Safe and Healthy Child Care Centers

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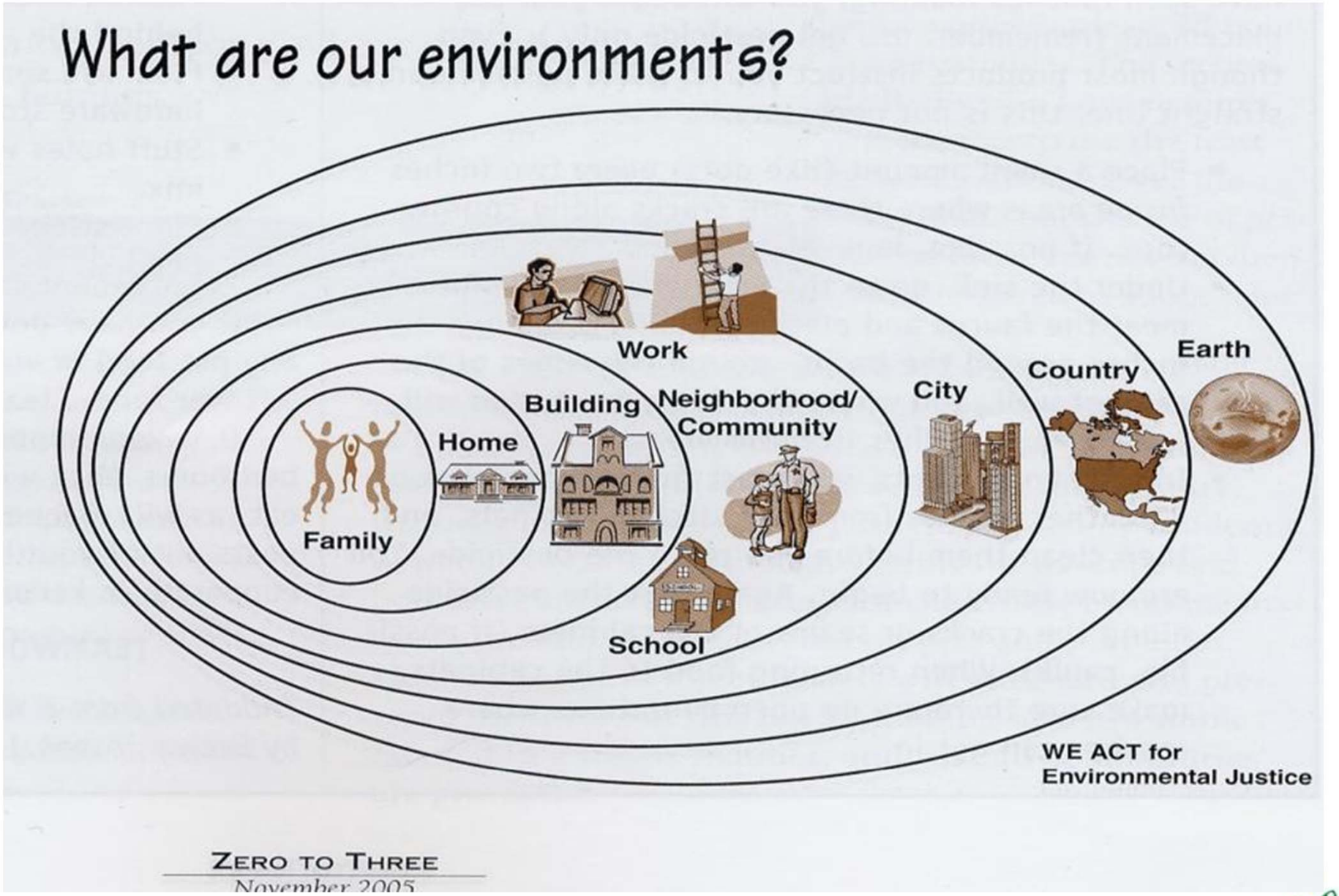


* with permission from Zero to Three, November 2005

Why is the quality of the environment in ECE so important?

- Children are especially vulnerable to hazards in their environment that can cause:
  - injury
  - poisoning
  - asthma or other respiratory problems
  - disease

Why is the quality of the environment in ECE so important?

- There are more than a million children in child care in California
  - 705,077 in Child Care Centers
  - 362,636 in Family Child Care Homes
- >45,000 licensed child care facilities in California
- >146,000 staff

