

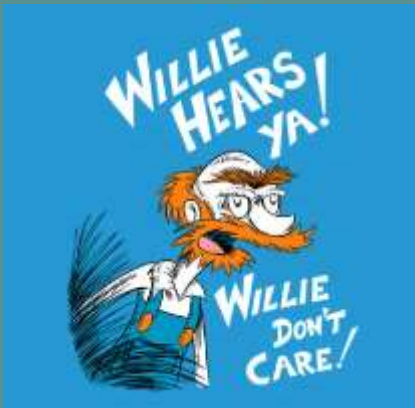
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Ventilation: and I care Why?



2023 IAQ and Energy



Grandma
&
Grandpa



AVA

Rylee

My Mom

Nurse

Mother of 5

Grandmother 14

GG -2

Died at 92

Full life



Was on NO
medication.





Hal
Athlete
always in
shape.
Exercised
Never
drank or
smoked



10 Years hauling chemicals
At 66 diagnosed with ALS - dead @ 70



My Brother



Howie

Estonia



Sarah

Mom House



We liked to ski together



Always Loved Cars.... So he became an Autobody Expert



But



He died last year at 64 of ALS and dementia

How many everyday items have these types chemicals?

HAZARDOUS MATERIALS LABEL IDENTIFICATION SYSTEM

HAZARDOUS MATERIALS CLASSIFICATION

OX OXIDIZER	WORK BACKWARD COLOR FOR THE DEGREE OF HAZARD FOR EACH CATEGORY
AC ACID	4 SEVERE HAZARD
AL ALKALI	3 SERIOUS HAZARD
CO CORROSIVE	2 MODERATE HAZARD
W USE NO WATER	1 SLIGHT HAZARD
RAD RADIATION HAZARD	0 MINIMAL HAZARD

HAZARDOUS INDEX RATINGS FOR CONTAINER LABELING

HEALTH HAZARD	FIRE HAZARD	REACTIVITY	TARGET ORGAN
4-SEVERE HAZARD-SPECIAL FULL BODY SUIT MUST BE WORN	4-EXTREMELY FLAMMABLE, FLASH POINT BELOW 73°F	0-VERY STABLE UNDER NORMAL CONDITIONS	4-SEVERE HAZARD TO TARGETED ORGANS, USE FULL SUIT
3-SERIOUS HAZARD-FULL BODY SUIT SHOULD BE WORN	3-VERY FLAMMABLE, RANGE OF NORMAL TEMPERATURE CONDITIONS	1-MAY EXPLODE WITH SHOCK OR HEAT	3-SERIOUS HAZARD TO TARGETED ORGANS, USE FULL SUIT
2-MODERATE HAZARD-SPRINKLING APPLICATOR WITH FULL FACE MASK SHOULD BE WORN	2-IGNITES WITH MODERATE HEATING, FLASH POINT BELOW 200°F	2-EXPLODES CHEMICALLY, SUITABLE BUT WILL NOT DETONATE	2-MODERATE HAZARD TO TARGETED ORGANS, USE TARGETED PROTECTION
1-SLIGHT HAZARD-WEARING APPLICATOR MAY BE WORN	1-IGNITES WHEN HEATED, FLASH POINT ABOVE 200°F	3-MAY EXPLODE OR REACT, USE CAUTION	1-SLIGHT HAZARD TO TARGETED ORGANS, USE TARGETED PROTECTION
0-MINIMAL HAZARD-NO PRECAUTIONS NECESSARY	0-NON-COMBUSTIBLE, WILL NOT IGNITE	4-UNSTABLE, TOXIC	0-MINIMAL HAZARD TO TARGETED ORGANS, PROTECTION OPTIONAL

HEALTH HAZARD

- 4—Deadly
- 3—Extreme Irritant
- 2—Irritant
- 1—Slightly Irritant
- 0—Non-Irritant

FIRE HAZARD
Flash Points

- 4—Below 73°F
- 3—Below 100°F
- 2—Below 200°F
- 1—Above 200°F
- 0—Will not burn

REACTIVITY

- 4—May detonate
- 3—Shock and heat may detonate
- 2—Violent Chemical Change
- 1—Unstable if Heated
- 0—Stable

SPECIFIC HAZARD

- OX—Oxidizer
- AC—Acid
- AL—Alkali
- CO—Corrosive
- W—Use NO WATER
- *—Radiation Hazard

PERSONAL PROTECTION, TARGET ORGANS, & INDEX RATINGS

EXAMPLE:

METHANOL CAS #64682

HEALTH	1
FLAMMABILITY	3
REACTIVITY	0
TARGET ORGAN	HEALTH, EYES, SKIN

PERSONAL PROTECTION SYMBOLS	TARGET ORGANS	RATINGS
[Eye Protection] [Gloves] [Footwear]	BLOOD, BLOOD CIRCULATION, STOMACH	4
[Eye Protection] [Respirator] [Gloves] [Footwear]	CARDIO-VASCULAR SYSTEM, CENTRAL NERVOUS SYSTEM, ENDOCRINE SYSTEM, EYES	3
[Eye Protection] [Respirator] [Gloves] [Footwear]	GASTRO-INTESTINAL TRACT, HEART, KIDNEYS, LIVER	2
[Eye Protection] [Respirator] [Gloves] [Footwear]	LUNGS, LYMPHATIC, LYMPHATIC SYSTEM, PERIPHERAL NERVOUS SYSTEM	1
[Eye Protection] [Respirator] [Gloves] [Footwear]	PROSTATE, REPRODUCTIVE SYSTEM, SKIN, TEETH	0

What about everyday products?

