



The National Training Institute  
for Child Care Health Consultants

# Environmental Health in Child Care



- Your name
- Your agency
- Date of training



# Introductions

- Please share:
  - Your name
  - Your agency
  - One thing you do at home or at work to improve the air or water quality or to reduce the use of pesticides



# Training Objectives

- Describe why children are vulnerable to environmental hazards
- Identify leading health risks to children
- List ways to prevent and manage exposure to hazards
- Know how CCHCs can promote a healthy child care environment



# Factors Influencing Effects of Toxins on Human Health

- Amount or degree of exposure to the toxin
- Duration of exposure
- Toxicity or strength of toxin
- Organism factors, such as age, sex, and health status of the person exposed



# Children's Vulnerability

- Developmental Characteristics and Lifestyles
  - More contact with the ground
  - More time outdoors
  - More hand to mouth activity
  - Less varied diet



# Children's Vulnerability (continued)

- Biological Immaturity
  - Higher metabolic rate
  - Higher rate of absorption
  - Less able to excrete toxins
- Sensitive Periods of Rapid Organ Development



# Outdoor Air Pollution

- Sources include: factories, power plants, dry cleaners, cars, buses, trucks, agricultural activities, and windblown dust
- There are 189 known air pollutants, most notably: ozone (smog), breathable particulate matter, lead, sulfur dioxide, carbon monoxide, and nitrogen oxides





# Indoor Air Pollution

- Sources include: tobacco smoke, radon, biological contaminants, combustion by-products, volatile organic compounds, particulate matter
- Air within homes and other buildings is often more seriously polluted than the outdoor air.
- Children spend as much as 90% of their time indoors.



# Acute Health Effects of Air Pollution Exposure

- Usually manifests with respiratory disorders
- Respond immediately.
  - Identify suspected pollutants.
  - Remove or decrease exposure.
  - If pollutant is indoors, increase ventilation.



# Chronic Health Effects of Air Pollution Exposure

- Asthma
- Cancer
- Respiratory Infections
- Impaired Cognitive Performance



# Asthma

- Most common chronic childhood disease, affecting 7-10% of all children under age 18.
- Children with asthma have sensitive airways in their lungs that are easily inflamed, producing a chain of events that make it difficult to breathe.
- Indoor and outdoor air pollutants are “triggers” to the onset of asthma attacks and increase the severity of asthma inflammation.



# Chronic Health Effects of Air Pollution Exposure

- Cancer
  - Leading cause of lung cancer is environmental tobacco smoke.
  - Second leading cause is radon.
- Respiratory Infections
- Cognitive Performance



# Detecting Air Pollution

## Indoor Air Pollution

- Look for symptoms. If symptoms are observed, note the time and place and how many children are affected.

## Outdoor Air Pollution

- Local TV and radio stations and newspapers provide updates on outdoor air quality.
- In rural areas, state and local health departments and regional Environmental Protection Agency offices have this information.



# Preventing and Managing Air Pollution Exposure

- Two primary methods:
  - Removal or reduction of the source of pollution
  - Increase ventilation



# Activity: Assessing Indoor Air Quality

- Work with a partner to complete the “Assessing Indoor Air Quality” worksheet.
- Take 5 minutes to complete the checklist.
- Be prepared to discuss your results.





# Pests and Pesticides

Pesticides are “any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms like bacteria and viruses” (EPA, 2002c).



# Sources of Pesticides

- Consuming water and foods with pesticide residues
- Breathing contaminated air
- Skin absorption
- Unintentional poisoning
- Contact with and treatment of pests such as mice, rats, and cockroaches



# Routes of Exposure Indoors

- Cockroach sprays and baits
- Rat and other rodent poisons
- Flea and tick sprays, powders, and pet collars
- Kitchen, laundry, and bath disinfectants and sanitizers
- Products that kill mold & mildew
- Head lice shampoos
- Insect repellents



# Routes of Exposure Outdoors

- Commercial spraying from agricultural sites, golf courses, or power lines release pesticides into the air, dust and soil.
- At home, young children are exposed to pesticides, herbicides, and fertilizers used on lawns and in gardens.
- On most playgrounds, wood is treated with wood preserving pesticides such as chromated copper arsenate (CCA).



