



Living Toxin Free AIR

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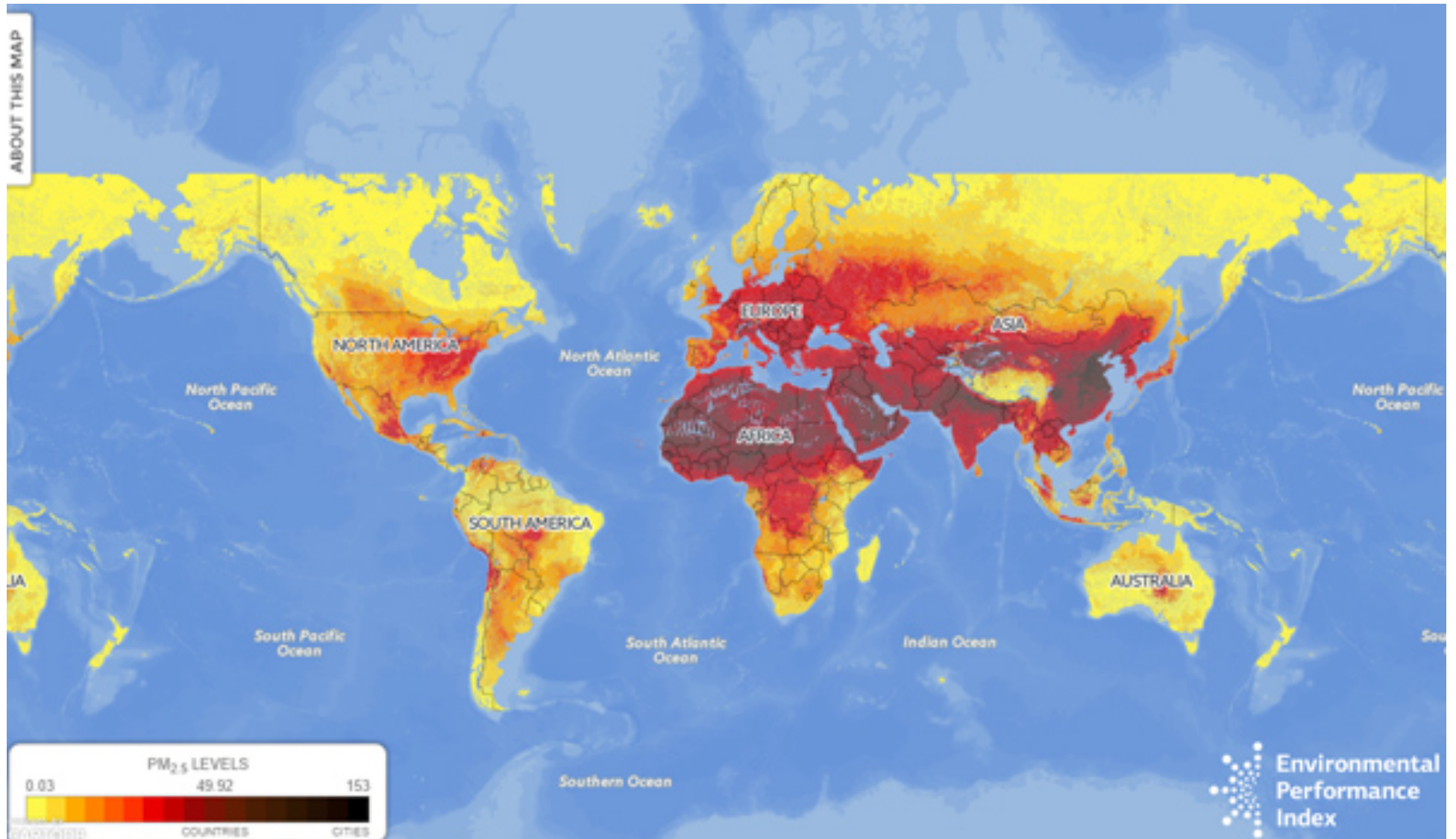
