their family members. Some children today are lucky enough to know their great-great grandparents and hear their stories of times past. This is a gift we need to treasure and protect. Don't allow contaminated food to be the reason why they fall ill or pass on. Make sure your seniors are well taken care of and are eating safe foods every day. **E**

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