

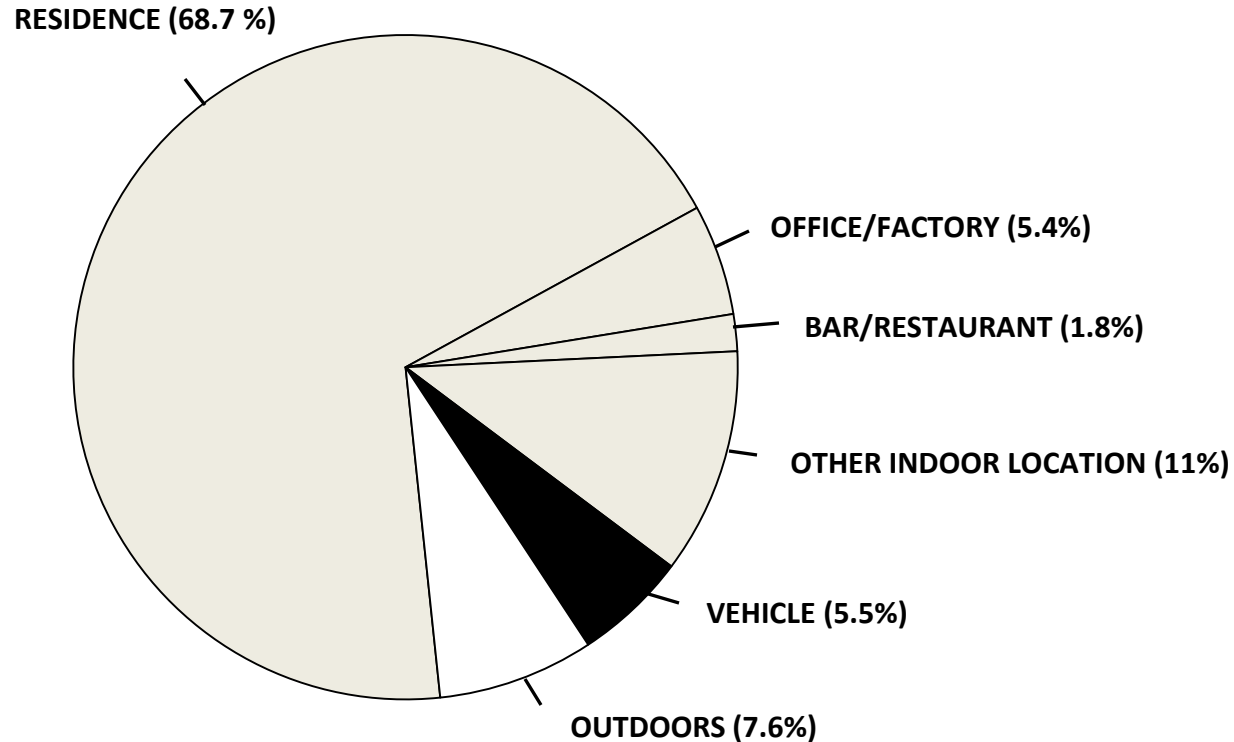


# Pollution and the Cult of the New



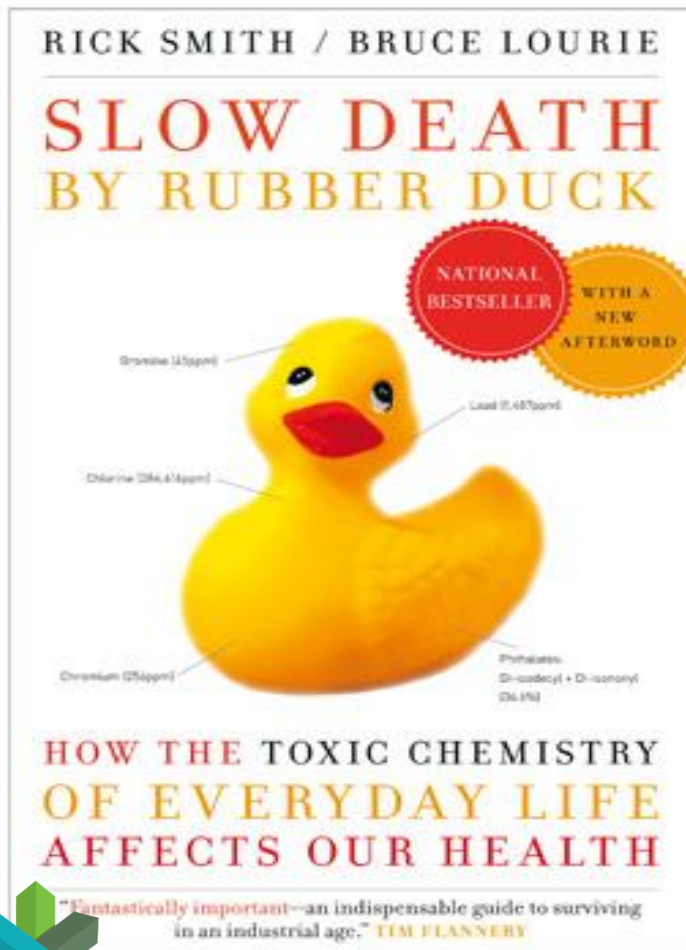
**Rick Smith**  
**November 2, 2013**

# Buildings ARE our Environment

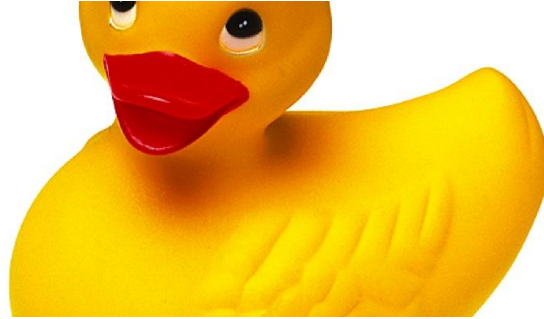


**People spend over 90% of lives indoors**

# Modern Pollution is Invisible and Insidious



# Why the Duck?



- Kids are the most vulnerable
- Products that look innocent
- Chemicals that are everywhere
- Unintended consequences

# Experimenting on Ourselves

- Can we see these chemicals in our own blood?
- Can we alter the levels in real time by exposing ourselves to everyday products?

