

INTEGRATED PEST MANAGEMENT TOOLKIT FOR EARLY CARE AND EDUCATION PROGRAMS
CALIFORNIA CHILDCARE HEALTH PROGRAM

INTEGRATED PEST MANAGEMENT IN EARLY CARE & EDUCATION PROGRAMS




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ICEBREAKER QUESTIONS

1. What's your name?
2. What's the pest that bothers you the most?
3. What would you like to learn from today's workshop?



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CALIFORNIA
CHILDCARE
HEALTH
PROGRAM



dpr Department of
Pesticide Regulation



UC Berkeley
Center for
Environmental
Research
and Children's
Health

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WHY ARE WE HERE TODAY?

Goal: To protect the health of children, staff and the environment





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BY THE END OF TODAY, YOU WILL BE ABLE TO:



1. Identify the requirements for child care centers as specified in California's Healthy Schools Act.
2. Define what is a pest, what is a pesticide and what is integrated pest management.
3. Explain why children are vulnerable to the health risks of pesticides.
4. Describe the health effects for children and staff exposed to pesticides and common pests.



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BY THE END OF TODAY, YOU WILL BE ABLE TO:



5. Develop and implement IPM policies and practices in your program.
6. Identify simple and inexpensive IPM methods to prevent or manage common pests.
7. Inspect your child care facility for the presence of pests or conditions that attract pests using the IPM Checklist.
8. Share IPM information and resources with staff and parents.



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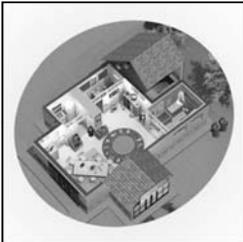
OVERVIEW

A. Healthy Schools Act

B. Background

- o Pests
- o Pesticides
- o The health risks of pesticides to children & the environment

C. Integrated Pest Management




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HEALTHY SCHOOLS ACT (HSA)

The HSA requires that all child care centers:

WARNING



Pesticide Treated Area

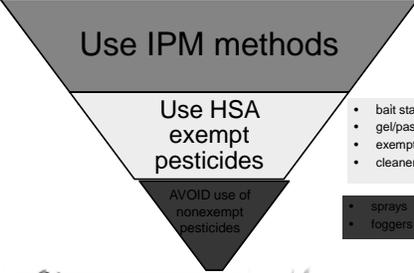
- **Keep records** about pesticide use;
- **Maintain a registry** of people to notify when pesticides are used;
- **Notify** parents and staff before pesticides are applied and
- **Post warning signs** in areas where pesticides will or have been applied.



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HEALTHY SCHOOLS ACT (II)

The HSA encourages centers to:



- Keep pests out!
- Remove their access to food, water and shelter

- bait stations
- gel/paste in cracks/crevices
- exempt materials (e.g. mint oil)
- cleaners/sanitizers

- sprays
- foggers



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WHAT DOES THE HSA REQUIRE?

Property Owners

If the owner of a property where a child care center is located uses pesticides, they must provide written notice to the ECE center at least 120 hours before they apply a pesticide.

Pest Management Professional (PMP)

If a child care center hires a PMP, the staff must inform the PMP that the facility must comply with the Healthy Schools Act. The PMP must notify the center 120 hours before applying nonexempt pesticides.

If a property owner hires a PMP, the property owner must notify the PMP that a child care facility is present on the property.

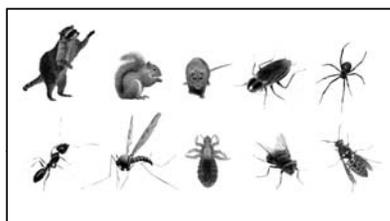


For complete list of your responsibilities, see CCHP Health and Safety Note on the Healthy Schools Act.



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WHAT IS A PEST?

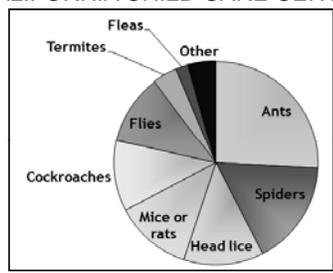


A pest is any living organism that causes damage or discomfort, or transmits or produces disease.



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WHAT ARE THE MOST COMMON INDOOR PESTS IN CALIFORNIA CHILD CARE CENTERS?



Bradman, A., Dobson, C., Leonard, V. & Messenger, B. (2010). Pest Management and Pesticide Use in California Child Care Centers. Center for Children's Environmental Health Research, School of Public Health, UC Berkeley at apps.cdpr.ca.gov/schoolipm/childcare/pest_mgt_childcare.pdf.



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CONCERNS ABOUT PESTICIDE-USE

- Health Outcomes
- Vulnerable Populations
- Environmental Damage
- Pest Resistance

• Pests can become resistant

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WHAT WE KNOW ABOUT LONG TERM EFFECTS OF PESTICIDES

Physicians for Social Responsibility, Los Angeles
Physicians for Social Responsibility, Los Angeles (2003) *In Harm's Way* at www.psr-la.org/in-harms-way/

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WHAT WE KNOW ABOUT LONG TERM EFFECTS OF PESTICIDES

Pesticide use became widespread in the 1940's. Many pesticides are new and haven't been around for long, so we don't know their long term effects.