Children can't protect themselves – they need us to protect them

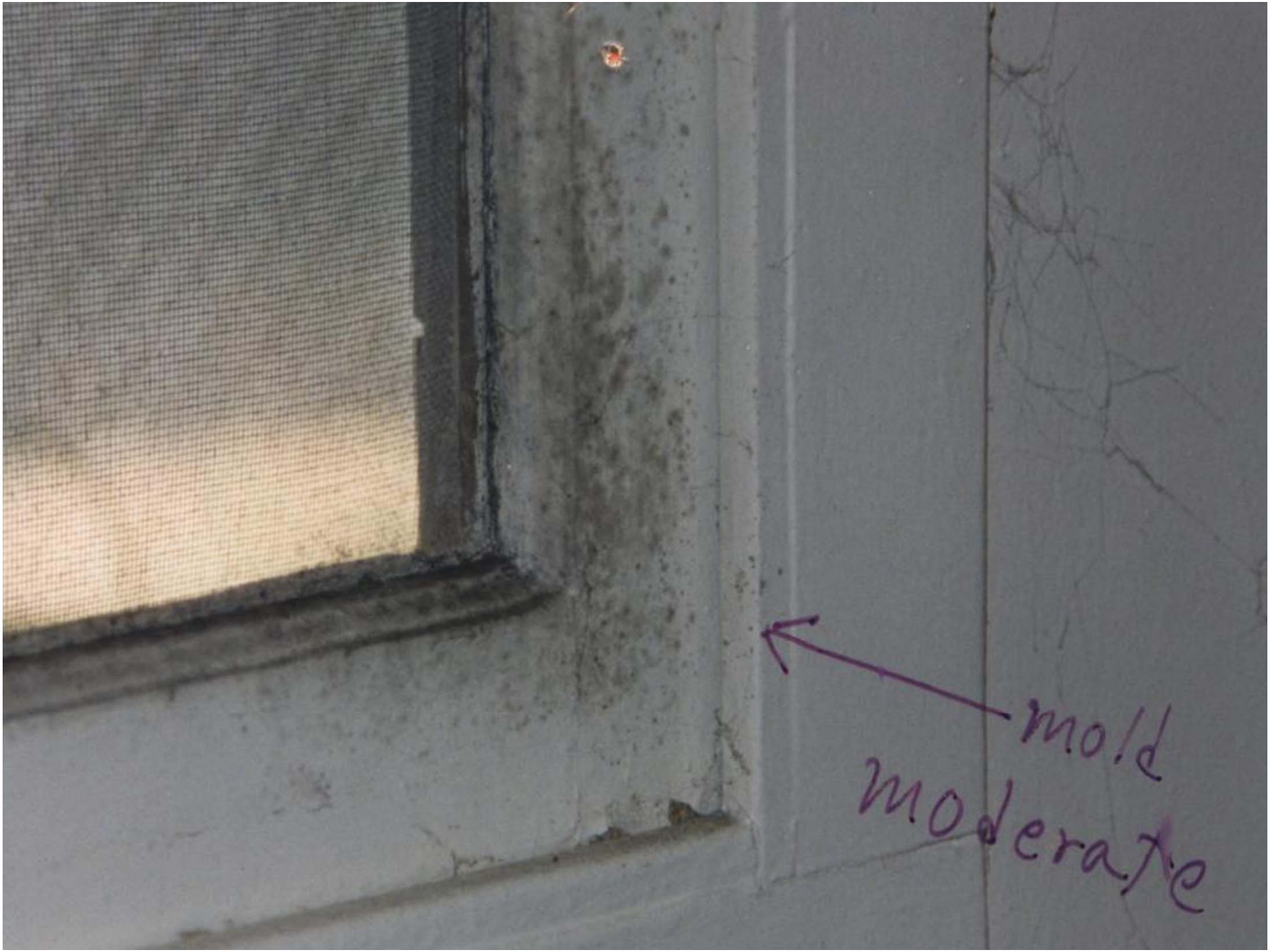
Slide 4

V1 Many children spend most of their active days in ECE environments

Victoria, 2/23/2012

Childcare and preschool environments may be healthier than a child's home environment:

- Substandard housing is common, especially for low-income children;
- Several studies suggest children in child care/preschool are exposed to less lead than children at home.


mold
moderate

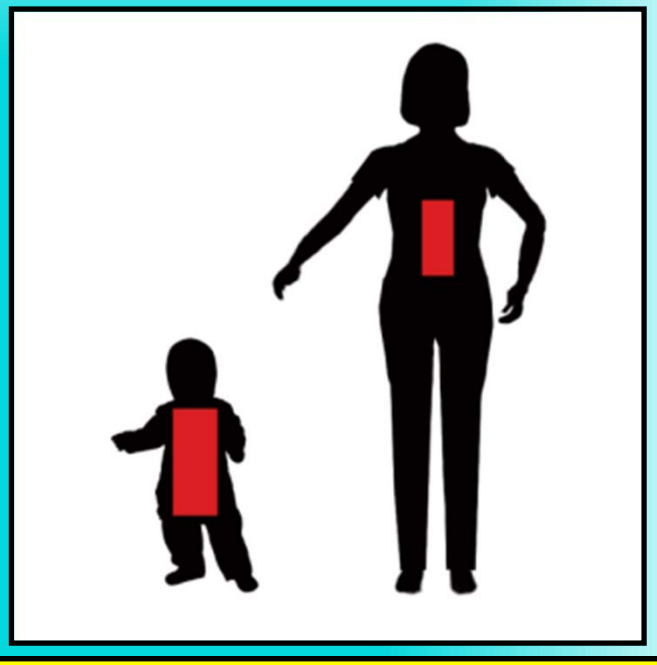
Why children are more vulnerable:

- They have higher exposures because they:
  - Have frequent contact with the ground or floor
  - Put things in their mouths
  - Eat a less a varied diet
  - Eat, drink, and breathe more per pound of body weight
  - Spend most of their time indoors where levels of contaminants are higher
- They are still growing
  - Their organs (like the brain) are still developing
- They can't recognize hazards
  - Can't read labels
  - Get into everything

WHY ARE CHILDREN MORE VULNERABLE?

1. Higher exposures

- Frequent contact with the ground or floor, where pesticides collect
- Hand-to-mouth activity
- Less varied diet
- Eat, drink, and breathe more per kg
- Spend most of their time indoors



If a pesticide is present in air, food or water, a greater amount will be taken in by a child in proportion to their body size or weight than by an adult.

