

Children's Environmental Health : Why We Must Protect Children Where They Live and Learn

Objectives

- To learn about how and why children are more susceptible to some environmental exposures than adults
- To discuss major problems in CEH



What's the difference?

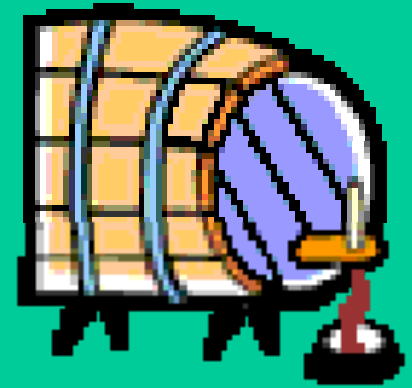
Toxicity

How bad?



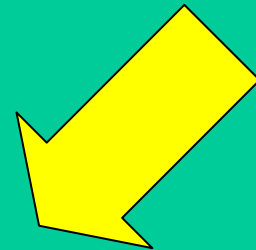
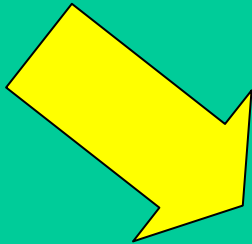
Exposure

How much?



TIMING

RISK



A Child's Environment Is All Around Them

■ Eating



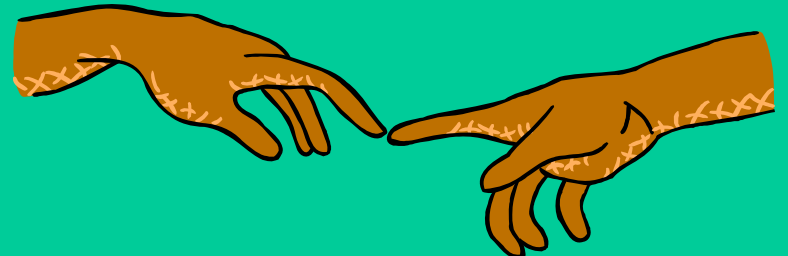
■ Drinking



■ Breathing



■ Touching



Children spend ~ 90% of their time INDOORS



Homes



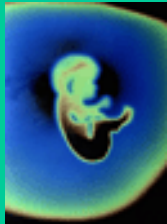
Schools



Childcare Facilities



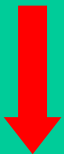
Children Are Not Little Adults



**Windows of
Vulnerability in
Development**

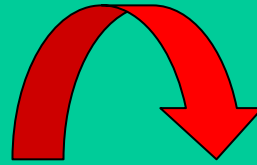
**Differences in
Physiology**

**Differences in
Behaviors**



Children's Increased Vulnerability

Exposure Differences : Physiology

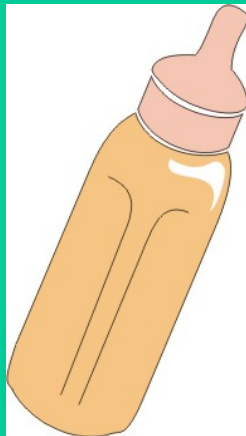


Increased Exposures Relative to Adults

- Pound for pound, kids
 - ❖ breathe more air than adults
 - ❖ drink more water than adults
 - ❖ eat more food than adults
 - ❖ have increased surface area to body mass ratio relative to adults
- May also have different metabolism routes, speeds due to enzyme availability or activity



How many twelve ounce drinks/day would an adult male need to consume in order to take in proportionately as much as an infant?



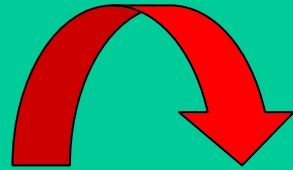
Infants

35



Adults

Exposure Differences : Behaviors



Increased Exposures Relative to Adults

- Closer to the ground
- Diet and eating habits differ
 - ❖ Newborns - breast milk or formula
 - ❖ Infants / Toddlers - more fruit and milk products
 - ❖ “Fussy Eaters” abound
 - ❖ “Grazing” is common



Average child eats ? times more
apples than an adult, not
accounting for child's smaller size.

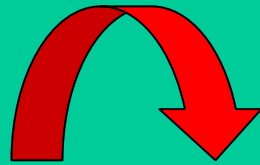
6.9
times



Adults

Non-nursing Infants

Exposure Differences : Behaviors



Increased Exposures Relative to Adults

- Engage in more potentially high-risk behavior
 - ❖ increased hand contact with "stuff"
 - ❖ increased mouthing behaviors
 - ❖ more time spent outdoors

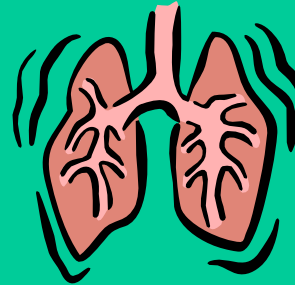


Major Issues in CEH

- Lead poisoning



- Asthma



- Pests and pesticides



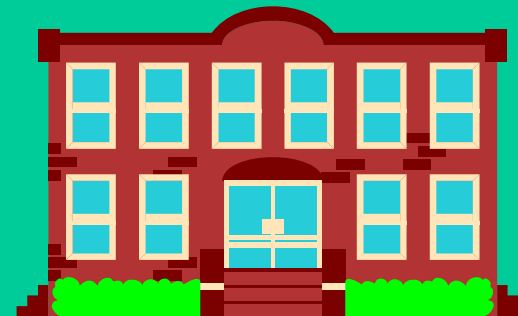
- Second-hand smoke



- Mercury



- School and childcare settings



What is the ENVIRONMENT in a child care facility or school?



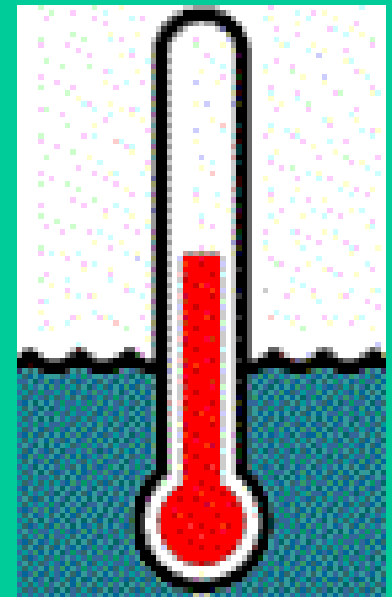
Potential Environmental Hazards in Schools & Childcare Facilities

- Poor indoor air quality
- Exposure to
 - ❖ Asbestos
 - ❖ Mercury
 - ❖ Pesticides
 - ❖ Other hazardous chemicals



Issues in Environmental Health for Childcare Facilities / Schools

- May be unaware of issues
- Lack funds for remediation
- High population density in schools
- No clear authority or guidelines
- May have many hazardous chemicals



! Great Tool for Childcare Facilities !

Indiana's 5-Star Environmental
Recognition Program for Child Care
Facilities

<http://www.in.gov/idem/kids/5star/>

Developed by Indiana Dept of Env
Mgt but useful for all childcare
facilities