Food and Health Safety
Part II

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Chemical Hazards

• Examples of chemical hazards:
  
  • “Traditional” chemicals (i.e.: antibiotics, sanitizers, cleaning agents, pesticides, fertilizers, natural toxins)
  
  ■ Food additives over allowable limits
  
  ■ Heavy metals (i.e.: lead, mercury)
Physical Hazards

• May cause illness or injury (including trauma)

• Account for about 20% of complaints

• Examples of physical hazards:
  
  • Extraneous matter or foreign objects (physical items not normally found in food)
  
  • Unwanted portions of food (bones, pits, shells)
Physical Hazards Continued

- Glass
- Stones
- Pits, bone, shells
- Metal
- Hair
- Toothpicks

- Wood
- Bandages
- Jewelry
- Chips from plates and cups
- Plastic Bread Tags
Allergies and Intolerances

- Food Adverse Reactions
  - Food Allergy
  - Anaphylaxis
  - Food Intolerance
Anaphylaxis

- Immune system response
- Life-threatening
- Can involve many organs and parts of the body, including:
  - Respiratory system
  - Cardiovascular system
  - Central nervous system
- 1/1000\(^{th}\) of a peanut can cause death in an individual with a sensitivity to peanuts
Allergens

• Allergic reactions:
  • Affect 1-2% of adults and 4-6% of children
  • May occur within minutes or take 1-2 hours
  • Can range from mild to severe and may be life-threatening
  • Can become more severe with repeated exposure

• Nearly 50% of recalls are allergen-related
Sources of Food Allergens

- Food ingredients
- Mixing leftovers from different recipes
- Improper clean-up
- Cross-contamination by dust or pieces of the allergen (equipment or utensils)
- Incorrect information given to consumer
Health Canada / CFIA Allergen List

- Peanuts
- Tree nuts
- Sesame seeds
- Milk
- Eggs
- Fish
- Crustaceans and shellfish
- Soy
- Wheat
- Sulphites
CFIA’s Allergy Aware Program

• Provide ingredient information:
  • Food Allergy Chart for at least three main menu items, or
  • Complete ingredient information on at least three main menu items, or
  • Complete ingredient information on at least three special meals
CRFA’s Allergy Aware Program

• Menu or printed list

• Allergy Chart (displayed, not distributed)

• Recipe binder
  • Ingredient information from suppliers
  • Controlled by senior kitchen manager

• Designated employee

• Banquet concerns
  • Inquire about allergies
  • Add a clause to the contract
CFIA’s Allergy Aware Program

• Review recipes and identify problem foods

• Establish a policy emphasizing accuracy of information

• Train employees

• Inform customers

• If in doubt, **find out**, or **don’t serve**

• Establish emergency procedures
What is “Allergen Clean?”

• All food contact surfaces are visibly clean – **NO** visible build-up or reside remains or is allowed to re-contaminate

• Areas around or above the product zones must be free of allergen-containing product or dust (i.e.: ledges, overhead pipes, etc.)
Frozen Storage

• Food must be stored at -18°C (0°F) or lower
• Check unit operation daily
• Measure air temperature daily
• Use FIFO
• Check for ‘freezer burn’
• Use stock within 3 months
• Keep doors closed
• Defrost regularly
Freezing Foods

• -18°C (0°F)
• Pathogens are dormant, not dead
• Do not refreeze raw potentially hazardous food
• Freeze fish to kill parasites
• Freeze pork to prevent trichinosis
Dry Storage

• 10°C to 21°C (50 °F to 70°F)
• Humidity 50 to 55%
• Foods 15 cm (6 inches) off the floor
• Away from direct sunlight or heat
• Store in original packages until open
• Transfer to labelled airtight containers
• Label with delivery date – use FIFO
• Discard if past ‘best before’ date
Chemical Storage

• Chemical storage areas should be:
  • Located in dry, well-lit, monitored areas
  • Separate from food and food contact surfaces

• Chemicals should be:
  • Kept in original packaging with instructions
  • Kept well-covered after initial use to prevent contamination
Food Preparation

- Dangers:
  - Temperature danger zone
  - Contamination from food handlers
  - Contamination from equipment and environment
  - Contamination from other foods (allergens, potentially hazardous raw foods)

- How do you control or prevent these dangers?
Thawing

- Under refrigeration
- Under cold, running water
- As part of cooking process
- Using a microwave
Cooking

• Must reach a minimum temperature for a specified period of time
  • Dependent on type of food, fat content and moisture content
• All parts of the food must reach the required temperature

USDA Recommended Safe Minimum Internal Temperatures

145 F = 62 C
160 F = 71 C
165 F = 74 C
Ensuring Thorough Cooking

• Thorough cooking is aided by:
  • Cooking in small batches
  • Stirring frequently
  • Cooking in a continuous process
  • Handling dressing separately
Microwave Cooking