Cleaning



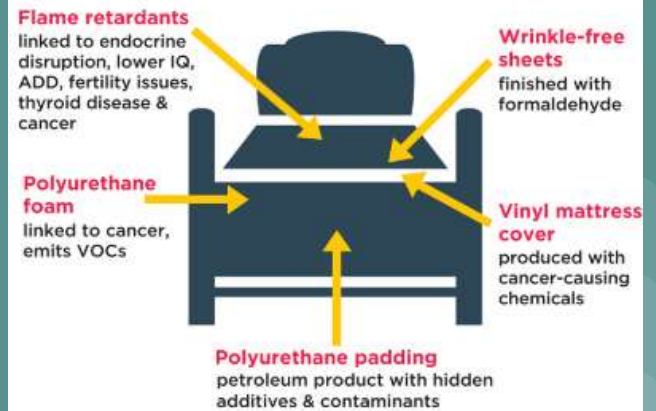
Auto Care



Personal Care Products



Toxic Chemicals in Bedding



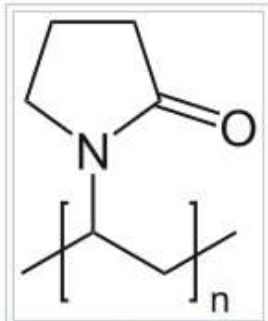
LOOK FOR THE **MADE SAFE** SEAL

Hair Spray

Hair spray (also **hair lacquer** or **spritz**) is a common **cosmetic hairstyling product** that is sprayed onto hair to protect against humidity and wind and have it stay in a desired shape. Hair sprays typically consist of several components for the hair as well as a propellant.^[1]

Ingredients and operation [\[edit \]](#)

Hair sprays consist of the following components: concentrate, **plasticizers**, luster agents, and **fragrances**, as well as propellants.



Polyvinylpyrrolidone [\[edit \]](#)
is a common component of hair spray that confers stiffness to hair.

Concentrate [\[edit \]](#)

Hair spray are a **blend of polymers that provide structural support to hair**. These frequently include copolymers of **polyvinylpyrrolidone (PVP)** and **polyvinyl acetate (PVAc)**. **Vinyl acetate-crotonic acid copolymers give harder films**. In this way hairsprays can be formulated as flexible, medium, and maximum hold.^[2] The copolymer mixture is usually adjusted to achieve the desired physical properties (adhesive strength, foaming, etc.), **using plasticizers such as aminomethyl propanol**, **surfactants such as benzalkonium chloride**, and other agents like **dimethicone**.

Propellants [\[edit \]](#)

Since the phase-out of CFCs in the 1980s, hydrocarbons are popular propellants. These include **propane, butane, isobutane, and related volatile hydrocarbons**, as well as other mixtures. Such hydrocarbons are poor solvents for the active ingredients such as the polymers. For this reason **dimethyl ether** is often added as well. It functions both as a propellant and a solvent.^[1]



Two varieties of modern hair sprays. [\[edit \]](#)

Right off the Bathroom Counter



Health Effects of Chemical Exposure

You come into contact with chemicals every day.

This is called chemical exposure. Although some chemical exposures are safe, others are not. A certain amount of a harmful chemical must enter your body to make you sick. Harmful chemicals can get into your body if you breathe, eat, or drink them or if they are absorbed through your skin. This booklet explains some links between chemicals and other harmful substances and their possible health effects.

People respond to chemical exposures in different ways. Some people may come into contact with a chemical and never be harmed. Others may be more sensitive and get sick. Sometimes illness happens only if you are exposed to a harmful substance for a long time.

Many factors play a part in whether you get sick from contact with chemicals, including

- The kind of chemical you are exposed to,
- How much of the chemical you were in contact with,
- How long the contact lasted,
- How often you were exposed,
- How it entered your body, and
- Your health.



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Health Effects of Some Chemicals on Your Body Systems

The RESPIRATORY SYSTEM's function is to supply oxygen to the body and remove carbon dioxide. It includes the nasal passages, pharynx, trachea, bronchi, and lungs. Possible health effects of the respiratory system include asthma, chronic bronchitis, fibrosis, emphysema, and decreased oxygen supply to blood.

Possible Contaminants	Where do you find these?
Asbestos	Old insulation
Radon	The ground
Cadmium	Old batteries
Benzene	Degreasers
Carbon monoxide	Car exhaust, unvented or faulty furnaces
Soot	Furnaces, wood burning stoves

The RENAL SYSTEM's function is to rid the body of waste, to regulate the amount of body fluids, and to regulate the amount of salts in the body. It includes the kidneys, the ureters, the bladder, and the urethra. Possible health effects of the renal system include decreased formation of urine, decreased blood flow to kidney, decreased ability to filter the blood, prevented urine flow, kidney tissue damage, and kidney cancer.

Possible Contaminants	Where do you find these?
Cadmium	Old batteries, cigarette smoke
Lead	Old paint, outdated plumbing
Mercury	Thermometers, thermometers, some fish
Uranium	Food & water, proximity to nuclear testing sites
Chlorinated hydrocarbon solvents (TCE, PCE, PCT)	Degreasers, paint removers, dry cleaning solutions

The CARDIOVASCULAR SYSTEM's function is to move nutrients, gases, and wastes to and from the body, to help regulate body temperature, and to fight diseases and infections by transporting white blood cells to important areas. It includes the heart, blood, arteries, veins, and capillaries. Possible health effects include heart failure and the inability of blood to carry the necessary oxygen to the body.

Possible Contaminants	Where do you find these?
Carbon monoxide	Car exhaust, unvented or faulty furnaces
Carbon disulfide	Industrial production
Nitroses	Fertilizers
Methylene chloride	Auto part cleaners, paint removers

The REPRODUCTIVE SYSTEM's function is to produce egg and sperm cells, to nurture a developing fetus, and to produce hormones. For males it includes the testicles, seminal vesicles, prostate gland, and the penis. For females it includes the uterus, bladder, vagina, fallopian tubes, ovaries, and the cervix. Possible health effects of the reproductive system include decreased ability to have a baby, increased baby deaths, increased birth defects, and infertility (the inability to have children).

Possible Contaminants	Where do you find these?
Methyl mercury	Some fish, coal-burning power
Carbon monoxide	Car exhaust, unvented or faulty furnaces
Lead	Old paint, outdated plumbing

Source: National Institute of Health, Hazardous Waste Database, <http://hwd.nlm.nih.gov/toxics.htm>, Agency for Toxic Substances and Disease Registry, ATSDR's ToxFAQs, <http://www.atsdr.cdc.gov/toxfaq.html>

Health Effects of Some Chemicals on Your Body Systems

The NERVOUS SYSTEM's function is to transmit messages from one part of the body to another. It includes the central nervous system (the brain and spinal cord) and the peripheral nervous system. Possible health effects of the nervous system include inability to move, loss of feeling, confusion, and decreased speech, sight, memory, muscle strength, or coordination.