Major Environmental Hazards Discussed Today

- Lead
- Chemicals in household products
  - Cleansers & disinfectants
  - Pests and pesticides
  - Mercury
- Air pollution
  - Outdoor
  - Indoor
- Asbestos
- Mercury
- Emerging concerns

Universe of Environmental Health Concerns Is Larger

Resources: CCHP Environmental Health Training Curriculum
http://www.ucsfchildcarehealth.org

Asbestos	Energy Efficiency	Lead	Poison/Chemicals
Asthma	Env. Curriculums	Mercury	Radon
Carbon Monoxide	General Health	Mold	Recycling
Diapers	Handwashing	Ozone	Secondhand Smoke
Drinking Water	Indoor Air Quality	Pesticides	Sun Safety
Emergency Action	Infectious Disease	Pets	Treated Lumber

Lead

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Health Effects of Lead

Lead causes:

- Damage to the nervous system, kidneys
- Behavioral problems, lower IQ, decreased stature and slow growth rates, impaired hearing

- Children who are iron deficient have higher lead levels and suffer more severe effects
- Children who have high lead levels often do not have obvious symptoms, so checking blood lead levels in young children is important

Lead in Childcare is a National Problem

An EPA study found:

- 14% of licensed child care centers had lead paint hazards
- 26% of childcare centers were built before 1960 when lead was still used in paint
- Centers with African American children were 4 times more likely to have lead paint (30% vs 4%)

CDC Lead Screening Recommendations

- Blood lead test is recommended for all children who:
  - Live in housing built before 1950
  - Live in housing built before 1978 if the children are under age 2
  - Live in poverty
  - Are developmentally delayed
  - Are an immigrant or internationally adopted
  - Have siblings who have been found to have lead exposure

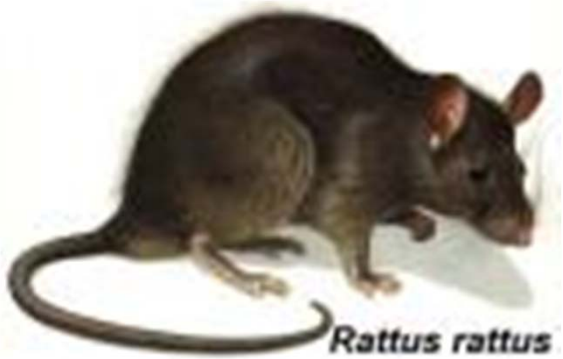
What You Can Do About Lead:

- Review California Childcare Health Program lead training
- Evaluate risk factors for lead hazard in your facility:
  - Was it built before 1978, especially before 1960?
  - Does it have peeling paint?
  - Is it near a major highway, auto repair shop or manufacturing facility ?
  - Does it have bare soils ?
- Other
  - Contact your county health department or hire a licensed lead inspector if you find or suspect risk factors
- Evaluate community risk factors
  - Age of housing stock in your community
  - Presence of industrial or manufacturing facilities
- Educate families
- Remove lead hazards!

Lead Poisoning Prevention Resources

- CCHP Lead Training Curriculum
  http://www.ucsfchildcarehealth.org
- Local Public Health Department
- California Childhood Lead Poisoning Prevention Branch (CCLPPB)
  http://www.dhs.ca.gov/childlead/
- U.S. Environmental Protection Agency (EPA)
  http://www.epa.gov/lead/resources.htm

Pests and Pesticides



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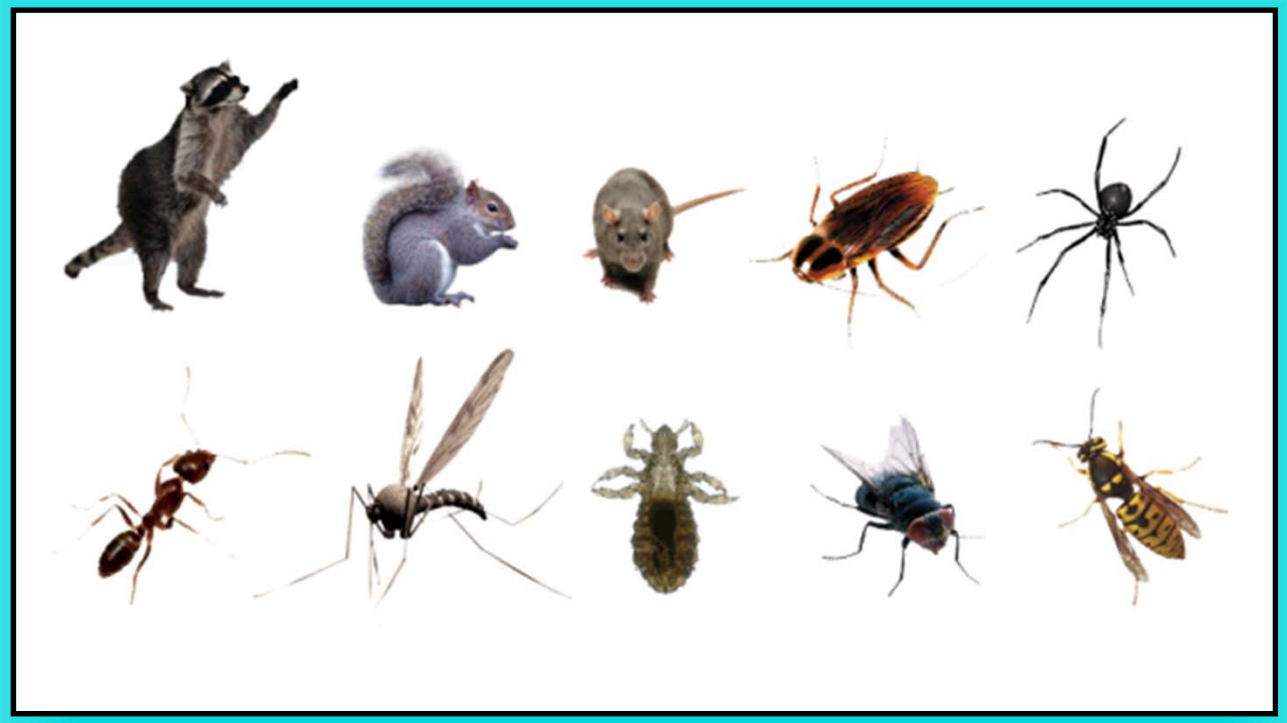
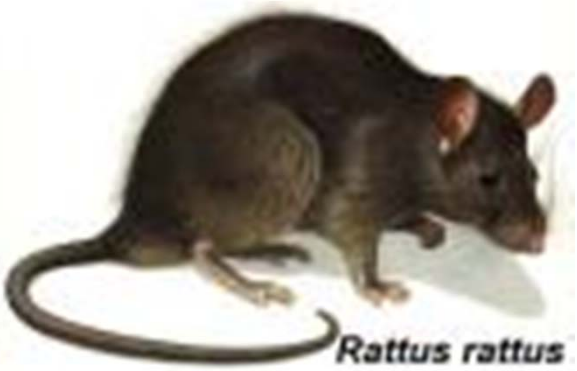
WHAT IS A PEST?



