

Patco Food Safety Consultants

October 2006 Edition



A Newsletter Focusing on Food Safety Issues
Volume 3

To Our Valued Customers

Patco Food Safety Consultants is proud to offer our valued clients a quarterly update relating to food safety issues and concerns.

Patco hopes you enjoy these newsletters and encourages any comments, questions or thoughts to be addressed to Patco at the following Fax # 1-315-652-5671.

The **LATEST DIRT** will focus on sanitation topics, regulatory issues, general housekeeping hints for clean establishments, updates on new laws relating to food safety issues and general discussions regarding the benefits of good sanitation and the impact it has on profits and safety in your establishments.

This issue will focus on Food Allergies and CARVER + Shock.



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FOOD ALLERGIES

Peter had always loved seafood, so he was surprised one day when he noticed his mouth tingling after eating shrimp. He'd heard that people could get food allergies, but he didn't connect his reaction to the shrimp because he'd always enjoyed shellfish with no problem.

But the next time Peter ate shrimp, the reaction was more severe: His lips swelled up and he felt his throat tighten. He also noticed that his fingers swelled up where he'd touched the shrimp. So Peter's dad made an appointment for him to see an allergist. The doctor did a skin test and found that Peter had a severe shellfish allergy - serious enough to put him in the hospital if he came into contact with shellfish again.

Allergies to food can be mild, like a little tingling in the mouth, but for many people they can be severe - causing difficulty breathing, for example - and even dangerous. Knowing what to expect and how to deal with food allergies can make a big difference in preventing serious illness.

90% of allergies are caused by:

- Milk Products
- Eggs
- Wheat
- Soy
- Peanuts
- Tree Nuts
- Fish
- Shellfish

Which Foods Cause Allergies?

The most common foods that cause allergies are milk, eggs, wheat, soy, peanuts, tree nuts, shellfish, and fish. Whether a person will have food allergies is partly influenced by heredity. So if one of your parents has a particular food allergy, you're about twice as likely to have one as someone whose parents don't have any food allergies.

What is a Food Allergy?

A food allergy is an immune system response to a food that the body mistakenly believes is harmful. Once the immune system decides that a particular food is harmful, it creates specific antibodies to it. The next time the individual eats that food, the immune system releases massive amounts of chemicals, including histamine, in order to protect the body. These chemicals trigger a cascade of allergic symptoms that can affect the respiratory system, gastrointestinal tract, skin, or cardiovascular system. Scientists estimate that approximately 12 million Americans suffer from true food allergies.

What are the common symptoms of a reaction?

Symptoms range from a tingling sensation in the mouth, swelling of the tongue and the throat, difficulty breathing, hives, vomiting, abdominal cramps, diarrhea, drop in blood pressure, and loss of consciousness to death. Symptoms typically appear within minutes to two hours after the person has eaten the food to which he or she is allergic.

When Food Allergies Are Severe

For people with a severe food allergy, eating a food or food component that they're allergic to can be life threatening. A life-threatening allergic reaction can make someone unable to breathe, cause a dangerous drop in blood pressure, and decrease blood flow in the body, especially to the brain, heart, and lungs. This is called **anaphylaxis** (pronounced an-uh-fuh-lak-sis) - and allergies that lead to anaphylaxis are called **anaphylactic allergies**.

Severe food allergies - to nuts and peanuts, in particular - sometimes cause anaphylaxis. People who have anaphylactic food allergies might also have seizures or become unconscious as blood flow to the brain decreases. Symptoms of anaphylaxis can happen quickly, and without medical treatment can cause death.

Immediate emergency treatment, including medications (such as epinephrine) that increase the heart rate and blood pressure, is needed to control any kind of severe allergic reaction. If you (or anyone else you know) have a severe food allergy and accidentally touch or eat that food and start to have a reaction, you should call 911 or immediately go to the nearest emergency department.

Dealing With Food Allergies

The only real way to treat a food allergy is to avoid the food in question. That means more than just not eating the food itself, though. For some foods, this means not even touching them or being around people who are eating them. It also means not eating any foods that may contain the food - or have any parts of the food in them - as ingredients.