Possible Contaminants	Where do you find these?
Arsenic	Pressure treated wood
Cadmium	Discarded batteries
Carbon monoxide	Car exhaust, unvented or faulty furnaces
Cyanide	Rat poison

The IMMUNE SYSTEM's function is to protect the body from tumor cells, environmental substances, and invading organisms like germs. It includes the lymph system, bone marrow, white blood cells, and the spleen. Possible health effects of the immune system include overreaction to environmental substances (allergy), immune system slow down or failure, and autoimmunity (autoimmunity causes the body to attack itself - which makes it more likely to have an over-reaction or infection).

Possible Contaminants	Where do you find these?
Mercury	Thermometers, thermometers, some fish
Lead	Old paint, outdated plumbing
Pesticides	Unwashed fruits and vegetables
Polychlorinated biphenyls (PCBs)	Industrial waste, fish from contaminated water
Polycyclic aromatic hydrocarbons (PAHs)	Cigarette smoke, vehicle exhaust, asphalt roads

The SKIN serves as a barrier to germs and other substances, prevents dehydration, and regulates body temperature. Possible health effects of the skin include irritation, rash, redness or discoloration, dermatitis, and health effects related to other systems and organs due to contamination through the skin.

Possible Contaminants	Where do you find these?
Nickel	Cement
Mercury	Thermometers, thermometers, some fish
Arsenic	Pressure treated wood
Chromium	Paints, industrial production
Polychlorinated biphenyls (PCBs)	Industrial waste, fish from contaminated water
VOC (volatile organic compound)	Fumes from gasoline, paint, adhesives, building supplies

The HEPATIC SYSTEM's function is to break down food and store nutrients, to make proteins which are essential for blood to clot, and to purify the body of drugs, contaminants, or chemicals. It includes the liver and its veins. Possible health effects of the hepatic system include liver damage, tumors, accumulation of fat (fatty liver), and death of liver cells.

Possible Contaminants	Where do you find these?
Carbon tetrachloride	Adhesives
Methylene chloride	Auto part cleaners, paint removers
Vinyl chloride	Flpe sealer

Reduce Exposure

Health Effects of Chemical Exposure



Wash fruits and vegetables.

Keep home ventilated.



You come into contact with chemicals every day, but that does not necessarily mean that you will get sick. The human body has a good defense system. It usually tries to get rid of harmful substances.

Some diseases get worse when you come into contact with a harmful substance, and some diseases are caused by exposure to chemicals. A few examples of diseases caused by an exposure include smog and asthma caused by exposure to smog, mesothelioma caused by exposure to asbestos, and learning disabilities caused by exposure to lead.

You can reduce your contact with harmful chemicals by

- Being aware of chemicals in everyday products;
- Being aware of any contamination, pollution, or hot spots (areas known to have harmful amounts of contamination) around your home or work;
- Washing your hands;
- Washing fruits and vegetables;
- Reading labels that warn you about chemical exposure;
- Not burning treated wood;
- Keeping your home ventilated;
- Following proper disposal guidelines for electronics, batteries, paint, and other harmful chemical-containing products;
- Limiting intake of fish high in mercury and following local fish advisories (But remember: Consuming low-mercury fish is part of a healthy diet!); and
- Avoiding cigarette smoke.

For more information about the health effects of chemical exposure or other environmental health topics, please call the ATSDR Information Center, toll-free, at 1-800-232-4636, or visit our Web site at <http://www.atsdr.cdc.gov>.

The Agency for Toxic Substances and Disease Registry (ATSDR), based in Atlanta, Georgia, is a federal public health agency of the U.S. Department of Health and Human Services. ATSDR partners with communities across the nation to increase knowledge about toxic substances, reduce the health effects of toxic exposures, and protect the public health.

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Let's Just talk about 3 areas of Concern

- Asthma - 1 in 9 & Allergies
- Lung Cancer - Leading Cancer Killer..... second place is not even close
- Autism - 1 in 36

How Many in this Room Suffer from Asthma or Allergies?

