

The ABCD's of Schools: Asthma, Bugs, Chemicals & Design New York State Schools

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Learning Objectives

- Learn: children are biologically not little adults
 - *more vulnerable to environmental hazards, more exposed*
 - *no health protections*
- Understand: schools are not little offices
 - *vulnerable occupants, densely occupied, multiple uses and users, compulsory attendance, children with special needs*
- Learn about common school environmental problems
- Learn how to prevent problems and risks to health
- Discuss: do NYS agencies and districts promote healthy learning places for children, and what are other states doing?
 - IAQ, Green Cleaning, IPM, HPS design/siting, synthetic turf, heating systems, molds, chemical spills, etc.





Children are not little adults!

- They breathe, eat, and drink proportionally more per pound of body weight than adults and are still developing
- Exposures and injuries at a young age can disrupt normal development, create lifelong effects
- They cannot recognize or protect themselves from environmental hazards; they cannot articulate or verbalize risks and threats
- They have behaviors- such as hand to mouth, sitting on floor or ground- that can cause greater exposures



Mold-infested cubby for children's coats, hats, packs



The most vulnerable: high-risk learners

- Chronic/serious illnesses
 - Immune-suppressed; hearing/visually impaired; asthma; medically fragile
 - Environmental stressors: *noise, lighting, air quality, temperature, heavy metals and toxic chemicals, construction fumes/debris, dampness/molds*
- 7 million children with special education needs: more vulnerable?
 - 300,000 children have been diagnosed with autism (CDC)
 - More than 6 million have been diagnosed with asthma (ALA)
 - 150,000 have diabetes (CDC)
- Unique behaviors: *pica, chewing, mouth-breathing, diets*
- Sit for longer periods; more time indoors and on buses
- Worst classrooms; types of utensils/tools
- Predisposed to asthma, upper respiratory
- Difficulty mobilizing, communicating symptoms or exposures



Schools are not little offices!

- Children outnumber adults (> 8:1) in public schools
- Public schools disproportionately enroll more high risk learners
- Buildings densely occupied and used more hours/week than most offices
- No state records or reports student illnesses or injuries
- No baseline data on children's environmental health
- Attendance required and reimbursed (ADA)
 - children cannot work from home or send in a “sub” when sick
- Who steps in if adults have workplace exposures?
 - State OSHA Plan, bargaining contract, NIOSH

Who steps in when children are at risk?

-- ? --



Healthy Schools/Healthy Kids Clearinghouse Reports

Children required to use toxic products. Parent identifies risk to children required to use permanent and dry erase markers in NYC elementary school.



Children with autism - summer school placement. School is under renovation while school is in session, New York City, *Daily News* photo, 2008



SICK SCHOOLS 2009: America's Continuing Environmental Public Health Crisis for Children

SICK SCHOOLS 2009



America's Continuing Environmental Health Crisis for Children

No. Public School Buildings	98,793	States Offering Grants for Construction	38
No. Public Schools Students	49,292,507	States Requiring School IPM Plans	15
No. Minority Students	21,904,510	States with Indoor Air Quality Laws	Footnote 8
No. Students in Special Education Program	6,247,443	States with Green Cleaning Laws	8
No. Employees in School System	6,215,635	States with High Performance Green School Design Programs	21
Percent of Youth 4-17 Ever Diagnosed with ADHD	7.74%	States with School Building Assessments	28
Percent of Schools with at Least One Inadequate Building Feature	68%	Percent of Children (18 or younger) Without Health insurance	12.5%
Percent of Schools with at Least One Unsatisfactory Environmental Factor	57%	Percent of Children with Asthma (under 18)	8.9%
Est. No. Students At High Risk Daily	32,000,000	States with School Facilities Offices	39
States with Adopted OSHA Plans	24		

A national collaborative report from the Coalition for Healthier Schools



SICK SCHOOLS: Photo Gallery

**Outside:
ventilation unit sealed up**



**Inside, same unit:
mouse droppings**



SICK SCHOOLS: Photo Gallery



Top:

water damaged ceiling

On the floor below:

bird droppings and feathers



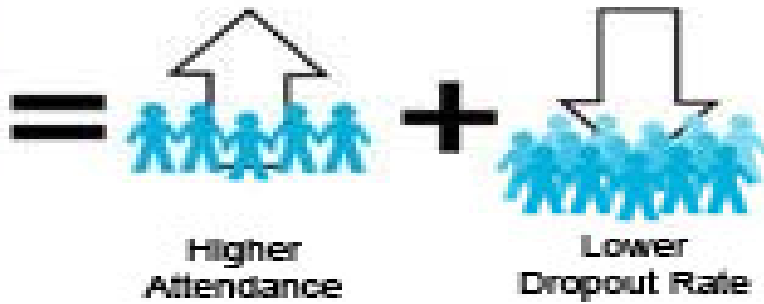
NEW YORK STATE

What is New York doing to advance healthier and greener schools for all children?