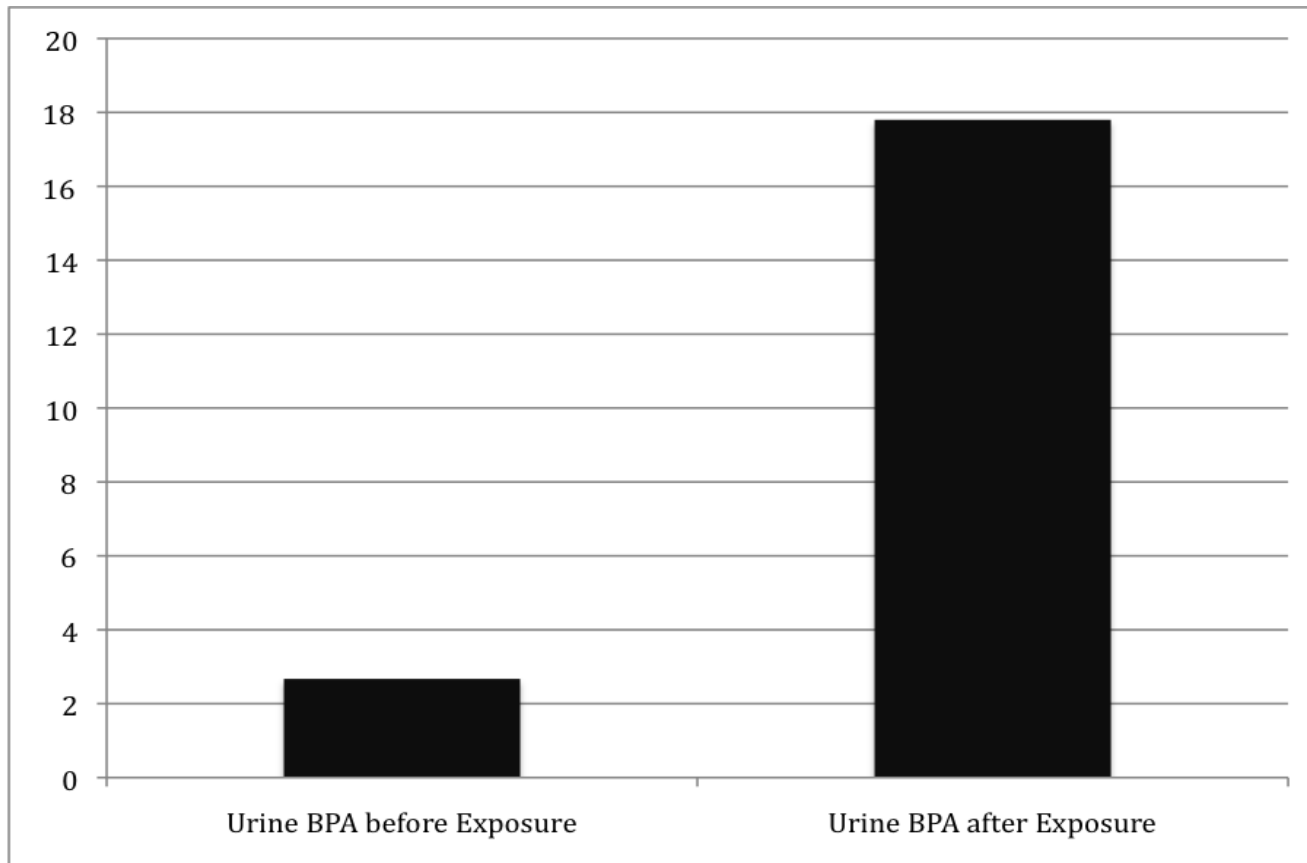


# Our Cardinal Rule

The tests had to mimic real life.