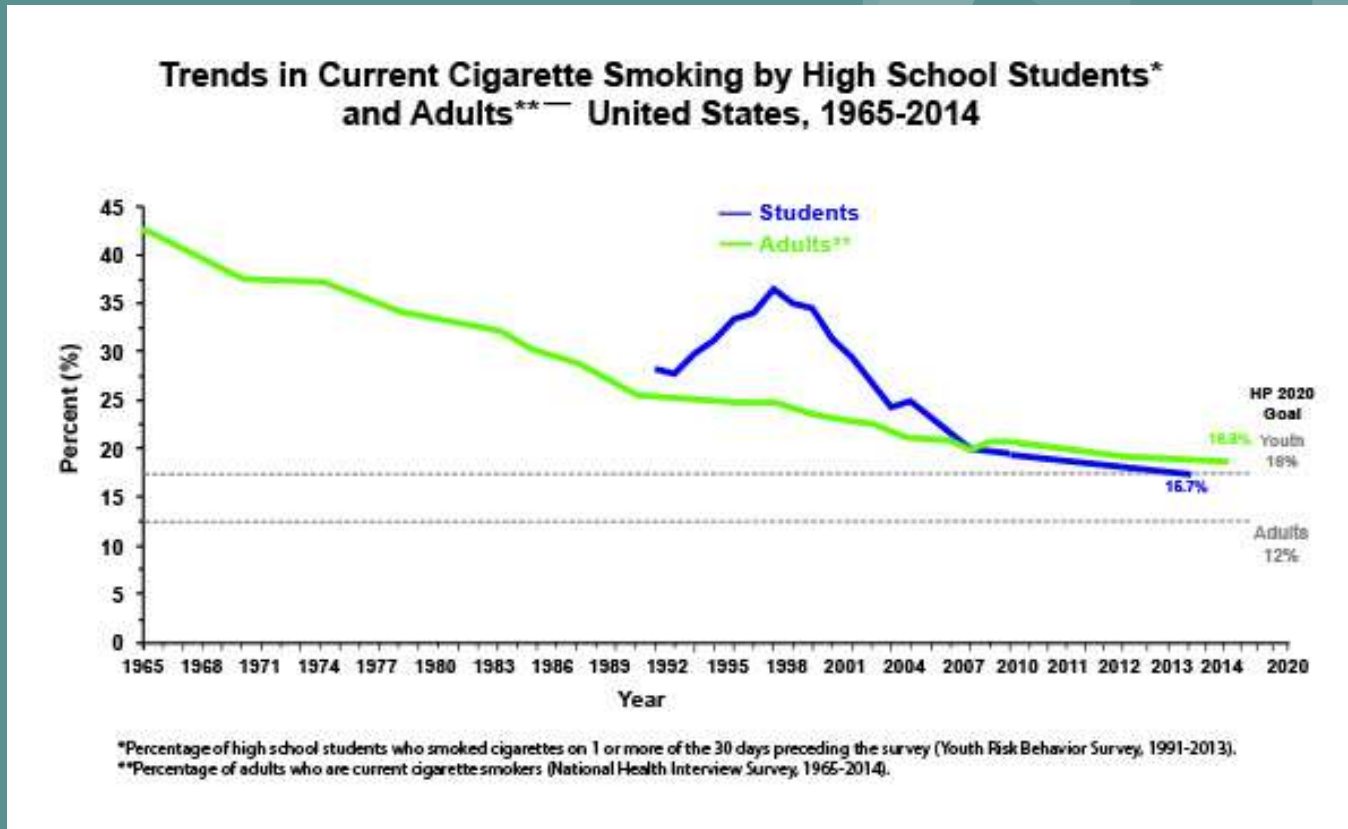


Does that seem a little odd?

between 1978 - 1992 Asthma rates triple!!!

while

Smoking rates decline

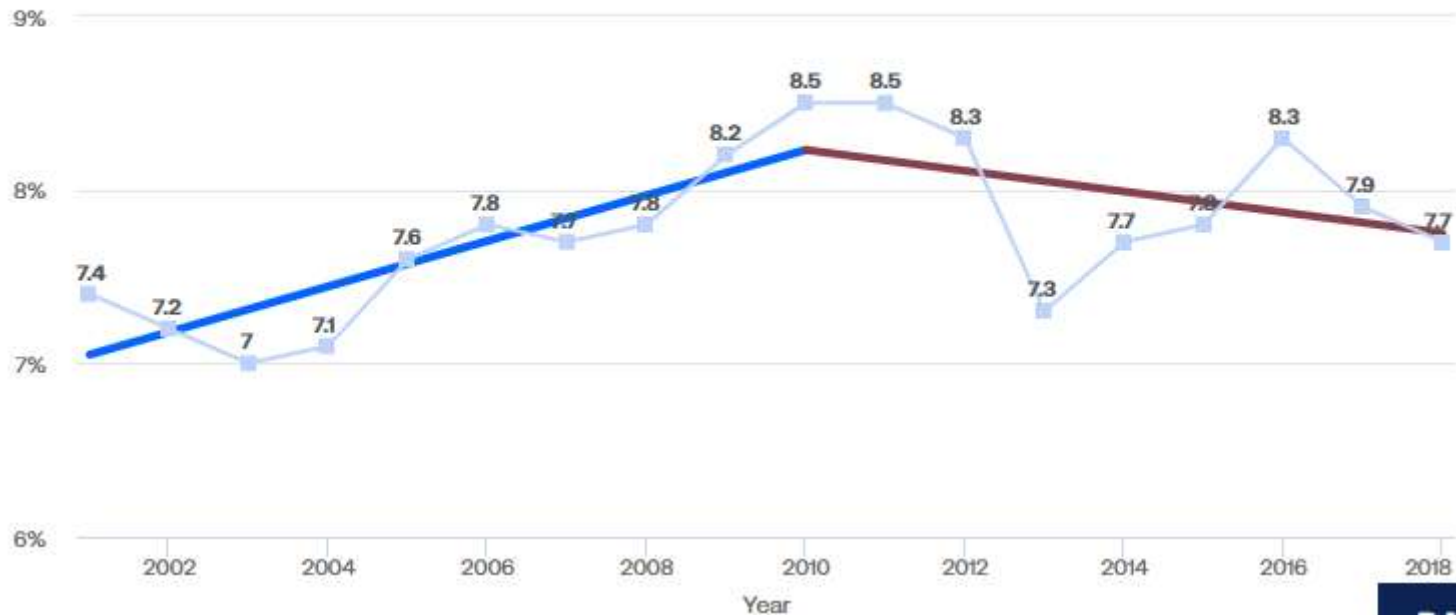


Smoking issue wanes with less smokers and laws banning use indoors

Good News!?

Current asthma rates increased an average of 0.1 points per year from 2001 to 2010, but have been close to flat since

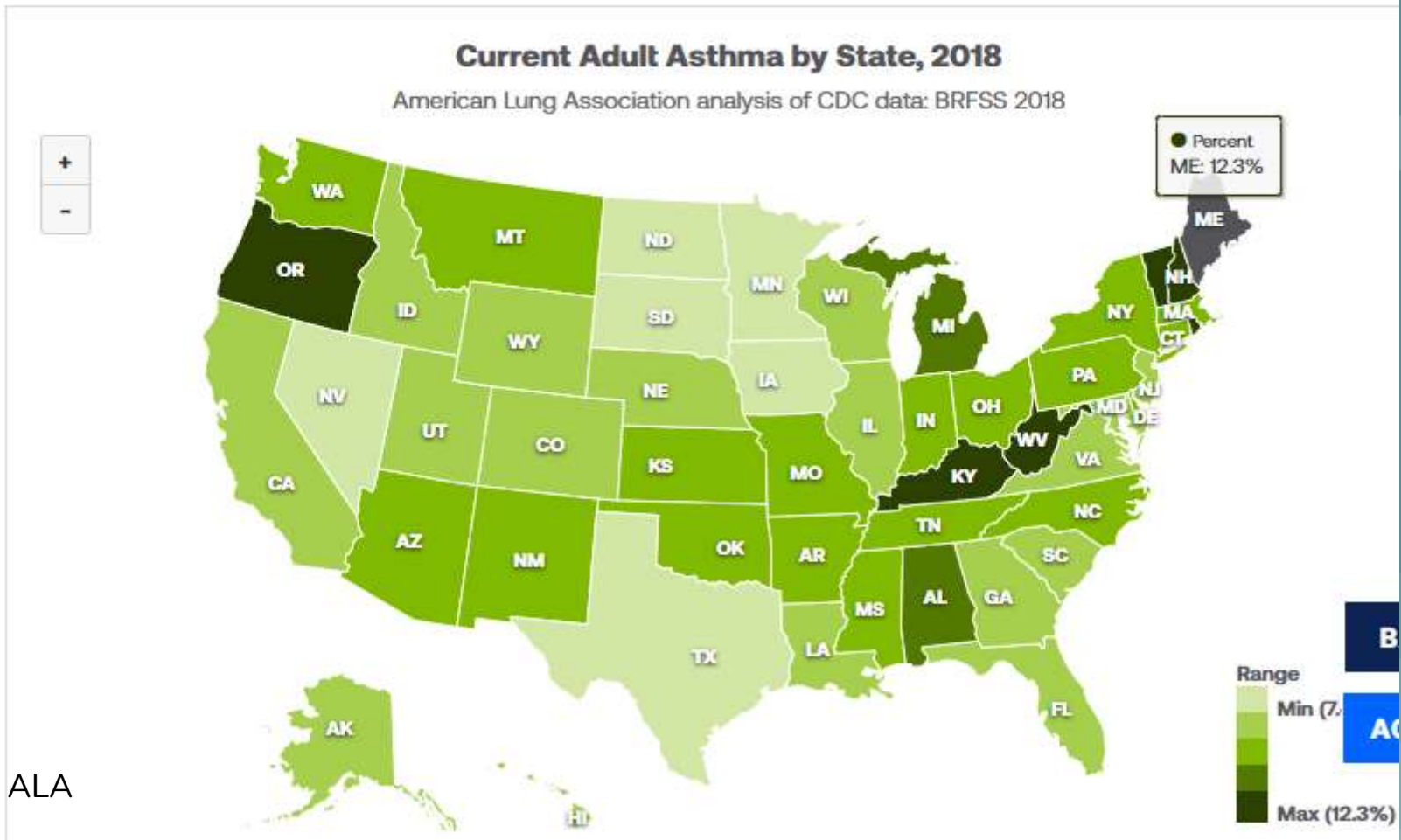
Source: CDC, NHIS 2001-2018. Analysis by the American Lung Association Epidemiology and Statistics Unit.