- National leader in improving PK-12 school facilities
 - Comprehensive policies (1995) and regulations (1997) for facility IEQ and assessments
 - Coal boilers (1996); MMR funds (1999)
 - IPM (2000); CCA (2002); Mercury (2003), Green Cleaning (2005)
 - Design standards (NYC and NYS 2007)
 - Ban on outdoor uses of pesticides (2010)
- **But New York State Dept. of Health studies find:**
 - **2008: schools filled with asthma triggers** (molds, dust//particulates, hazardous cleaning)
 - **2011: pediatric asthma hospitalizations can rise 300% on returns to school**



Proactive
Maintenance
In Schools



A = Asthma & Air

- **NYS ASN Survey: 71% reported knowing children whose learning, breathing, or behavior were affected by indoor environmental pollutants at school**
- **NASN Survey: 40% reported children affected, 75% say no IAQ Plans, 6% say no agency assisted**
- **Asthma: leading cause of absenteeism; leading work-related disease in schools**
- **National Academy of Sciences reports**
 - **Design health into conventional ‘green’ school design**
Clean, Dry, Quiet, Good IAQ and Thermal Comfort, Control Dust/Particulates
 - **Can “green” building design help?:** “possible to receive the highest level of certification without earning any points in indoor environmental quality” (2011)
 - **Occupant health benefits yield \$63 of every \$74 saved in high performance green schools** v fewer benefits from conservation



B = BUGS: safer (cheaper) pest control



Integrated Pest Management (IPM) = Safer Pest Control

New York laws require

- **Written least toxic IPM plan**
- **Prior Notice of Pesticide Use**
- **Ban on ornamental uses of herbicides on school grounds**

Prevent pests → less pesticide use → reduce health risks → save money

TIPS:

Know who is in charge!

Schools should:

- Keep Records - pest problems/locations
- Identify action levels - decide if/when to act and how
- Practice prevention - basic sanitation/repairs; ban pets; fill holes/crevices; fix leaks
- Save money – prevention is cheaper than routine, repeated chemical uses
- Evaluate - is it working?
- Celebrate success with the community!

Courtesy BeyondPesticides.org



C = CHEMICALS: where to find toxics

- Hazardous cleaning products
- Pesticides: herbicides, fungicides, insecticides
- Building materials and furnishings
- Equipment: computers, copiers
- Paints and floor finishes
- PBDE: flame retardants
- PCBs (*light ballasts, caulking*)
- PVC (*vinyl flooring, partitions*)
- Diesel exhaust
- Radon
- Asbestos
- VOCs (*paints, glues, finishes, dry erase markers*)
- Carbon monoxide, indoors and outdoors
- Renovation/construction of occupied facilities
- Classrooms: art, science labs, vo-tech
- Mercury
- Lead: *drinking water/paint*, rifle ranges, synthetic turf
- Toxic portables (*formaldehyde, plastics*)
- Plug ins and room deodorizers (*phthalates, fragrances, naphthalene*)



BEWARE Greenwashing (false environmental claims)



Green Cleaning Products

Breathe easier - clean doesn't have an odor!

All state agencies; all public and private schools (EO and law, 2005)

Save money (agencies report no cost complaints, 2010)

- Prevent dirt: walk off mats, storage and trash bins, small spills, ban pets/foods
- Avoid **Greenwashing**: use **3rd party-certified** cleaning products
 - Select from Green Seal, Eco-Logo certified products on state list
 - Full disclosure needed in addition to third party certified
- Reduce use of disinfectants
- Ban air fresheners, plug-ins, room sprays, cleaning products from home
- Inventory, update and maintain cleaning equipment

FREE poster, DIY customizable presentations, model state policy

[Green CleaningforHealthychools.org](http://GreenCleaningforHealthychools.org)

American Federation of Teachers, American Federation of State, County, and Municipal Employees, National Association of School Nurses, Massachusetts Committee on Occupational Safety and Health, Green Purchasing Institute, Green Schools Initiative,

New York State United Teachers, American Lung Association of New England, INFORM, Healthy Schools Network, National Education Association-Health Information Network, Connecticut Foundation for Environmentally Safe Schools



D = Design for children's health, safety, and learning

EXAMPLE:

Hampton Bays Middle School,
first NY-CHPS verified school in NYS

April 2008: 143,746 square feet, \$42m

Specified low-emitting interior materials,
walk off mats and grilles, careful siting of
air intakes, and minimized VOCs

Moisture and Mold Protection with barriers
and sealing of joints

Operates at 27% greater energy efficiency
than standard code, including high
performance lighting system with room
sensors



OPPORTUNITIES: U.S. Dept. of Education Green Ribbon Schools Award *



- **Green Squad**
- **Aimed at middle schoolers**
- **Tips**
- **Worksheets**
- **Library**
- **Parent - Teacher Resources**

Recommended by US ED; sponsored by NRDC with Healthy Schools Network

HealthySchools.org/kids
NRDC.org/GreenSquad



OPPORTUNITIES: 10th Anniversary National Healthy Schools Day

...a time for everyone to celebrate healthy school environments...

sponsored by Healthy Schools Network
with

US Environmental Protection Agency

*Council of Educational Facility Planners - International
Coalition for Healthier Schools*

April 24, 2012 (Tuesday, & all week long!)



See poster, decals, other tools

NationalHealthySchoolsDay.org

Healthy Schools Network

for children ... health ... environment ...
education ... and communities ...
since 1995

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