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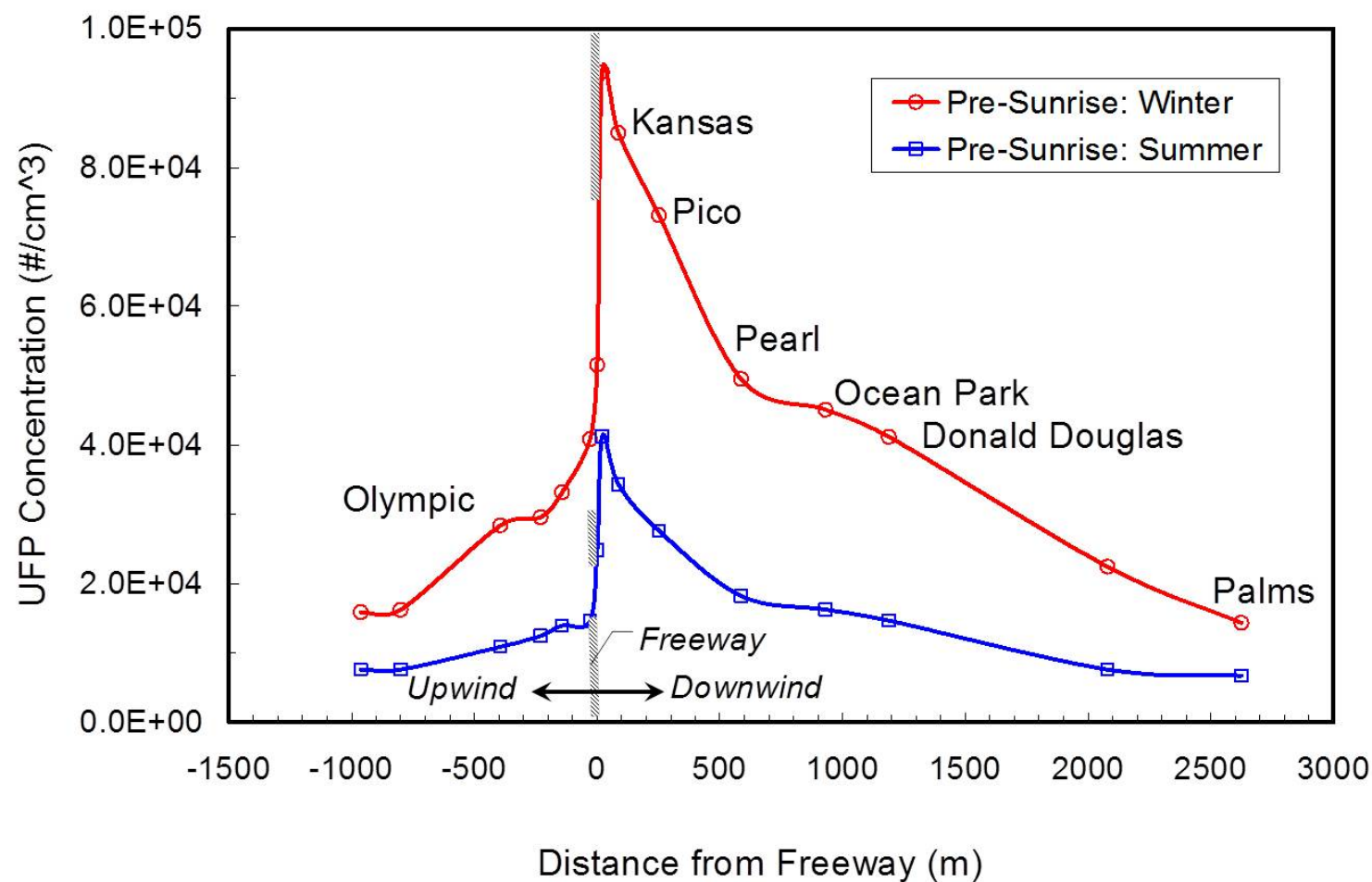