Not Always Good to be #1

Current Adult Asthma by State

- In 2018, current asthma rates among adults ranged from 7.4 percent in Texas to 12.3 percent in Maine and West Virginia. [Show data table](#) 



ALA

Seasonal and Environmental Allergies



50+
MILLION

Americans diagnosed



24

MILLION

Americans have
seasonal allergic rhinitis



3.1

MILLION

missed work days
per year



\$8

BILLION

annual costs



85%

of asthma patients
have allergic rhinitis

1 parent with allergies = **50%** children more likely to have allergies



2 parents with allergies = **75%** children more likely to have allergies



ENVIRONMENTAL

FACTORS: Pollen,
Mold, Dust Mites, Animal
Dander, Cockroaches/Mice

COMMON SYMPTOMS:

Runny or Stuffy Nose;
Sneezing; Coughing;
Watery, Red or Swollen
Eyes; Itchy Nose or Eyes;
Hives/Rash; Feeling Tired

Asthma Costs

Economic Cost

- From 2008 to 2013, asthma accounted for \$81.9 billion each year in total economic cost in the United States:
 - Health care costs – \$50.3 billion per year
 - Mortality – \$29.0 billion per year
 - Missed school and work days – \$3.0 billion per year

Swedish Studies and Allergy Risk

OPEN ACCESS Freely available online



Common Household Chemicals and the Allergy Risks in Pre-School Age Children

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Abstract

Background: The risk of indoor exposure to volatile organic compounds (VOCs) on allergic airway diseases in children remains unknown.

Objective: We examined the residential concentrations of VOCs, emitted from building materials, paints, furniture, and other lifestyle practices and the risks of multiple allergic diseases as well as the IgE-sensitization in pre-school age children in Sweden.

Methods: In a case-control investigation (198 case children with asthma and allergy and 202 healthy controls), air samples were collected in the room where the child slept. The air samples were analyzed for the levels of eight classes of VOCs.

Results: A natural-log unit of summed propylene glycol and glycol ethers (PGEs) in bedroom air (equal to interquartile range, or 3.43 – 15.65 $\mu\text{g}/\text{m}^3$) was associated with 1.5-fold greater likelihood of being a case (95% CI, 1.1 – 2.1), 1.5-fold greater likelihood of asthma (95% CI, 1.0 – 2.3), 2.8-fold greater likelihood of rhinitis (95% CI, 1.6 – 4.7), and 1.6-fold greater likelihood of eczema (95% CI, 1.1 – 2.3), accounting for gender, secondhand smoke, allergies in both parents, wet cleaning with chemical agents, construction period of the building, limonene, cat and dog allergens, butyl benzyl phthalate (BBzP)

cont. Swedish Study, 2010

An emerging body of evidence suggests that environmental conditions during early life are important. In particular, early-life exposure to chemicals commonly found at home, and their possible roles in allergic airway disease, allergic asthma, and rhinitis are speculated [3,4,5,6].

Global secular trend in asthma and the allergy disease prevalence draw a parallel with vast shift in diet, lifestyle, and consumer product uses within the western societies since the World War II [7]. Enormous quantity and array of chemical compounds have been introduced in the societies which adopted western lifestyles [8]. Consumer products, such as computer, TV, and synthetic building materials, including artificial carpets, composite wood, polyvinyl chloride (PVC) flooring, foam cushions, and PVC pipes emit an array of volatile organic compounds (VOCs), semi-volatile organic compounds (sVOCs) and non-organic compounds [8]. VOCs, which predominantly exist in the vapor phase in the atmosphere, and sVOCs, which exist in both vapor and condensed phase, redistribute to indoor surfaces and



- Fire retardants
- Laundry sheets
- Plastic bedding
- Plastic toys
- New furniture
- voc
- New paint voc
- New carpet voc
- Odor covering fragrances