A pest is any living organism that causes damage or discomfort, or transmits or produces disease.



90% of California child care centers reported at least one pest problem

Pesticide Use in California Child Care Centers

Used any pesticide at least once:	55%
Used spray or fogger:	47%

WHAT PROBLEMS DO PESTS CAUSE?

Health Problems

Building Damage

Parents & staff are upset when they see pests

Spread Bacteria

Allergies

Trigger Asthma

Rats Eat Wires

Mold & Termites Damage Building

Concerns about pesticide exposure:

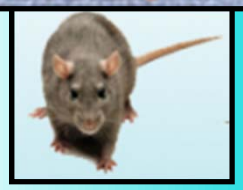
- Short term:
  - Irritated airways
  - Burning eyes
  - Dizziness
  - Nausea
  - Skin reactions

Integrated Pest Management (IPM): Controlling pests with less pesticides

- Uses least toxic control methods

- IPM Principles:
  - Make it hard for pests to enter
  - Remove their food sources
  - Remove their water sources
  - Get rid of their hiding places
  - Only when all other methods have failed, use least toxic pesticide choices

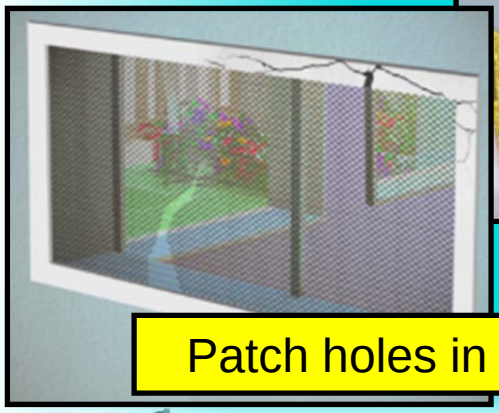
PREVENTION: KEEP PESTS OUT



PREVENTION: KEEP PESTS OUT

Seal or block gaps around doors. Install doorsweeps.

Seal gaps around pipes



Patch holes in screens

PREVENTION: KEEP PESTS OUT

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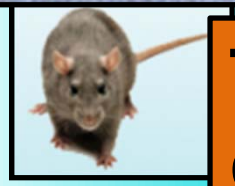
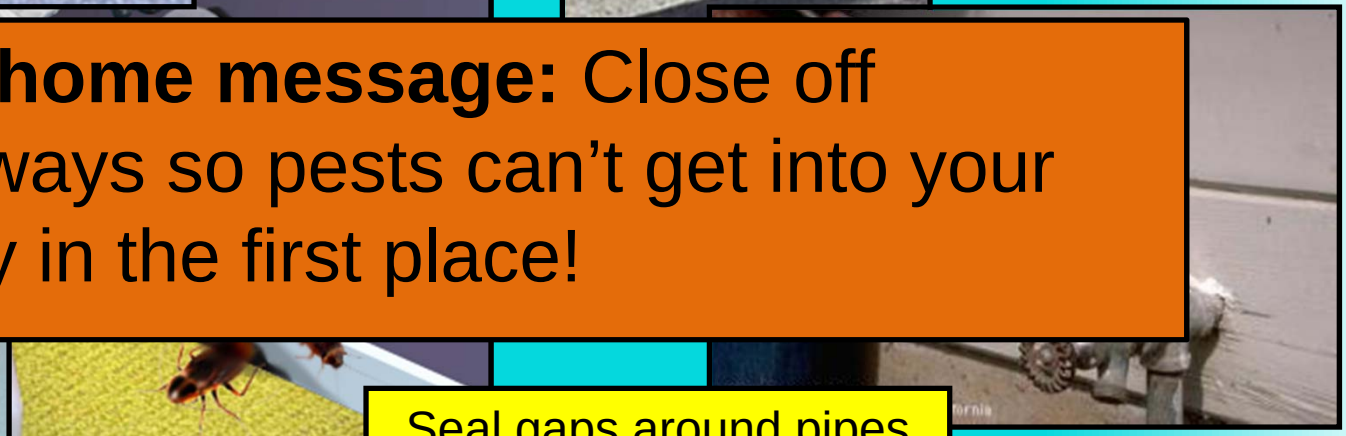


Take home message: Close off entryways so pests can't get into your facility in the first place!