Physicians for Social Responsibility, Los Angeles
Physicians for Social Responsibility, Los Angeles (2003) *In Harm's Way* at www.psr-la.org/in-harms-way/

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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

The average child eats **6.9** times more apples per day than an adult.

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- 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.

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WHY ARE CHILDREN MORE VULNERABLE?

2. Metabolism

- Metabolic pathways undeveloped
- Reactivity to environment not yet in place

3. Don't recognize hazards

- Can't read labels
- Get into everything

In 2008, United States Poison Control Centers reported 43,526 cases of possible pesticide poisoning in children younger than six.

Bronstein, A. C., Spyker, D. A., Cantilena, L. R., Green, J. L., Rumack, B. H., & Griffin, S. L. (2009). 2008 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 28th Annual Report. *Clinical Toxicology*, 47(10), 911-1064.

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WHERE ARE PESTICIDES FOUND?

Agricultural Fields Pesticide Drift
Fruits & Vegetables
Household Products
Public Housing
Contaminated Water
Child Care Center & Schools

Sariborn et al. Identifying and Managing Adverse Environmental Health Effects: 4
Pesticides: 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

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WHAT ARE THE PATHWAYS OF EXPOSURE FOR CHILDREN?

1. By eating
2. By breathing
3. Through skin
4. Across the placenta (in the womb)

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HOW COMMON IS PESTICIDE-USE?

California Child Care Pest Management Survey	
Pest problem present	
Using any pesticides	
Using spray or fogger	
Using at least one IPM approach	
Aware of IPM	

Bradman, A., Dobson, C., Leonard, V. & Messenger, B. (2010). Pest Management and Pesticide Use in California Child Care Centers. Center for Children's Environmental Health Research, School of Public Health, UC Berkeley at apps.cdph.ca.gov/ncchood/childcare/pest_mgmt_childcare.pdf

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HOW COMMON IS PESTICIDE-USE?

California Child Care Pest Management Survey	
Pest problem present	90%
Using any pesticides	55%
Using spray or fogger	47%
Using at least one IPM approach	65%
Aware of IPM	25%

Bradman, A., Dobson, C., Leonard, V. & Messenger, B. (2010). Pest Management and Pesticide Use in California Child Care Centers. Center for Children's Environmental Health Research, School of Public Health, UC Berkeley at apps.cdph.ca.gov/ncchood/childcare/pest_mgmt_childcare.pdf

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WHAT IS INTEGRATED PEST MANAGEMENT (IPM)?

A "common-sense" approach to:

- **Preventing pest problems by**
 1. keeping pests out and
 2. getting rid of their food, water and shelter.
- **Managing pest problems by**
 1. using non-chemical approaches;
 2. using least-toxic pesticides when necessary and
 3. reducing the use of harmful pesticide.

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Prevention ↑ Intervention ↑ Toxicity ↑	CHEMICAL	<ul style="list-style-type: none"> Conventional Pesticides <ul style="list-style-type: none"> • Sprays • Foggers Least Toxic Pesticides <ul style="list-style-type: none"> • Silica gel • Boric acid • Diatomaceous earth
	PHYSICAL – MECHANICAL	<ul style="list-style-type: none"> • Vacuum • Snap traps • Glue boards • Fly swatters
	SANITATION	<ul style="list-style-type: none"> • Use tight-fitting lids on trash cans • Keep food containers tightly sealed • Eliminate clutter & standing water • Clean up crumbs immediately
	GENERAL PREVENTION	<ul style="list-style-type: none"> • Caulk cracks & crevices • Replace broken screens • Repair leaky faucets • Weatherstrip doors
	EDUCATION, COMMUNICATION & POLICIES	<ul style="list-style-type: none"> • Train staff & parents • Adopt IPM policy • Hire a PMP with IPM experience

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IPM NUTS & BOLTS



1. **Prevention** ★
 - Keep Pests Out
 - Remove Pest's Food, Water & Shelter
2. **Inspect and Monitor**
3. **Identify Pests**
4. **Manage Existing Problems**

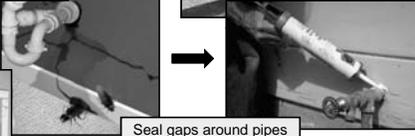


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PREVENTION: KEEP PESTS OUT



Seal or block gaps around doors. Install doorsweeps.



Seal gaps around pipes



Patch holes in screens



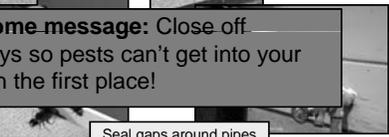
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PREVENTION: KEEP PESTS OUT

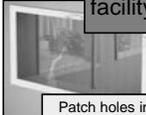


Seal or block gaps around doors. Install doorsweeps.