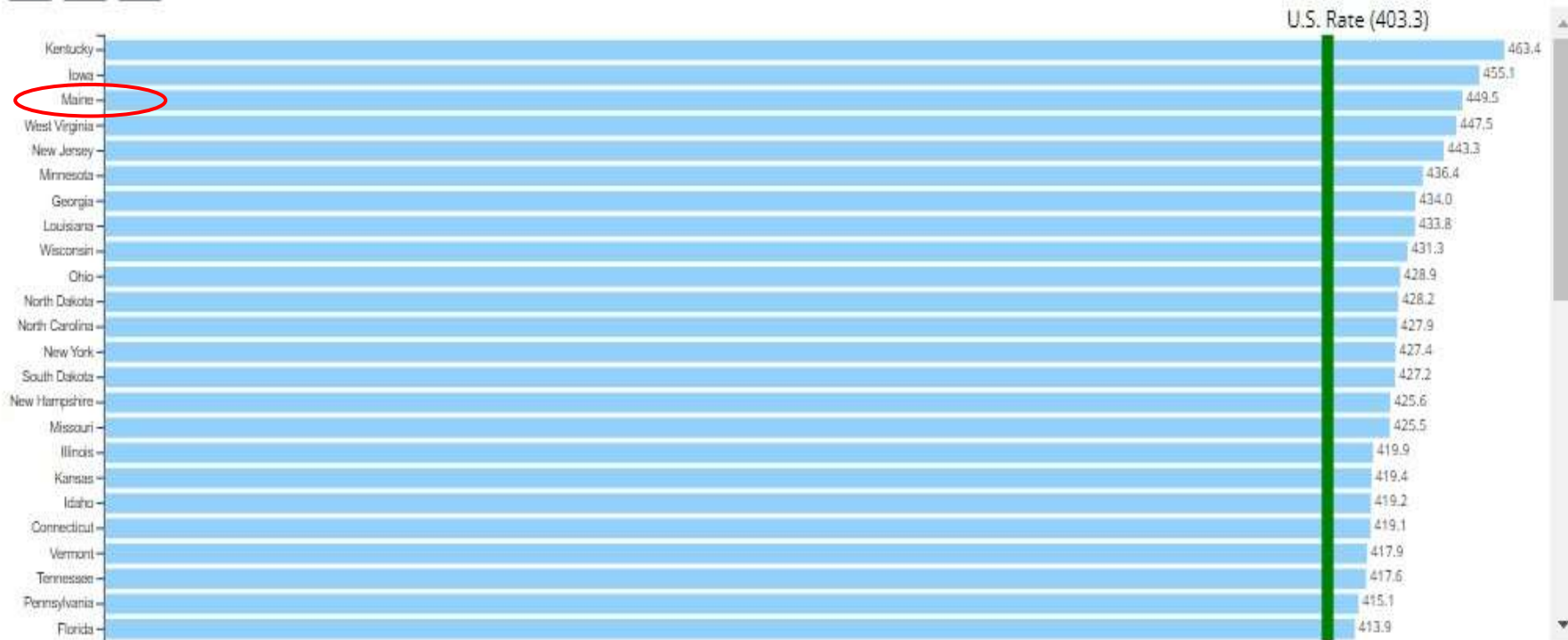
may persist from several months to years [8]. Both adults and children spend an estimated >90% of daily hours in indoor setting [9]. In addition, energy conservation measures for buildings have led to reduced air exchange rates and promotion of indoor moisture buildup [7,9].

In infants and children, the role of indoor VOCs as allergens, adjuvants, or mere correlates in development of allergic asthma, and rhinitis remains an open question [6]. Two recent reviews of the literature identified indoor residential chemicals, emitted from particle board, plastic materials, recent painting, home cleaning agents, air freshener, pesticide, and insecticide, consistently increase the risks of multiple allergic symptoms and asthma-like symptoms [10,11]. However, these studies were limited by small sample sizes, measurement of the complex VOC mixture in terms of the total concentration, and presumption of personal exposure based on the identification of emission related-material or the human activities [11]. Nevertheless, the authors concluded that these epidemiologic studies overall point to a new class of little recognized residential chemical risk factors [11].

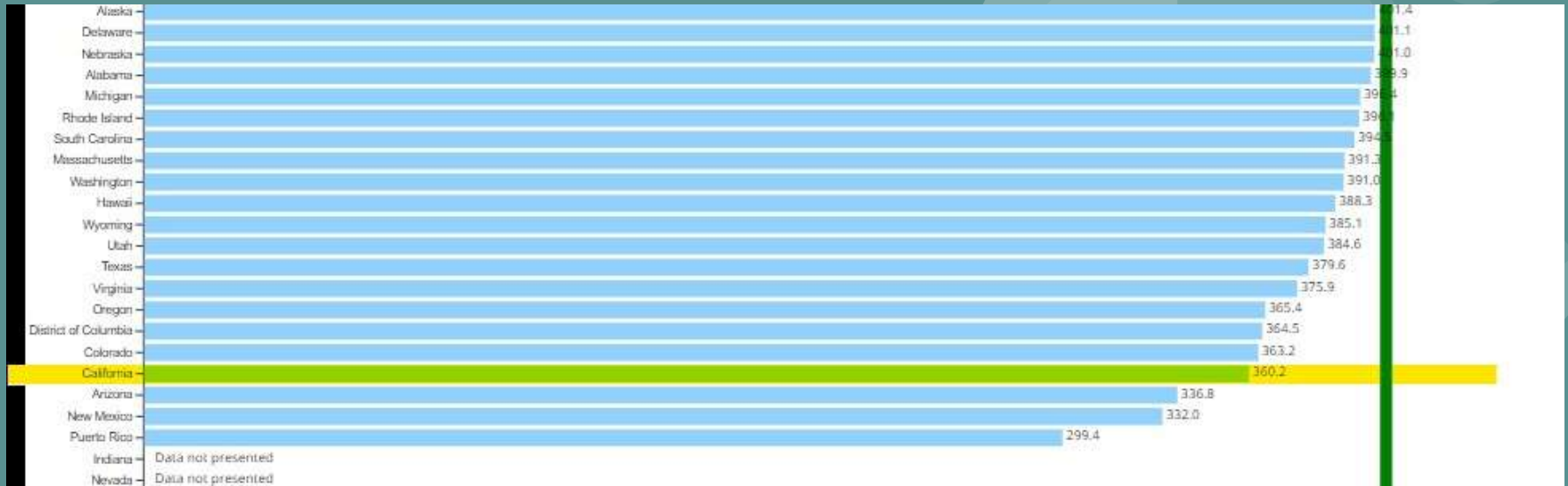
Cancer Rates

Rate of New Cancers in the United States, 2020

All Types of Cancer, All Ages, All Races and Ethnicities, Male and Female
Rate per 100,000 people