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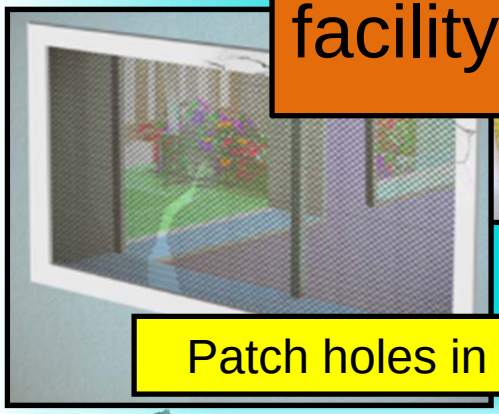
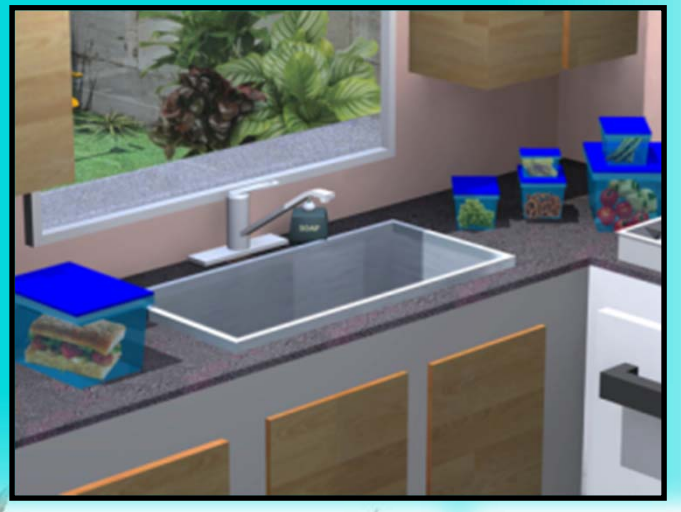


Patch holes in screens

PREVENTION: REMOVE PESTS' FOOD & WATER



PREVENTION: REMOVE PESTS' FOOD & WATER

Clean up food before pests are attracted to leftovers

Eliminate sanitation & garbage problems

Eliminate standing water, clogged sinks & leaking faucets

Store food & art supplies in sealed containers

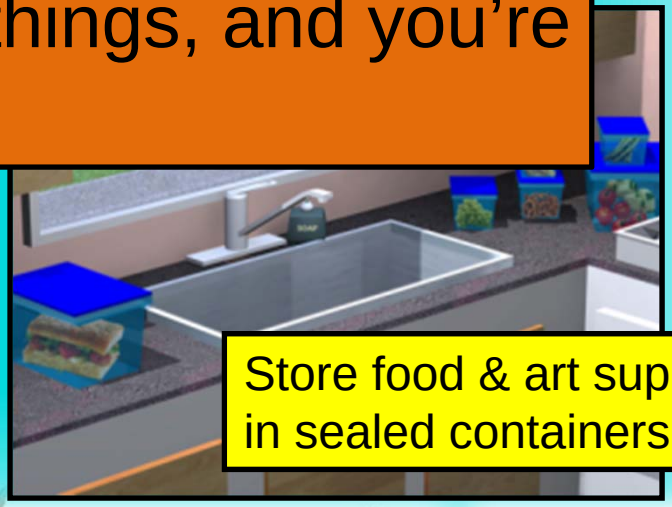
PREVENTION: REMOVE PESTS' FOOD & WATER

Clean up food before pests are attracted to leftovers

Eliminate sanitation & garbage problems

Take home message: Pests need food and water to survive. Take away their access to these things, and you're taking away their diet!