If you've found out that you have a food allergy, your doctor or allergist or a registered dietitian can help you plan a healthy diet that includes the nutrients your body needs.

If you have food allergies of any kind, you'll become an expert in reading food labels.

As of January 2006, manufacturers of foods sold in the United States must list on their labels whether a food contains any of the eight most common food allergens (milk, eggs, fish, crustacean shellfish, peanuts, tree nuts, wheat, and soy) in any form. So the label should say whether that "hydrolyzed vegetable protein" in your food comes from peanuts, for example.

When you eat at restaurants, you'll need to let the waitstaff know about your food allergy. You'll also need to ask if items on the menu contain the food to which you're allergic.

If you're looking for meal ideas at home, check out the Resources tab for websites that offer recipes that eliminate many common allergy-causing ingredients.

If you have severe food allergies or severe allergic reactions of any kind, your doctor will probably recommend that you keep a **medical alert ID card** in your wallet or wear a **medical alert bracelet** that will clearly state your allergies in case of an emergency.

People with severe allergies should also carry an **epinephrine kit** with them at all times. An epinephrine kit is a single dose of epinephrine (also known as adrenaline) in a device that looks like a pen. It can be self-injected as a shot if the person comes into contact with something to which he or she is known to be severely allergic. Any teen with known severe allergic reactions, especially those that could lead to anaphylaxis, should keep one of these kits at home and one at school. Your doctor or allergist can talk to you about whether you need this prescription-only kit - and, if you do, how to use it properly.

Is there a cure for food allergies?

Currently, there are no medications that cure food allergies. Strict avoidance is the only way to prevent a reaction. Most people outgrow their food allergies, although peanuts, nuts, fish, and shellfish are often considered lifelong allergies. Some research is being done in this area and it looks promising.

Should I stop eating the food that I *think* I'm allergic to?

Randomly taking food out of your diet can leave you with an unbalanced diet that can cause other health problems. Additionally, you may become frustrated because you reach a point where you believe that everything you eat is causing a reaction. Seek the help of a doctor before making significant changes in your diet.

What is the best treatment for a food allergy reaction?

Epinephrine, also called "adrenaline," is the medication of choice for controlling a severe reaction. It is available by prescription as a self-injectable device (EpiPen® or Twinject®).

What is the difference between food allergy and food intolerance?

Many people think the terms *food allergy* and *food intolerance* mean the same thing; however, they do not. A "food intolerance" is an adverse food-induced reaction that does not involve the immune system. Lactose intolerance is one example of a food intolerance. A person with lactose intolerance lacks an enzyme that is needed to digest milk sugar. When the person eats milk products, symptoms such as gas, bloating, and abdominal pain may occur.

A "food allergy" occurs when the immune system reacts to a certain food. The most common form of an immune system reaction occurs when the body creates immunoglobulin E (IgE) antibodies to the food. When these IgE antibodies react with the food, histamine and other chemicals (called "mediators") cause hives, asthma, or other symptoms of an allergic reaction.

What information should I provide my doctor?

Keep a food diary, for 1 to 2 weeks, of everything you eat, what symptoms you experience, and how long after eating they occur. This information, combined with a physical examination and lab tests, will help the doctor determine what, if any, food is causing your symptoms.

The good news about food allergies is that kids and teens with certain food allergies, such as allergies to eggs, have a good chance of outgrowing them as adults. But some people never outgrow their food allergies.

RESOURCES:

- ✓ www.kidshealth.org/teen/food_fitness/nutrition/food_allergies.html
- ✓ www.foodallergy.org/questions.html

CARVER + Shock

CARVER + Shock may be new to you, but as a successful retailer the vulnerability of food from intentional contamination is not new. The full name is CARVER + Shock method for Food and Agriculture Sector vulnerability assessments. "The CARVER + Shock methodology was developed under Homeland Security Council leadership by the Food and Drug Administration (FDA), U.S. Department of Agriculture, and Department of Defense with coordination by the Department of Homeland Security, the Central Intelligence Agency, and the Federal Bureau of Investigation." ¹

Post 9/11, everyone is looking for better ways to protect the food supply, especially from intentional contamination. Previous examples of intentional contamination include: ⁵

- 1984 Oregon Cult members added *Salmonella* to 10 salad bars
751 illnesses 45 hospitalized
Purpose: to alter an election
- 2003 – Maine Coffee at local Church social adulterated with arsenic
15 illnesses 1 died

According to the 2005 FDA Food Code, risk "means the likelihood that an adverse health effect will occur within a population as a result of a hazard in a food". CARVER + Shock is one of many methods that can be used to assess risks. It refers to an "offensive targeting prioritization tool that has been adapted for use in the food sector."² It is being used for risk assessment for the potential of deliberate food borne contamination.