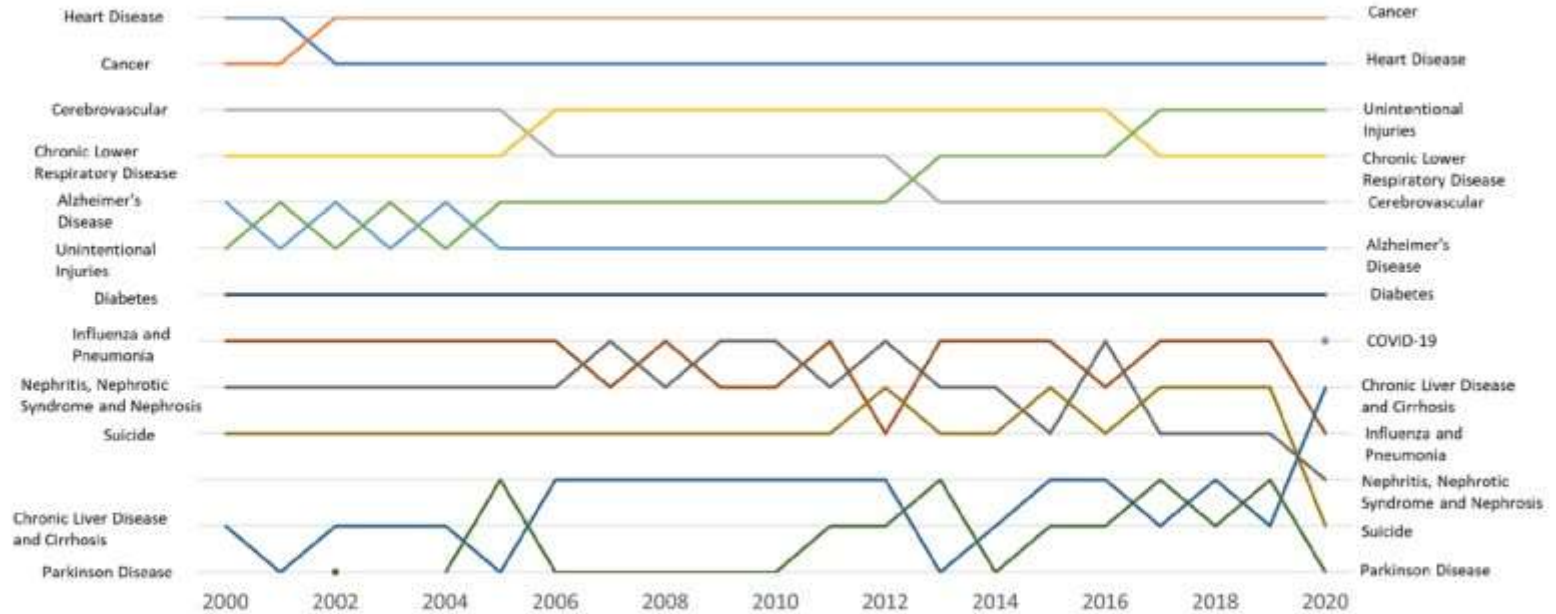


Maybe California is on to something?



Cancer has become Maine's Leading Cause of Death

Maine Leading Causes of Death Rank, 2000-2020



Causes of death listed are those that ranked in the leading causes of death in 2020.

Lung and Bronchus Leading the way

Scientifically rigorous peer-reviewed epidemiologic studies (described in the section “The Science Behind the Risk Estimates”) performed since the 1960s provided a solid scientific foundation for the U.S. Environmental Protection Agency’s (EPA) 2003 risk assessment,⁴ which estimates that out of a total of 157,400 lung cancer deaths nationally in 1995, 21,100 (13.4%) were radon related. **More recent direct estimates of the risk posed by radon, obtained from residential case-control studies performed globally, closely align with the 2003 EPA risk estimates.** When compared to cancer mortality from all causes, radon-related lung cancer, if it were treated as a distinct disease category, would rank among the top 10 causes of cancer mortality and is considered a leading environmental cause of cancer mortality in the United States.¹

Cancer Mortality 2020	
Cancer Type	Estimated U.S. Deaths in 2020 ^{4,5}
1. Lung and Bronchus	135,720
2. Colon and Rectum	53,200
3. Pancreas	47,050
4. Breast	42,690
5. Prostate	33,330
6. Liver and Intrahepatic Bile Duct	30,160
7. Leukemia	23,100
Radon-Induced Lung Cancer	21,100*
8. Lymphoma (Combined Hodgkin & Non-Hodgkin)	20,910
9. Brain & Other Nervous System	18,020
10. Urinary Bladder	17,980
11. Esophagus	16,170
12. Kidney and Renal Pelvis	14,830
13. Ovary	13,940



* The 21,100 radon-induced lung cancer deaths, based on risk estimates using U.S. demographic information from 1995, are included in the estimate of lung and bronchus cancer deaths.

Radon levels in homes can be dramatically higher than typical:

Watras Incident

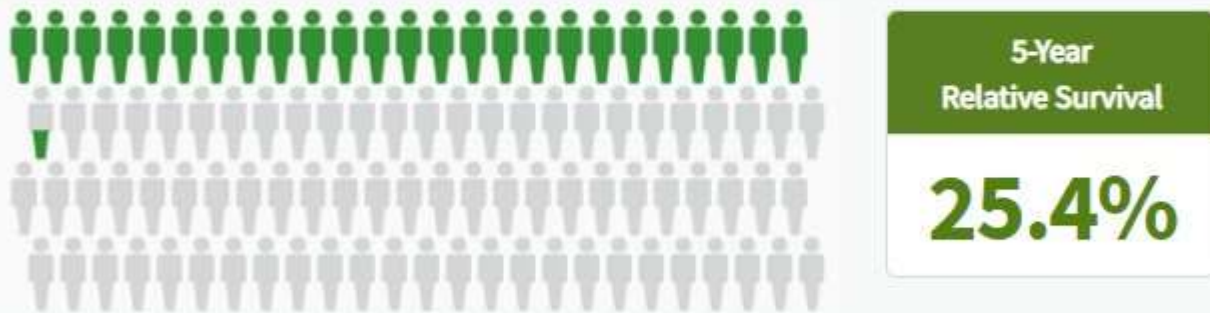
- In the **Watras Incident**, an employee at a U.S. nuclear plant triggered radiation monitors, despite the fact that the plant had yet to be fueled and the employee had been sent home "clean" each evening.
- The source of contamination turned out to be **high radon levels in the worker's basement**.
- The lung cancer risk associated with living in that house was compared to the **extrapolated risk from smoking 135 packs of cigarettes daily. 2700 Cigarettes a day**
- Radon soon became a standard homeowner concern, making individual testing essential to assessment of radon risk in any particular dwelling.