Air Pollution Common, Esp. in Cities





Living in Cities or Near Highways Increases Toxic Exposure





The Worst Air Pollutants

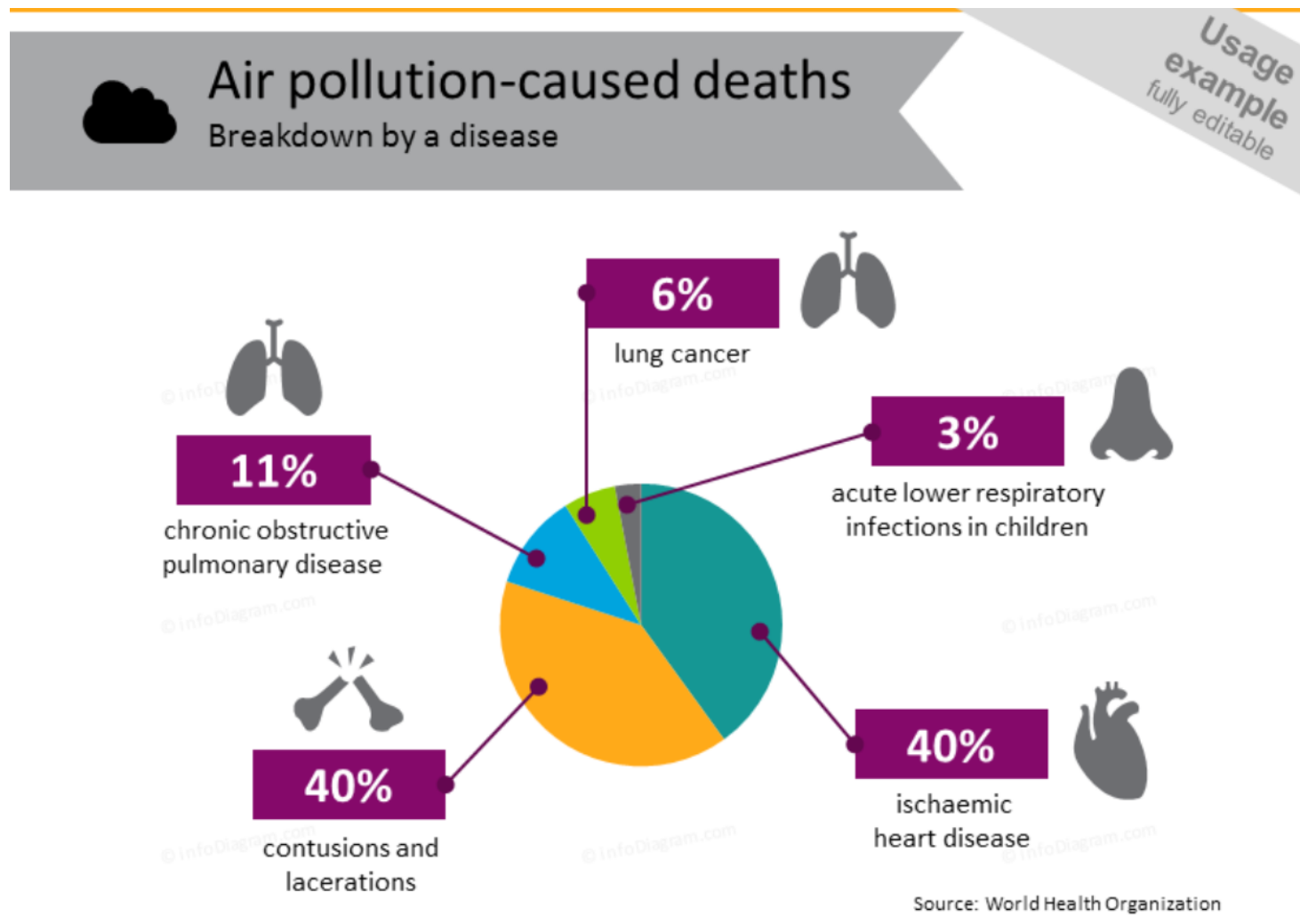
- Ozone
- NO_x
- SO_x
- PAH (polycyclic aromatic hydrocarbons)
- Particulate matter (esp $\text{PM}_{2.5}$)