- **Criticality** - measure of public health and economic impacts of an attack
- **Accessibility** – ability to physically access and egress from target
- **Recuperability** – ability of system to recover from an attack
- **Vulnerability** – ease of accomplishing attack
- **Effect** – amount of direct loss from an attack as measured by loss in production
- **Recognizability** – ease of identifying target

In addition, the modified CARVER tool evaluates a seventh attribute, the combined health, economic, and psychological impacts of an attack, or the **SHOCK** attributes of a target."² The news media impact fits here.

This method includes a scale for each step and a final value. Some industry discussions indicate that members are concerned that using one final number does not effectively reflect the risk. It is simpler to have a single number representing the analysis, but it may not reflect the risk or prioritization of the risk. ⁴

Some very key points are:

1. Differentiate between perceived and real risks.
2. Insist on open and honest communication

The steps for completing CARVER + Shock are:

Step 1 – Establish Parameters

Define your product. What part of the food chain? What impacts (illness, death, economic, etc)? What type of attacker and attack? What agent will be used? Will your current or added processes minimize or eliminate the risk? For example, cooking will destroy bacteria, and pH of some products may minimize other risks, but how can you minimize the risk of chemical contamination?

Step 2 – Assemble experts. Experts must include people who are familiar with the actual process as well as people with technical food safety knowledge relevant to the process.

Step 3 – Detail the Food Supply Chain

This may be a flow chart indicating each step of the process. These steps are broken down into components (for example raw materials, receiving area, processing area, storage area, shipping area, etc.) and to the smallest possible nodes (for example specific piece of equipment).

Step 4 – Assigning Scores

The nodes with the highest overall scores are at highest risk – most attractive targets for an attacker.

Step 5 – Applying what has been learned. A counter measure plan should be developed to minimize the nodes attractiveness as a target.

Examples of counter measures can be as simple as locking an access door or limiting access to a piece of equipment.

If you think that this sounds like HACCP (Hazardous Analysis Critical Control Points), remember that HACCP is a risk assessment, and other than the scores, parallels much of the same process as CARVER + Shock. Just like HACCP, you will need a variety of experts and you will not be able to complete the process in just a few minutes. The better the input data, the better the results.

For more information and work sheets, the CARVER + Shock Primer is listed as resource number 2. Industry perspective and additional information can be found using the other resources. FDA is looking for partners to complete CARVER + Shock vulnerability assessments for specific segments of the retail food industry under the Strategic Partnership Program Agroterrorism (SPPA) Initiative⁶. Contact: LeeAnne Jackson (LeeAnne.Jackson@fda.hhs.gov) if you are interested.

¹ Brackett, Robert E., Ph.D. Director, Center for Food Safety and Applied Nutrition statement of May 17, 2005 before Subcommittee on the Federal Workforce and Agency Organization Committee on Government Reform
www.fda.gov/ola/2005/foodsupply0517.html

² CARVER + Shock Primer
www.ngfa.org/pdfs/CARVER_shock_primer.pdf#search=%22CARVER%20shock%22

³ Food Safety The Federal Perspective
www.ift.org/sections/oregon/Lori%20Gregory.ppt.pdf#search=%22CARVER%20%2B%20shock%22

⁴ Risk assessment to drive research for Contaminant detection
www.ift.org/fooddefense/6-Ryan.pdf#search=%22CARVER%20%2B%20shock%22

⁵ Threat Assessments and Strategic Partnership Program Agroterrorism (SPPA)
August 2006

⁶ Strategic Partnership Program Agroterrorism (SPPA) Initiative
<http://www.cfsan.fda.gov/~dms/defprog.html>