# Acute Health Effects

- Irritation of the eyes, nose, and throat, mild dizziness, nausea, and vomiting, diarrhea, headaches, skin rashes, severe illness and death (AAP, 1999)



# Chronic Health Effects

- Damage to the nervous system, reproductive system, endocrine system, immune system, cancer, chronic injury to the lungs, liver, and kidneys, and birth defects.
- For children specifically, pesticides have been associated with brain cancers and childhood leukemia (AAP, 1999).



# Integrated Pest Management

- Is a holistic approach to long-term pest control
- Uses chemical and non-chemical methods
- Utilizes pest control alternatives least toxic to people and the environment, and uses the least amount of treatment necessary



# IPM Strategies for Indoors

- Repair screens and caulking around windows.
- Vacuum up eggs of fleas before they hatch.
- Keep kitchen clean and free of food/crumbs.
- Monitor sticky traps to find new infestations quickly.
- Use physical means to control pests, such as fly swatters.





# IPM Strategies for Outdoors

- Avoid lawn care practices that rely on herbicides and insecticides
- Choose plants suited to the soil and climate of the site.
- Avoid applying pesticides around the perimeter of the building.



# Educate Staff about IPM

- Designate IPM coordinator.
- Develop protocol for monitoring pests and reporting problems.
- Educate all building occupants of IPM protocols.
- Understand state laws.



# Choosing and Using Pesticides

- Select the least toxic pesticides and cleaning products.
  - Consider form of pesticide.
  - Avoid those labeled “Warning” or “Danger.”
- Advise staff regarding how to use pesticides effectively.



# Chemical Application File

- Should be maintained at child care facility
- Must have:
  - Application date
  - Treatment location
  - Info sheet or Material Safety Data Sheet (MSDS)
  - Letter of notification to parents
  - Description and date of all non-chemical remediation used before chemical application
- Should be kept at least 2 years



# Activity: Environmental Topics of Special Interest

- Choose one of the “Environmental Topic of Special Interest” sheets.
- Read your sheet silently.
- Be prepared to share one or two items from the sheet with the large group.



# Sources of Drinking Water Contamination

- Public water supplies
- Well water



# Routes of Exposure

- Drinking contaminated water
- Eating raw foods irrigated or rinsed with contaminated water
- Eating fish or shellfish from polluted water
- Skin exposure from swimming/wading in polluted water (AAP, 1999)



# Health Effects of Exposure

- Acute reactions may include vomiting or diarrhea.
- Long term exposure to some pollutants may cause:
  - gastrointestinal problems
  - skin irritations
  - cancer
  - reproductive and developmental problems
  - other chronic health effects





# Detection of Drinking Water Contamination

- Requires professional expertise.
- Suspected water contamination must be reported to state health and environmental agencies and to the water supplier.
- Private wells should be tested at least annually (AAP, 1999).



# Preventing Exposure to Contaminated Water

- Public Water Supply
  - Read the Consumer Confidence Report to learn whether the system meets drinking water standards.
- Well Water
  - Establish a policy for regular testing.
  - Use a certified water filter.



# Other Water Concerns

- Maintain a water supply for emergencies.
- Encourage safe disposal of used motor oil and toxic trash such as batteries.
- Get involved in local efforts to protect the water.



# The Role of the CCHC

- Learn about environmental risks in your state and county.
- Know how to link facilities to experts willing to work with child care staff.
- Understand and communicate key environmental health concepts.



# The Role of the CCHC (continued)

- Assist the child care staff to:
  - Identify and prioritize the most critical environmental hazards.
  - Establish policies for managing these hazards.
  - Develop strategies for implementing the policies.



# Activity: Web of Knowledge

- Move to form a circle.
- Work with all participants to build a “Web of Knowledge” with the information you learned today.



# Evaluation

- Please take 5 minutes to complete.