Diseases Caused/Aggravated by Air Pollution

- Asthma attacks
- Chronic Obstructive Pulmonary Disease (COPD)
- Diabetes
- Ischemic heart disease
- Lower respiratory infections
- Pneumonia
- Pulmonary cancer
- Reduced lung function
- Stroke

Air Pollution: A Significant Cause of Disease





WAYS TO DECREASE AIR POLLUTION



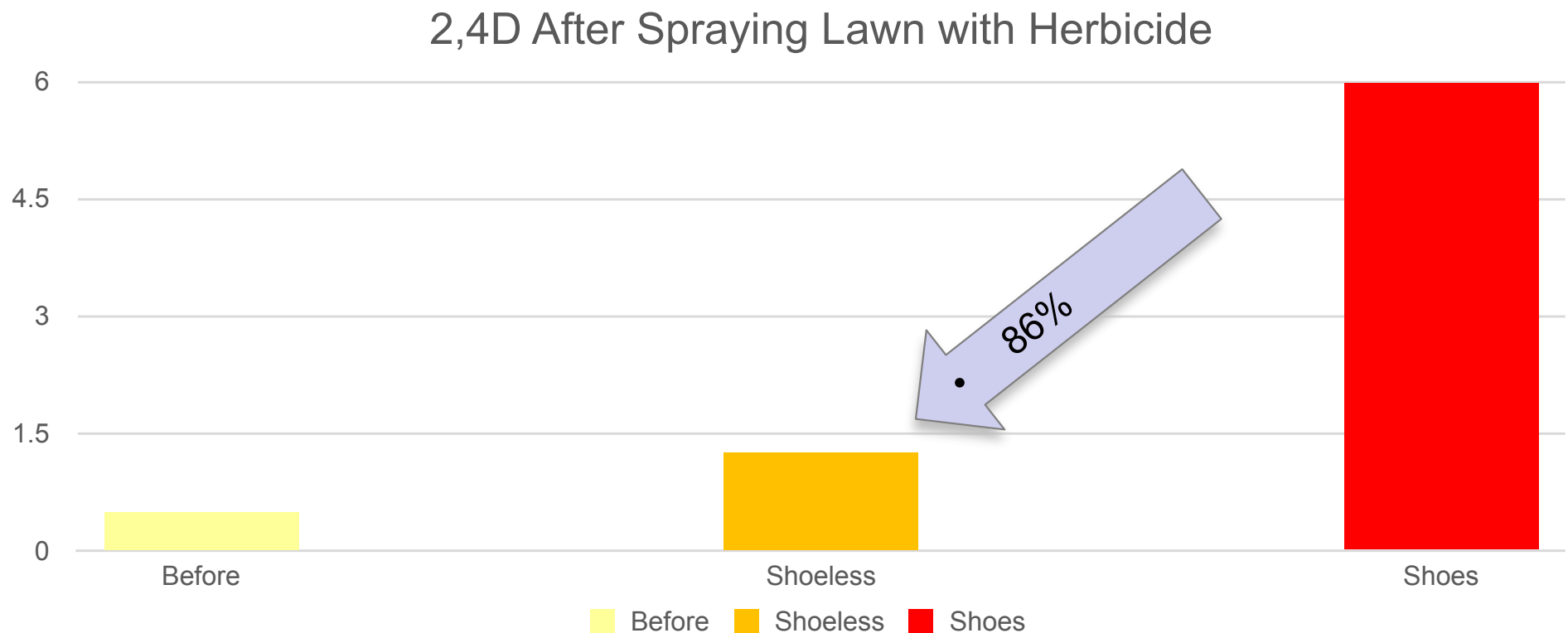
Strategies - Air

- Whole house filter: Merv-8 (at least), run 24/7
 - If not: HEPA filters in main rooms
- Take off shoes before entering house
- Declare scent-free zone
- Filter outdoor air for fresh circulation
- Toxin-absorbing plants decrease chemicals in air





