Creating Healthy Homes for Our Kids

Nate Adams
Energy Smart Home Performance
Cleveland Ohio

nate@energysmartohio.com
How many gallons per day do we breathe?
3000 gallons per day
**Results:** Sixty-nine eligible articles were included. Major changed conclusions include: a causal relationship with exacerbation for indoor dampness-related agents (in children); associations with exacerbation for dampness-related agents (in adults), endotoxin, and ETS (in pre-school children); and limited or suggestive evidence for association with exacerbation for indoor culturable *Penicillium* or total fungi, NO₂, rodents (nonoccupational), feather/down pillows (protective relative to synthetic bedding), and (regardless of specific sensitization) dust mite, cockroach, dog, and dampness-related agents.
Particulate Matter aka Dust

- **PM<sub>2.5****: Combustion particles, organic compounds, metals, etc. < 2.5 μm (microns) in diameter.
- **PM<sub>10****: Dust, pollen, mold, etc. < 10 μm (microns) in diameter.
- **HUMAN HAIR**: 50-70 μm (microns) in diameter.
- **FINE BEACH SAND**: 90 μm (microns) in diameter.

Image courtesy of the U.S. EPA.
Four Tenets

1. Comfort
2. Health & Safety
3. Durability
4. Efficiency
Control moisture, contaminants, chemicals with dehumidification, filtration, and source control.
Want These?  

Use Five Priorities:  

1. Air Seal  
2. Air Seal  
3. Air Seal  
4. Insulate  
5. Right HVAC
Case Study

Debilitating Mold Allergy
Dry Out the Building First

Stop water leaks
Stop moisture from coming up through earth

Then dehumidify
Fresh, Filtered, Dry Air
Good Filtration

Media Filter
Measureable Difference

VOC 2016-06-28 to 2016-07-21

From: 6/28/16 10:03 AM  
To: 7/21/16 10:03 AM

HVAC Install

Before Install Spiky!

No More Spikes!
3000 Gallons: Make It Healthy

Fresh, Filtered, Dry
First Step: Measure

Low-Res Video vs. Hi-Res Snapshot
Prescription without diagnosis is malpractice.

Spend time finding root causes in problematic homes.
Job Opportunity?

Focus on sick kids aka “frequent fliers”? 

Offset healthcare costs?
Creating Healthy Homes for Our Kids

Nate Adams
Energy Smart Home Performance
Cleveland Ohio

nate@energysmartohio.com
330-524-6495
bit.ly/BuildingScience101