Aspects of Children’s Environmental Health

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“How do children differ from adults? Let me count the ways.”

with apologies to

Elizabeth Barrett Browning

*Sonnets from the Portuguese*, Number 43
Children Are Not Little Adults!

- Children
  - Have longer “shelf life”
    - Vulnerable periods of development
  - Eat more, drink more, breath more per unit body weight than adult
  - Different metabolism than adults
Timing of Exposure
Exquisitely Important

• Critical Periods of Vulnerability
  ➢ Before conception
    – Exposure of male, alter sperm
  ➢ In-utero
    – Thalidomide (between day 20 to 36 after fertilization)
  ➢ After birth
    – Lead
    – Ultraviolet light
Differences Between Children & Adults

• In utero – fetus has placenta, adults don’t
• Hopefully, babies breast feed exclusively for 6 months, adults don’t
• Children eat differently
• Massive changes in the brain (up to 24-25 yrs of age?)
• Lungs – more air sacks and breathing tubes
• Adolescence – many, many changes
Behavioral Differences between Adolescents & Younger Children

• Drinking
• Smoking
• Experimentation with recreational drugs
• Oral contraception use
• Anabolic steroids and other performance enhancing drugs in athletics
• Direct access to over-the-counter medications


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Other Differences Between Children & Adults

• On the floor or ground
• Short
• Mouthing behavior
• Run a lot
• Take-home toxics or work in home or live at work – exposure from parental employment
Other Factors Influencing Outcome

- Poverty and environmental health
- Minority racial and ethnic status and environmental health
Implications

- Must take the differences in behavior, development, growth and other factors into account when legislating & regulating.

TSCA
When Confronted with an Environmental Health Issue Regarding a Child, Where Does One Turn?

To a Pediatric Environmental Health Specialty Unit (PEHSU).
What is a PEHSU?

• A resource for pediatricians, public health officials, school personnel, parents and others to get questions answered about children’s health and the environment
What Kinds of Problems do PEHSUs Deal With?

- Lead poisoning
- Pesticide exposures
- Sick building problems
- Water pollution
- Air pollution
- Job related exposures in adolescents
- Volatile Organic Compounds
- Exposure to hazardous waste sites
- Environmentally related asthma
- Agricultural pollutants
- Solvents
- Carbon monoxide
- Arsenic
- Mercury
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- The Association of Occupational and Environmental Clinic
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The Association of Occupational and Environmental Clinic is responsible for programmatic and financial management.

AOEC

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www.childrensnational.org
How PEHUSs Can Help Legislators.

- At your request, we can
  - provide technical assistance to you and your staff
  - participate in community meetings to provide factual information about an environmental health issue
  - be a source of information to individual constituents
  - participate in committees reviewing environmental health issues
For More Information

- www.pehsu.net
- 888-347-2632

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