Take off Shoes Before Entering House



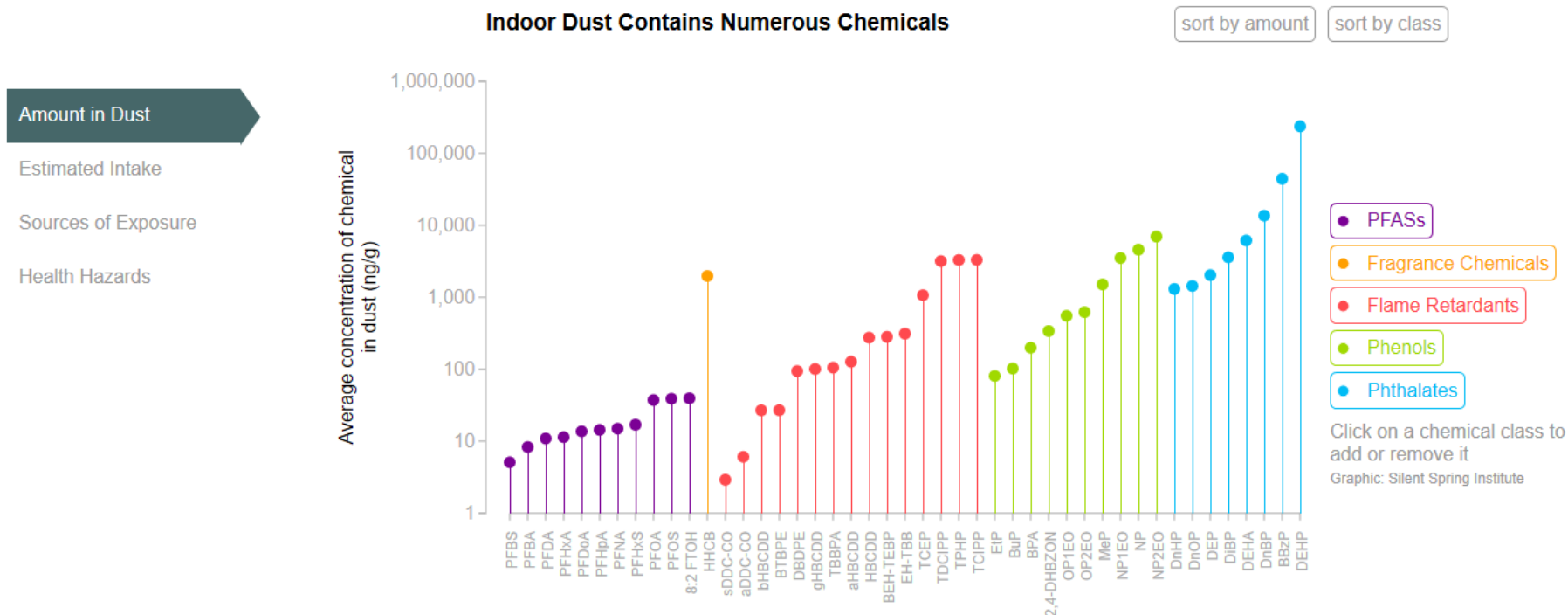
Nishioka MG, Burkholder HM, Brinkman MC, Lewis RG. Distribution of 2,4-Dichlorophenoxyacetic Acid in Floor Dust throughout Homes Following Homeowner and Commercial Lawn Applications: Quantitative Effects of Children, Pets, and Shoes. Environmental Science & Technology 1999 33 (9), 1359-1365

Keep House Clean as Possible

- Especially if crawling children



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Average (geometric mean) dust levels in nanograms of chemical per gram of dust for the 45 chemicals reported in at least three data sets. The average concentration of DEHP is about 45,000 times higher than PFBS.