Eliminate standing water, clogged sinks & leaking faucets



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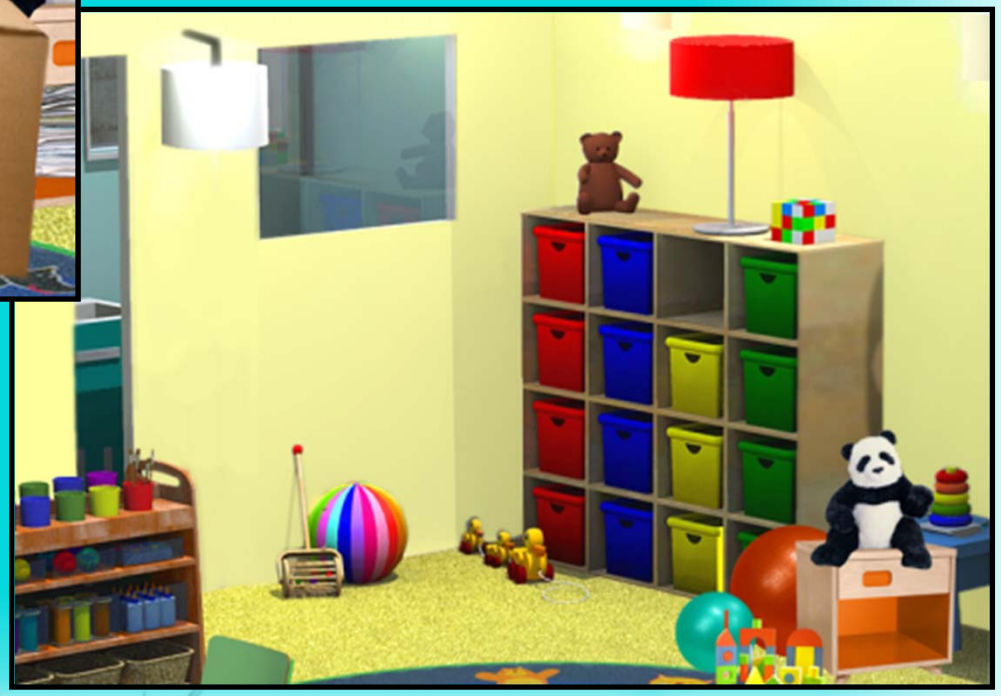
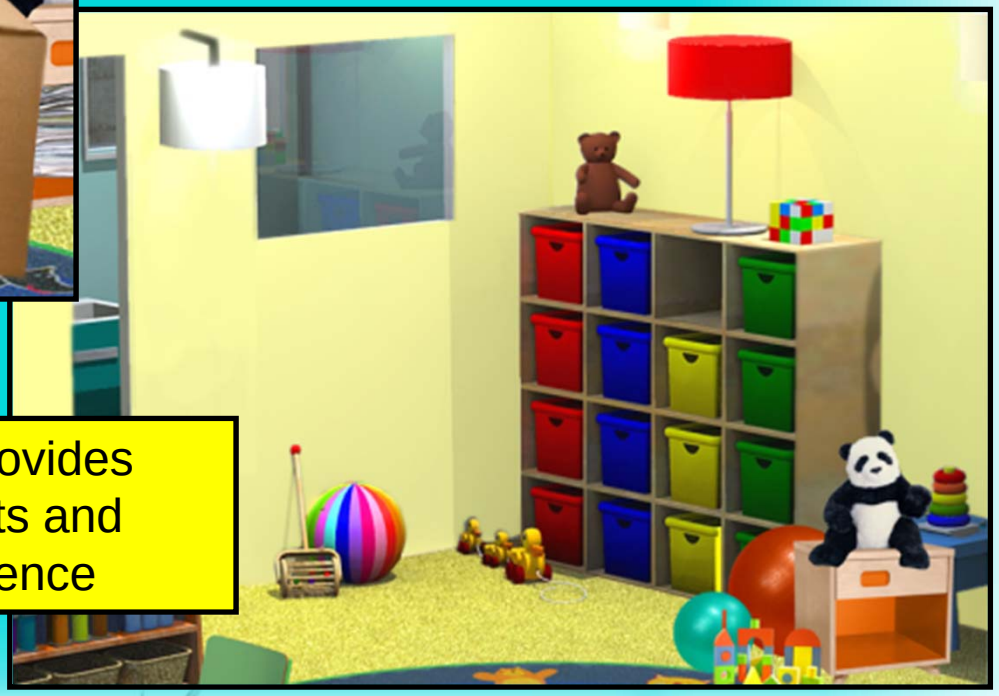
PREVENTION: REMOVE PESTS' SHELTER