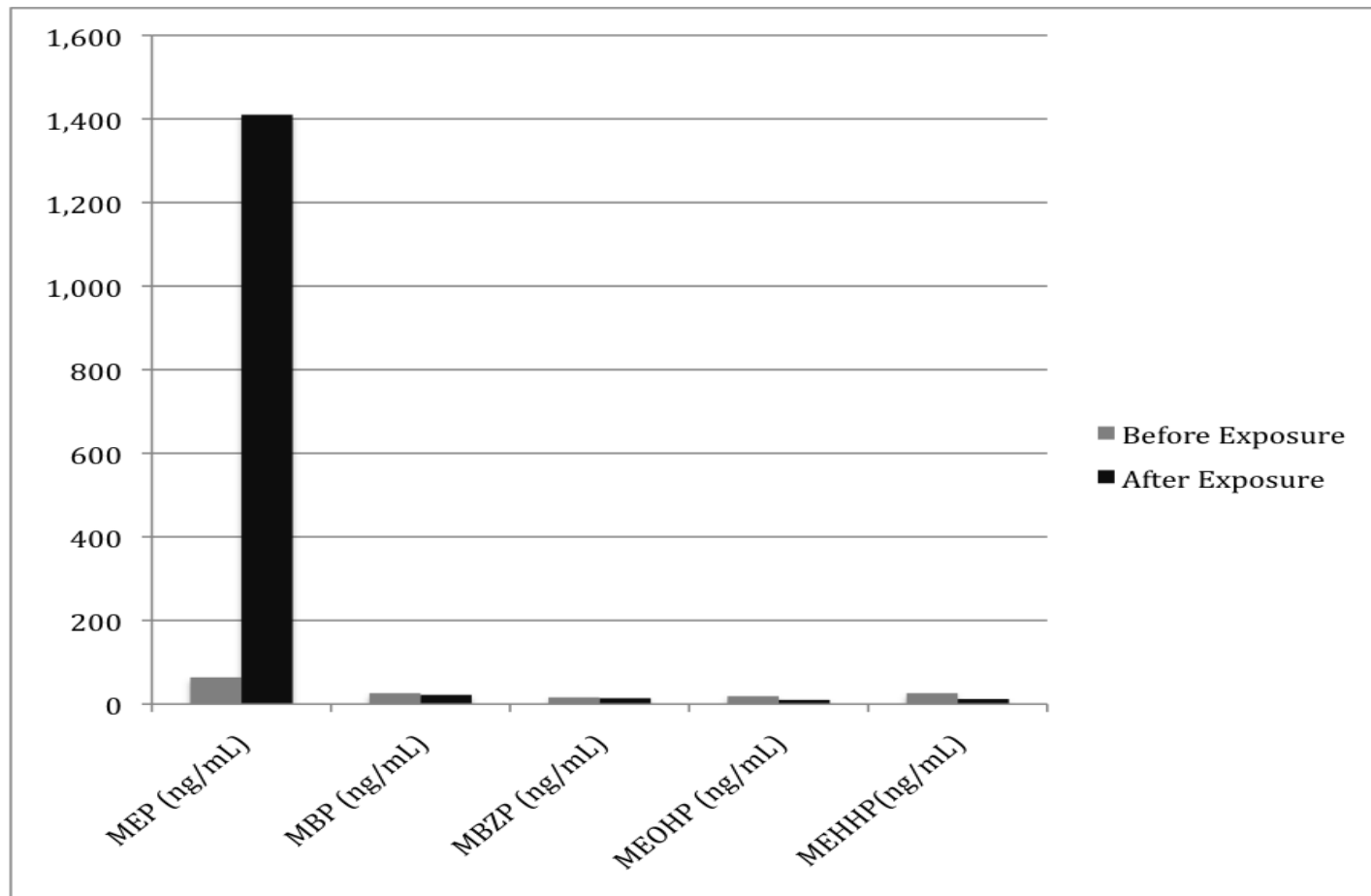
*(Unlike the studies you hear about where you'd have to eat 400 tonnes of something a day for 200 years to notice an effect)*