Plants Absorb Toxic Air Chemicals

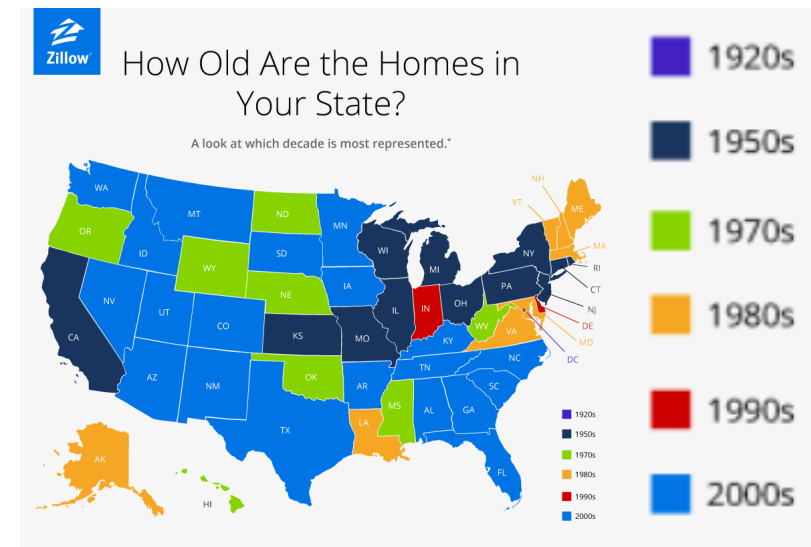
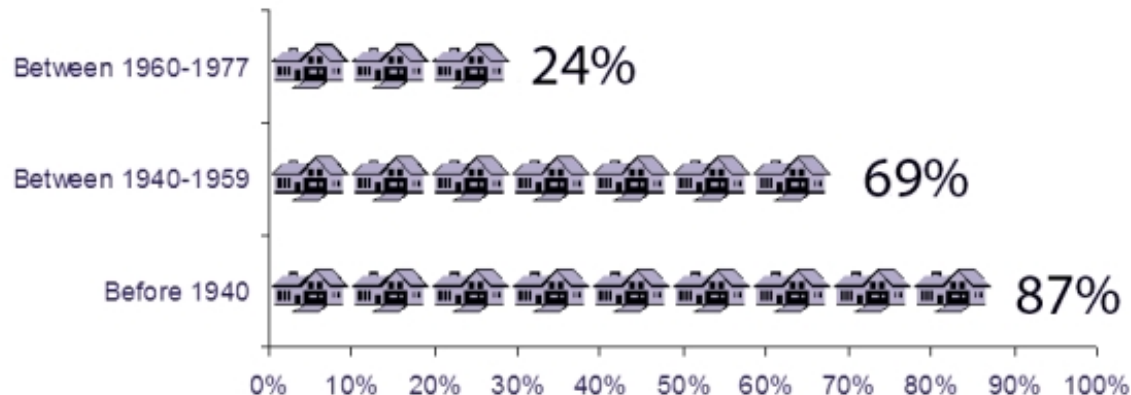
TABLE 60.4 Percentage of Chemicals Removed From a Sealed Chamber by Houseplants in a 24-Hour Period in a NASA Study

Plant	Formaldehyde	Benzene	Trichloroethylene
Mass cane	70	21.4	12.5
Pot mum	61	53	41.2
Gerber daisy	50	67.7	35
Wernicke	50	52	10
Ficus	47.4	30	10.5
Leak control	2.8	5	10

From Wolverton, B. C., & Johnson, A. (1989). Interior landscape plants for indoor air abatement. *National Aeronautics and Space Administration*. Retrieved from <https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/19930073077.pdf>