- Microwaved food can have “cold spots”
- Rapid heating may not allow enough time to kill microorganisms
- Ovens lose power over time
Cooling

• After cooking:
  • From 60°C (140°F) to 20°C (68°F) within two hours, then
  • To 4°C (40°F) within four hours

• From room temperature:
  • To 4°C (40°F) within four hours

• Always cover, label & date foods:
  • Do not use cloths
Reheating

• For hot holding:

  • Reheat to an internal temperature of 74°C (165°F); and
  • Reheat quickly
Thermometer Use

• Used to check temperatures of food throughout the process of cooking and using
• Clean & sanitize after each use
• Insert into the thickest/centre of food
• Calibrate
Self-Serve and Display

• Provide serving utensils for each item for a meal or on a food bar
• Label each item on the food bar
• Maintain proper holding temperatures
• There should be sneeze guards to protect food
• Never mix new food with old food
• Provide people with clean plates and silverware
Re-Serving Foods

• Never re-use ice
• Never re-serve bulk condiments (i.e. cream/sugar)
• Bread leftover from a customer must not be served to another customer
• Liners for bread baskets must be changed between guests
• Discard single service items such as plastic cutlery after its use
• Sealed condiments (i.e. creamers and sugar packets) can be re-served
Injury

• Cuts can be a source of *Staphylococcus aureus* which produces a heat-stable toxin

• How to handle an injury in the workplace:
  • Clean and sanitize contaminated area
  • Destroy any food contacted
  • Bandage wound and cover with a disposable, waterproof plastic glove
Good Employee Hygiene

• Proper Attire
• Hair Restraint
• Avoid behaviours that contaminate food
• Practice proper handwashing
• Use gloves properly
Proper Attire

• Clean outer clothing, aprons and cleaning cloths
• Uniform cleaned daily
• Uniforms, aprons and cloth changed when contaminated
• Uniform put on and worn only at work
• Clean, non-slip shoes worn only at work
Good Employee Hygiene

• Hair and face have millions of bacteria
• Hair and beard restraints prevent hair from contaminating food or food contact surfaces
• Help prevent touching hair and beards
• All hair should be covered with restraint
Behaviour

- Prohibited behaviour during food preparation, service and cleaning:

  - No eating
  - No drinking
  - No smoking
  - No chewing gum

  - No spitting
  - No coughing or sneezing
  - No nail polish or false nails
  - Bath daily
Good Employee Hygiene

• No Jewelry Policy
  • Jewelry harbours bacteria
  • Jewelry can be a physical hazard
  • Jewelry can be caught on equipment
  • Medic Alert bracelets and necklaces are accepted
  • Also, no nail polish
Handwashing

• Why?
• When?
• How?
Professional Handwashing Practice

• Use a small amount of fluorescent lotion

• Rub thoroughly on hands and wrists

• Look under a black light (UV lamp) to see any contamination

• Wash hands and check under UV light again
Handwashing Reality

• Never use anti-bacterial soap
• The action of the water alone forces the bacteria off the hand
• Use plain clean soap
• Wash thoroughly and dry with a clean cloth including under fingernails
• Do not touch anything other than the food
• Wash frequently during food prep.
Use of Gloves

• Wash hands before putting on gloves

• Disposable gloves should be changed or washed when hands would be washed:
  • Consider nitrile gloves to avoid latex allergies
  • Discard after four hours of use
  • Discard if torn or damaged

• Reusable gloves should be washed as if they were hands
Visitors

• Wear clean protective clothing provided by foodservice operator

• No contact with food or food contact surfaces
Vinegar

- The great non-toxic cleaner and preservative
- White vinegar - acetic acid PH 2.4
- Apple cider vinegar PH 2.4 - 3.4
- Lemon Juice PH 2.5
Wooden Cutting Boards

• Stainless Steel surfaces are generally recommended – home counter tops must be solid and not prone to cracks and crevices
• Plastic must be thoroughly cleaned (in dishwasher is best)
• Glass cutting boards are easiest to clean (but noisy)
• Wooden cutting boards – nature’s miracle
• Bacteria innoculated into wood was absorbed by the wood and reduced by 98%
• More importantly, overtime bacteria did not grow on wood – it did on plastic
• Be careful of cross contamination
The Next Time You Buy A Product

• Think about how they are preserving it:
  • Are they using chemical preservatives
  • Are they using an acid??
  • No Air?
  • It is dry?
  • It is held stable by a vacuum?
• Think about this for cosmetics as well
Health and Food Safety Certificate

• NFSTP – National Food Safety Training Program
• Do it online – need to find a proctor for exam – there is a way to do this online as well
• Online Program Cost - $43.95 plus tax
• Certificate Exam – 27.75 plus tax

http://learn.nfstp.ca/