# Modern Pollution is Invisible, but Measurable



**BPA↑ 7.5x after 2 days of eating out of plastic**

# Modern Pollution is Invisible, but Measurable



Phthalates ↑ 22x after normal bathroom routine



# Vinyl, phthalates and asthma

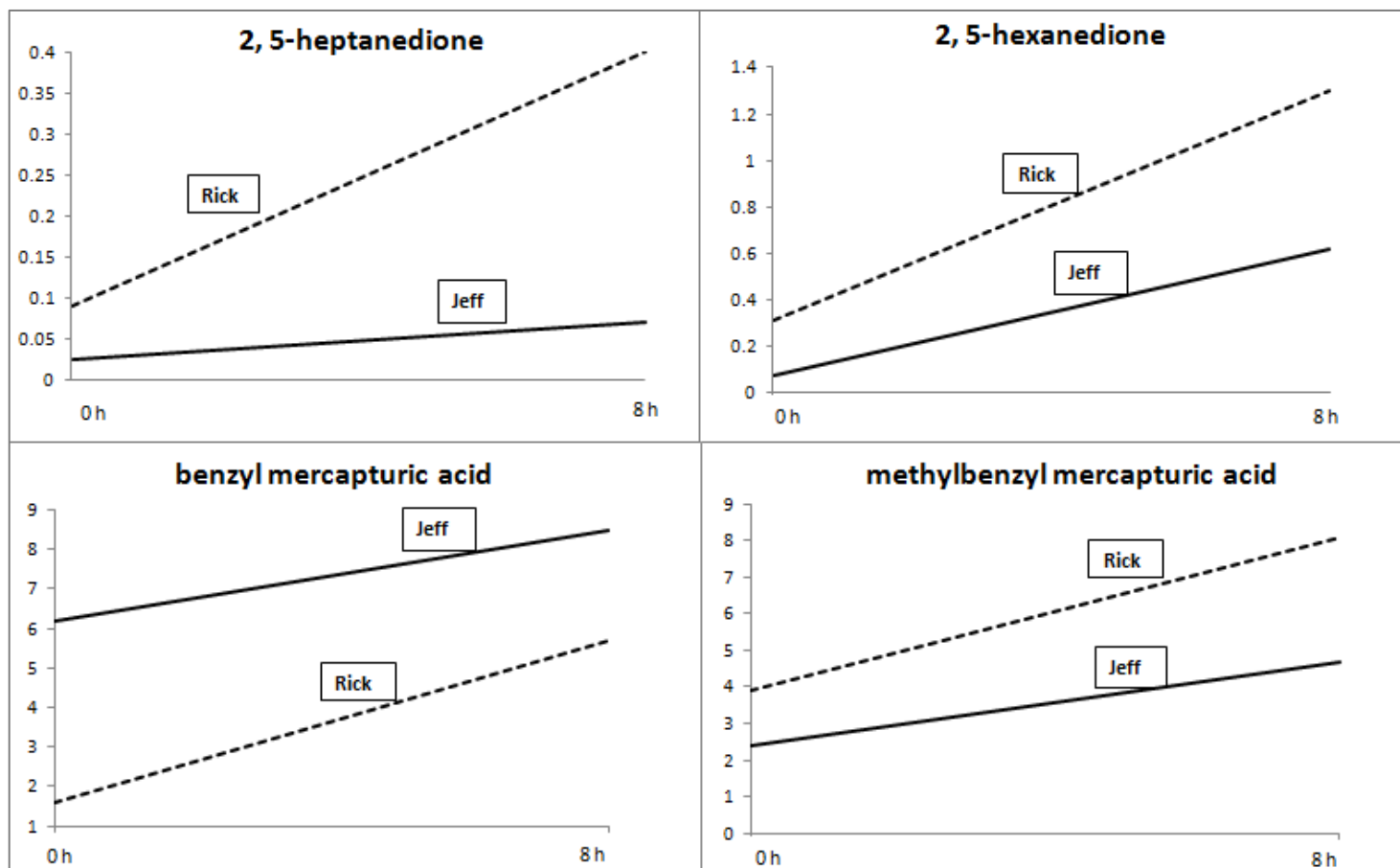
**Table 1** Epidemiological studies with data on associations between phthalate exposure as well as PVC material in the home and airway symptoms/diseases in children