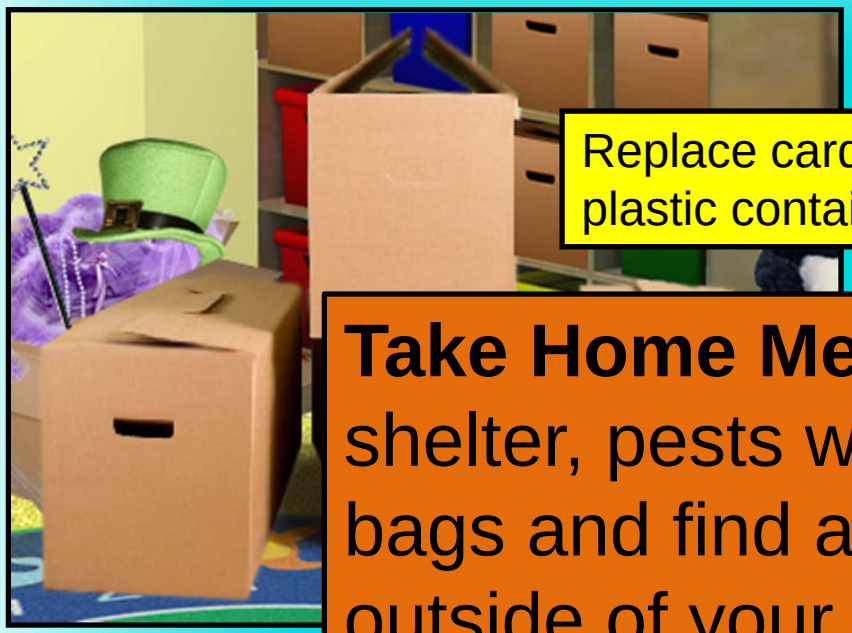
PREVENTION: REMOVE PESTS' SHELTER

Replace cardboard boxes with plastic containers with lids



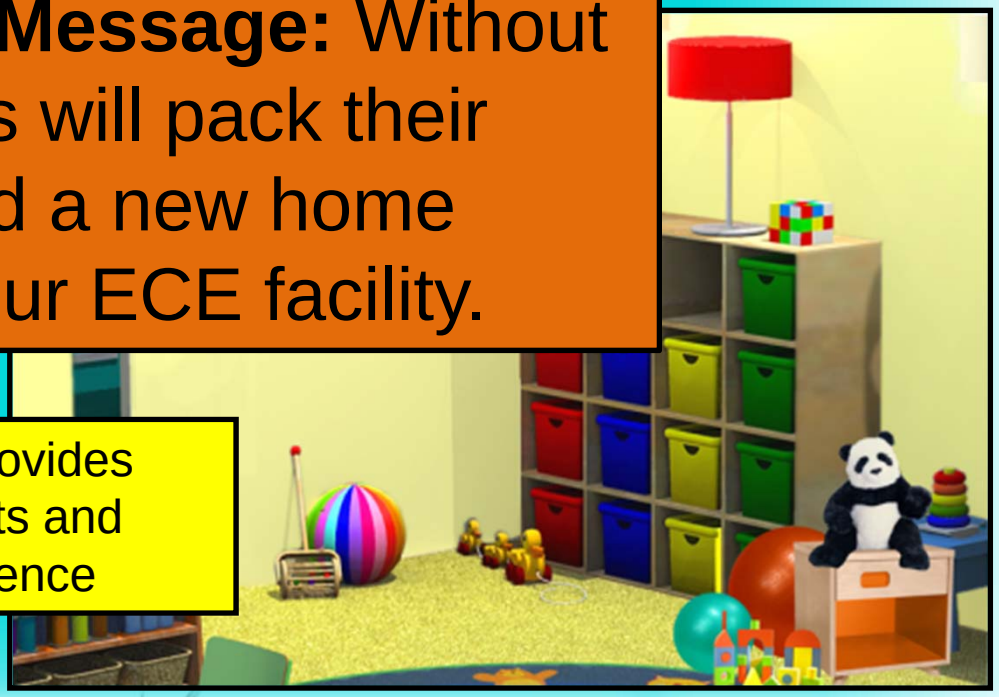
Organize! Clutter provides hiding spots for pests and covers up their evidence

PREVENTION: REMOVE PESTS' SHELTER



Replace cardboard boxes with plastic containers with lids

Take Home Message: Without shelter, pests will pack their bags and find a new home outside of your ECE facility.



Organize! Clutter provides hiding spots for pests and covers up their evidence

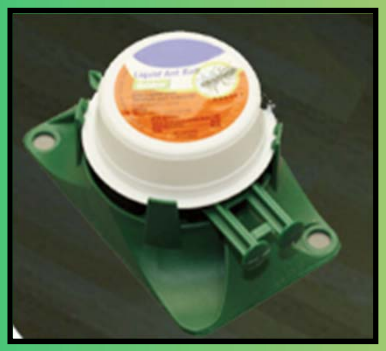
HEALTHY SCHOOLS ACT (HSA)

The HSA requires that all child care centers:

- **Keep records** about pesticide use;
- **Maintain a registry** of people to notify when pesticides are used;
- **Notify** parents and staff before pesticides are applied and
- **Post warning signs** in areas where pesticides will or have been applied.

MANAGEMENT: CHOOSING THE LEAST-RISK PESTICIDE

Less risk of exposure ⟷ **More risk of exposure**



Tamper- resistant bait station

Gel bait in a crevice

Antimicrobials

Foggers & sprays that broadcast pesticides

Exempt

Nonexempt

MANAGEMENT: CHOOSING THE LEAST-RISK PESTICIDE

Less risk of exposure ⟷ **More risk of exposure**

Tamper- re
station

Gel bait in a crevice

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Take Home Message: Use pesticides as a last resort! If needed, choose the least-risk application methods.

Exempt

Nonexempt

Indoor Air Quality

What is indoor air quality (IAQ)?

- IAQ is the air quality within and around buildings
- IAQ is important because it affects the health and comfort of the people who live or work there
- IAQ can be affected by
  - Temperature
  - Humidity
  - How well the building's ventilation and air filtration systems are working
  - Contaminants

What contaminates indoor air?

- Combustion sources – gas heaters, cooking stoves
- Mold
- Pests (e.g., cockroaches, rodents)
- Pets
- Tobacco
- Outdoor sources – pollens, mold, traffic exhaust
- Cleaners/Sanitizers (fragrance, petroleum distillates, other volatile organic compounds)
- Air fresheners
- Pesticides
- Furniture
- Carpets and flooring
- Building materials

Chemicals and Cleansers

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Indoor air quality

Many cleaners contain chemicals that are hazardous:

- Possible symptoms: Irritated airways, burning eyes, dizziness, headaches, skin reactions

- Prolonged exposure causes: unknown

Many cleaning products pose health risks

- The Environmental Working Group tested 21 common cleaning products used in California K-12 schools. They found:
  - 457 chemicals were emitted into the air from these products
    - 6 were known to cause asthma
    - 11 were known, probable or possible cancer-causing agents and
    - Others are suspected endocrine disruptors
    - For many, the health effects are unknown

Cleaning and Disinfection Products

Research tells us that frequent users of conventional cleaning and disinfecting products have

- higher levels of occupational asthma
- an increased risk of certain types of cancer

Their children may also have a greater risk of developing asthma

Choose safer cleaning products

- Third-party certified cleaning products are safer for human health and the environment
- To be sure you are choosing safer products, check the product for these logos:
  - Green Seal
  - EcoLogo
  - EPA's Design for the Environment

Look for the label!