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



Seal gaps around pipes



Patch holes in screens



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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




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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



Store food & art supplies in sealed containers




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PREVENTION: REMOVE PESTS' SHELTER

Replace cardboard boxes with plastic containers with lids



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




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MANAGEMENT

Often you can manage pests without using chemicals. IPM-recommended techniques include:

Take Home Message: Keeping things clean and in good repair is key to IPM!

<http://www.wildpeas.com/2001/prod3447263.html>
<http://www.bugvac.com/163-wildpeas/wildpeas.htm>

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MANAGEMENT: CHOOSING THE LEAST-RISK PESTICIDE

Less risk of exposure ← → More risk of exposure

Exempt **Nonexempt**

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MANAGEMENT: CHOOSING THE LEAST-RISK PESTICIDE

Less risk of exposure ← → More risk of exposure

Exempt **Nonexempt**

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IMPLEMENTING IPM IN YOUR CENTER

1. Write an IPM policy.
2. Designate an IPM Coordinator.
3. Provide training for staff and parents.
4. Obtain information for any outside contractors.
5. If needed, hire a PMP that has IPM experience and knows about the HS A requirements.

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IMPLEMENTING IPM IN YOUR CENTER (II)

6. If you have a pest problem, inspect buildings and grounds for sources of infestations and contributing conditions.
7. Establish pest monitoring procedures.
8. Identify any pests found and create an IPM Action Plan for each pest you find in your environment.
9. Establish record keeping.
10. Evaluate the program on a regular basis.

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HOW TO HIRE A PMP

- 1) Identify a PMP with experience in ECE facilities.
- 2) Call several PMPs and ask specifically if they are aware of the Healthy Schools Act and practice IPM.
- 3) Ask what services are included in the PMP's IPM approach.
- 4) Confirm that the PMP understands which services require an ECE director's explicit permission.
- 5) Ask whether they use indoor or outdoor sprays.
- 6) Ask about the qualifications, training and experience of anyone who will work on your site.
- 7) Ask for references from other clients.

If you already have a PMP, talk with him to make sure he's using IPM methods.

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SCENARIO

You enter a child care facility and note that there is evidence of mice and mold in the kitchen. The staff say that they can't get rid of them and ask you for suggestions. They don't want to spray pesticides around the children.



What would you suggest?
(Hint: think about access, food, water and shelter)



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IPM NUTS & BOLTS



1. **Prevention**
 - Keep Pests Out
 - Remove Pest's Food, Water & Shelter
2. **Inspect and Monitor**
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4. **Manage Existing Problems**



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ACKNOWLEDGEMENTS

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*some images from <http://healthyhomescollaborative.org/>



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ACKNOWLEDGEMENTS (II)

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RESOURCES

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www.ucsfchildcarehealth.org
 • **Fact Sheets for Families**
www.ucsfchildcarehealth.org/html/pandr/factsheetsmain.htm
 • **Health and Safety Notes**
www.ucsfchildcarehealth.org/html/pandr/hsnotesmain.htm
 • **Forms**
www.ucsfchildcarehealth.org/html/pandr/formsmain.htm
 • **Training Curricula**
www.ucsfchildcarehealth.org/html/pandr/trainingcurmain.htm
AB 405 List of Pesticide Products Prohibited from Use in Schools
apps.cdpr.ca.gov/schoolipm/school_ipm_law/prohibited_prods.pdf
 California Department of Pesticide Regulation
 Childcare IPM: Growing Up Green
www.cdpr.ca.gov/schoolipm/childcare

California Department of Pesticide Regulation.
Pest Prevention: Maintenance Practice and Facility Design
apps.cdpr.ca.gov/schoolipm/managing_pests/71_est_prevention.cfm

California laws and regulations on pesticide use
apps.cdpr.ca.gov/schoolipm/school_ipm_law/main.cfm

Collaborative on Health and the Environment,
Endocrine Disrupting Chemicals
www.healthandenvironment.org/?module=uploads&func=download&fileid=773

Ecologo
www.ecologo.org

Ecowise
www.ecowise.com

EPA, Design for the Environment
www.epa.gov/dfe



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RESOURCES (II)

EPA, Integrated Pest Management for Schools: A How-to Manual
www.epa.gov/opp00001/ipm/schoolipm

National Pesticide Information Center
npic.orst.edu

National Pest Management Association (NPMA)
www.pestworld.org

eXtension: Pest Management In and Around Structures
www.extension.org/urban%20integrated%20pest%20management

Our Water, Our World
www.ourwaterourworld.org

Green Seal
www.greenseal.org

Pest Control Operators of California
www.pcoc.org

Green Shield Certified
www.greenshieldcertified.org

The Safer Pest Control Project
www.spcpweb.org

GreenPro
www.certifiedgreenpro.org

University of California Statewide Integrated Pest Management Program
www.ipm.ucdavis.edu

IPM Institute of North America, Inc.
www.ipminstitute.org

US Pest Control Regulatory Agencies by State
www.pestnetwork.com/usagencies/bystate.html

Maryland Department of Agriculture, **Action Thresholds in School IPM Programs. Pesticide Regulation Section**, Annapolis, MD.
schoolipm.ifas.ufl.edu/tp.htm