Address Lead-Based Paint if Older House

Older Homes are More Likely to Contain Lead-Based Paint



- Old white paint may be as high as 38% lead!
- Old paint should be covered up (use encapsulants)
- If sanding, be extremely careful to use proper mask and aggressive dust control.
- Even washing the paint will release lead.
- Soil next to house must be removed before growing food



Just 2 Days in Clean Room Improves Health

- Merv-12 filter
- 33-58% reduction in inflammatory mediators
- Decrease in blood pressure

TABLE 33.3 Reduction in Blood Pressure and Inflammatory Markers After 48 Hours of Residence in a Room with a MERV 12 Filter Unit

Cardiovascular	Biomarkers
Systolic pressure – avg. 2.7 mm Hg drop	IL-1B – 58% reduction
Diastolic pressure – avg. 4.8% mm Hg drop	Soluble CD40 ligand – 55% reduction
Exhaled nitrous oxide – 17% drop	Myeloperoxidase – 33% reduction
	Monocyte chemoattractant protein 1–17.5% reduction

Data from Chen, R., Zhao, A., Chen, H., Zhao, Z., Cai, J., Wang, C., et al. (2015). Cardiopulmonary benefits of reducing indoor particles of outdoor origin: a randomized, double-blind crossover trial of air purifiers. *Journal of the American College of Cardiology*, 65(21), 2279–2287.

Guidance for Safe Cleaning of Leaded Paint

HOMEOWNER AND TENANT GUIDE

SAFE CLEANING OF LEAD PAINT CHIPS AND DUST

STEP ONE: Prepare Supplies

1

Prepare. Gather rubber gloves, throw-away wipes or towels, garbage bags, spray bottle with soap and water, and mop.

Put on rubber gloves. If you do not have rubber (or disposable) gloves, you will need to wash your hands well after cleaning.

Use supplies you can throw away. Use soapy cleaners or products made to remove lead dust.

Don't use a vacuum unless it is a HEPA vacuum. A regular vacuum will spread lead dust into the air. Some health departments have HEPA vacuums available to borrow.



STEP TWO: Remove Paint Chips

2

Remove paint chips. Window areas and porches often have peeling paint and lead dust. Pick up the paint chips you can see and throw them away in a plastic bag.



STEP THREE: Wet & Wipe Surfaces

3

Always spray window sills with soap and water and wet-mop floors. Do not use a broom to sweep lead dust. Throw away wipes after cleaning each area.



STEP FOUR: Mop

4

Mop with a disposable mop head or paper towel to wipe away suds.



STEP FIVE: Clean Often

5

Change towels often until no paint chips, dust or dirt can be seen. Put garbage in a plastic bag, and seal with tape or a knot. The sealed bag can be disposed of with normal trash for pickup.

Repeat these steps weekly, or when dirt and dust appear on floors, porches, window wells, window sills, stairs or children's play areas.



For more information, visit www.michigan.gov/lead or call the Childhood Lead Poisoning Prevention Program at 517-335-8885.





If Mold, Remediate Now



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- 50% of buildings in N. America are water damaged
- 71% of adult-onset asthma is due to moving into a mold-damaged building (home or office)

Table 2

Clinical Conditions Indicative of Dampness and Mold

- Common conditions
 - Allergic rhinitis
 - Exacerbation of asthma
 - Respiratory infections
- Common symptoms
 - Cough
 - Upper respiratory tract (nasal and throat) symptoms
 - Wheeze
- Rare conditions
 - Allergic alveolitis
 - Allergic fungal sinusitis
 - Chronic rhinosinusitis
 - Hypersensitivity pneumonitis

**Seriously,
Toxin Exposure**





"The definitive book linking the exploding burden of environmental toxins to chronic diseases, including autoimmunity, obesity, and cancer."

—MARK HYMAN, MD

THE TOXIN SOLUTION

How Hidden Poisons in the Air, Water, Food, and
Products We Use Are Destroying Our Health—

AND WHAT WE CAN DO TO FIX IT



DR. JOSEPH PIZZORNO

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Clinical Environmental Medicine

Identification and Natural Treatment of
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