Make your own cleaning products

- Use simple ingredients like:
  - soaps
  - abrasive calcium carbonate powder
  - baking soda
  - vinegar
  - borax
  - cornstarch
  - lemon juice
  - isopropyl alcohol
- For easy recipes, see Women's Voices for the Earth website:
  - http://www.womensvoices.org/protect-your-health/cleaning-products/green-cleaning-recipes/

Choose safer disinfectants

- The EPA's Design for the Environment (DfE) lists disinfectants that are safer :

  http://www.epa.gov/pesticides/regulating/labels/list-of-dfe-logo.pdf

- If you see the DfE logo on an EPA-authorized antimicrobial pesticide (disinfectant) label, you can be assured that the product:
  - is in the least-hazardous classes
  - is unlikely to have carcinogenic or endocrine disruptor properties
  - is unlikely to cause developmental, reproductive, mutagenic, or neurotoxicity issues

Use disinfectants safely

- Always mix and use disinfectants according to the label, away from children and/or when they are not present
- Never mix cleaning and disinfection products
- Follow the instructions for how long to let the product “dwell” on the surface to be sure that you are really disinfecting
- Store out of reach of children
- Dispose of safely

Indoor Air Quality Affects Asthma

Indoor air quality

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Asthma in Childcare

- 8-12% of children have asthma
- Most of these children test positive for allergies

Asthma triggers

- Dust mites
- Cat dander
- Rodent urine
- Cockroach allergen
- Mold/mildew
- Bacteria/endotoxin
- Pollen
- Second hand tobacco smoke
  - Allergens found more often and at higher levels on carpeted floors

What you can do about Asthma:

- Ban smoking in and around facility
- Encourage employees who smoke to stop
- Ensure ventilation compliant with regulations
  - filters, vents, and ducts clean
  - outdoor intake free of obstructions
  - airflow is appropriate
  - windows are operable

What you can do about Asthma:

- Reduce humidity
  - ventilate attic and crawl space
  - clean humidifiers
  - repair water damage, mold, leaks
- Replace old stuffed furniture or encase in mite-proof lining
- Monitor and prevent pest infestations
- Remove animals with fur
- Clean regularly

Improving Indoor Air Quality:

- Identify sources of contaminant (e.g. air freshener, mold, second hand smoke)
- Remove the source
- Improve ventilation (open windows and ensure proper maintenance of HVAC system)

Outdoor Air Quality

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Index Values	Levels of Health Concern	Cautionary Statements
0-50	Good	None
51-100*	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors.
101-150	Unhealthy for Sensitive Groups	Active children and adults, and people with lung disease, such as asthma, should reduce prolonged or heavy exertion outdoors.
151-200	Unhealthy	Active children and adults, and people with lung disease, such as asthma, should avoid prolonged or heavy exertion outdoors. Everyone else, especially children, should reduce prolonged or heavy exertion outdoors.
201-300	Very Unhealthy	Active children and adults, and people with lung disease, such as asthma, should avoid all outdoor exertion. Everyone else, especially children, should avoid prolonged or heavy exertion outdoors.
301-500	Hazardous	Everyone should avoid all physical activity outdoors.

What you can do about Outdoor Air Quality:

- Be alert to air quality warnings and plan outdoor activities accordingly.
- In warm weather, exercise early in the morning.
- Do your part to lower harmful emissions by carpooling, riding mass trans, walking.
- Follow advisories. See airnow.gov

Mercury

- Found in
  - Thermometers, thermostats, lighting fixtures, especially fluorescent fixtures, and light bulbs
  - Environment and foods, especially fish (especially swordfish and shark)
- Health effects
  - Nerve toxin

What you can do about Mercury:

- Replace all mercury thermometers with alcohol or electronic thermometers
- Replace mercury thermostats with electronic thermostats. Ask electrician for advice
- Dispose of fluorescent bulbs, thermometers, batteries properly – e.g. local hazardous material collection service
- Follow local fish advisories

Mercury Spills

- Small spills can be easily cleaned

- Treat broken fluorescent bulbs as mercury spill:
  - Wear gloves
  - Scoop glass into rigid container with sealed lid
  - Store away from children
  - Air out room for 12-14 hours
  - Dispose large bulbs at local hazardous waste collection facility

Asbestos

- Mineral insulator and fire retardant
- Used in heating/cooling systems and some building materials
- Fine particles irritate and damage lungs, associated with lung cancer

What you can do about Asbestos:

- Inspect building for asbestos, hire a professional if warranted
- Remove asbestos by licensed abatement contractor

Newer concerns:

- Brominated flame retardants
- Phthalates and Bisphenol-A in toys, food containers and other consumer products

What you can do:

- Sweep and mop frequently
- Use a HEPA filtered vacuum
- Use containers that say BPA-free
- Buy phthalate-free toys
- Avoid feeding children canned foods

What every Child Care Program should have:

- Designated person responsible for environmental health
- Written policies on environmental health
- Trained employees
- Documentation that policies are followed

Hopes for the future:

- Comprehensive resources and training available in California

- Important role that child care providers can play in improving environments in their community

Additional Resources

CERCH
http://cerch.org/research-programs/child-care/

UCSF California Child Care Health Program
http://www.ucsfchildcarehealth.org/index.htm

California Department of Pesticide Regulation
http://apps.cdpr.ca.gov/schoolipm/

Children's Environmental Health Network
http://www.cehn.org/ehcc

Green Care For Children
http://www.greencareforchildren.org/greencareforchildren_home

U.S. EPA Child Care Web Site
http://epa.gov/childcare/

Stay tuned…

For more information about child care visit us online at cerch.org/research-programs/child-care/ and sign-up for our e-newsletter.

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Abbey Alkon, CCHP/UCSF

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http://www.ucsfchildcarehealth.org/html/pandr/trainingcurrmain.htm

Thanks to our funders

NIEHS
National Institute of Environmental Health Sciences

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California Department of Pesticide Regulation

… and a special thanks to the children and families in Salinas.


HAMA
RHINO LAKE

Thank you!

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Questions?

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