Author and country	Study design	Population and age	Exposure	Health outcomes	Results
Jaakkola <i>et al.</i> (1999) Oslo, Norway <sup>a</sup>	Prevalent case-control	251 children with bronchial obstruction, 251 matched healthy controls (0–2 years)	Inspector observed PVC flooring in the home and a PVC index	Parental reported and doctor diagnosed bronchial obstruction used as case definition	Presence of PVC flooring and PVC index significantly associated to case status in adjusted analyses
Oie <i>et al.</i> (1999) Oslo, Norway <sup>a</sup>	Prevalent case-control	172 children with bronchial obstruction, 172 matched healthy controls (0–2 years)	Inspector observed PVC flooring in the home and a PVC index and measurement of ventilation rate in the home	Parental reported and doctor diagnosed bronchial obstruction used as case definition	PVC index in combination with low ventilation rate significantly associated with case status in adjusted analyses
Jaakkola <i>et al.</i> (2000) Espo, Finland	Cross sectional	2568 children (1–7 years)	Parental reported (questionnaire) plastic wall material in the home	Questionnaire reports on lower respiratory tract symptoms	Plastic wall material significantly associated to airway symptoms in adjusted analyses
Bornehag <i>et al.</i> (2005a) Varmland, Sweden <sup>b</sup>	Cross sectional	10 851 children (1–6 years)	Parental reported (questionnaire) PVC flooring in sleeping rooms	Questionnaire reports on doctor diagnosed asthma, rhinitis and eczema	PVC flooring in combination with water leakage in the home significantly associated to airway symptoms in adjusted analyses
Jaakkola <i>et al.</i> (2004) Nine cities, Russia	Cross sectional	5951 children (8–12 years)	Questionnaire reports on recent installed surface materials	Questionnaire reports of asthma and wheezing	PVC and Linoleum flooring material significantly associated with airway symptoms in adjusted analyses
Bornehag <i>et al.</i> (2004) Varmland, Sweden <sup>b</sup>	Prevalent case-control	198 cases with persistent asthma, rhinitis, and/or eczema, 202 controls without disease (2–7 years)	Concentration of selected phthalates in indoor dust and inspector observed flooring material in sleeping rooms	Doctor diagnosed asthma, rhinitis and eczema and IgE sensitization (RAST)	The concentration of DEHP in indoor dust as well as presence of PVC flooring significantly associated to case status and asthma in adjusted analyses. No association between phthalate exposure and IgE sensitization
Kolarik <i>et al.</i> (2008) Sofia, Burgas, Bulgaria	Prevalent case-control	102 cases, 82 controls (2–7 years)	Concentration of selected phthalates in indoor dust	Cases defined as having wheezing, rhinitis and eczema	The concentration of DEHP in indoor dust significantly associated to case status as well as wheezing last 12 months in adjusted analyses
Larsson <i>et al.</i> (2009) Varmland, Sweden <sup>b</sup>	Cohort study	4779 children (1–3 years at baseline and 6–8 years at follow up)	Parental reported PVC flooring in sleeping rooms at baseline	Questionnaire reported incident doctor diagnosed asthma at follow up	PVC flooring at baseline significantly associated with incident doctor diagnosed asthma in adjusted analyses

Phthalate exposure and asthma in children

C. G. Bornehag and E

# Modern Pollution is Invisible, but Measurable



**VOCs increase up to 4x after 8 hrs in a car**

# Consumer Attitudes are Changing

*Johnson & Johnson*

**P&G**  
*Procter & Gamble*

**Walmart**   
Save money. Live better.

  
**TARGET®**

# Green Consumer Facts

- Overall organic products sales growth of 9.5% (double that of comparable conventional products) in 2011 led to over \$60 billion in global sales in organic industry
- EcoFocus: 86% of all Americans are interested in making greener purchasing choices. 41% would do so with personal care products in 2012 (3% increase since 2010)
- 2010 survey of Canadian consumers: 74% willing pay at least 10% more for food that is healthier, safer, or produced to higher standards
- Trendwatching.com: repeatedly lists “Eco” and “Green” among the top consumer trends to watch for

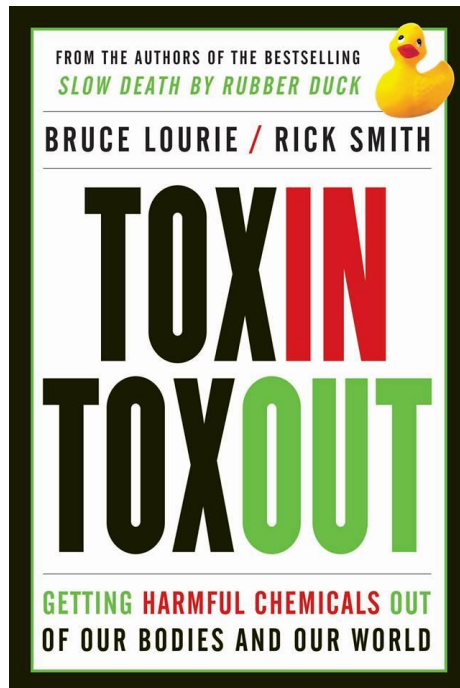
# Old Buildings are Green (Or Can Be)

- Old buildings reduce carbon pollution
- Old buildings can reduce toxic pollution





Thank you!



**Rick Smith**

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