Survival Rates

Of the 80% diagnosed late, ½ don't survive 1 year

How Many People Survive 5 Years Or More after Being Diagnosed with Lung and Bronchus Cancer?

Relative survival is an estimate of the percentage of patients who would be expected to survive the effects of their cancer. It excludes the risk of dying from other causes. Because survival statistics are based on large groups of people, they cannot be used to predict exactly what will happen to an individual patient. No two patients are entirely alike, and treatment and responses to treatment can vary greatly.



Based on data from SEER 22 (Excluding IL/MA) 2013–2019. Gray figures represent those who have died from lung and bronchus cancer. Green figures represent those who have survived 5 years or more.

Lung Cancer Facts

The American Cancer Society's estimates for lung cancer in the US for 2023 are:

- About 238,340 new cases of lung cancer (117,550 in men and 120,790 in women)
- About 127,070 deaths from lung cancer (67,160 in men and 59,910 in women)

Lung cancer mainly occurs in older people. Most people diagnosed with lung cancer are 65 or older; a very small number of people diagnosed are younger than 45. The average age of people when diagnosed is about 70.

Radon is one of the most comprehensively investigated human carcinogens. Laboratory studies have documented that an alpha particle (e.g., from radon decay products polonium-218 and polonium-214) can cause both single- and double-strand DNA breaks and can produce indirect genotoxic and nongenotoxic effects on both traversed and neighboring non-traversed cells. Experimental animal exposures to radon clearly demonstrate that radon decay products cause lung cancer.⁷

Radon and Smoking—Combined Effects

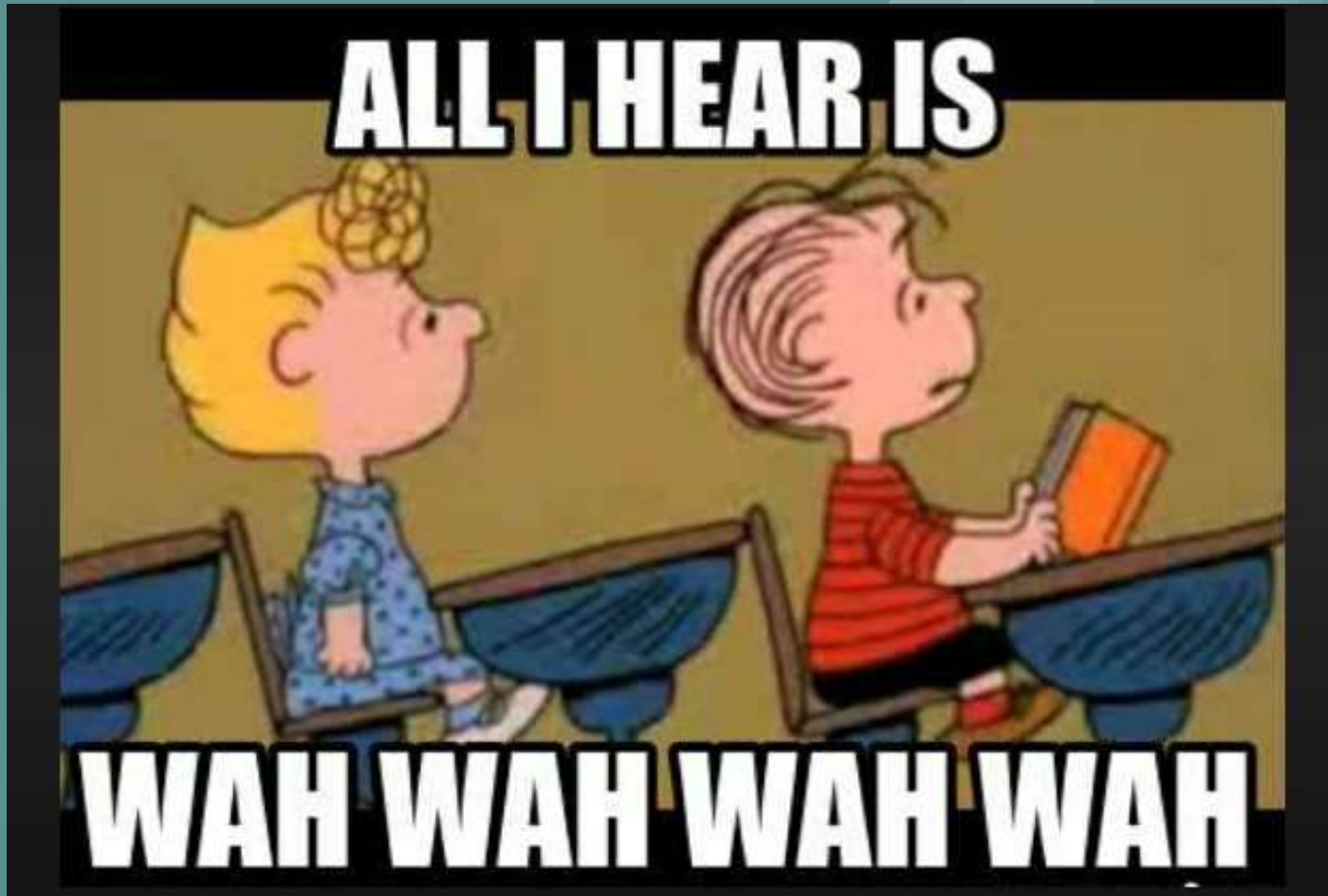
The combined health effects of radon and tobacco exposure are synergistic, so reducing either of the exposures substantially reduces lung cancer risk. The median age of lung cancer diagnosis is 70 years, with approximately 91 percent of cases occurring in people older than age 55.⁶ Studies of radon-exposed underground miners have demonstrated that the minimum latency period for lung cancer is 5 years and that radon exposure occurring 5 to 15 years prior to the development of lung cancer carries the greatest risk per unit exposure.⁷ Because approximately 37 percent of U.S. adults have smoked at some time in their life, reducing radon exposure in this segment of the population—even if smoking cessation occurs later in life—can reduce the risk of lung cancer considerably.⁸

Lifetime Risk of Lung Cancer Death from Radon Exposure in Homes			
Risk Is Shown per 100,000 Individuals			
RADON LEVEL (pCi/L)	NEVER SMOKERS	CURRENT SMOKERS	GENERAL POPULATION
20	3,800	26,000	11,000
10	1,800	15,000	5,600
8	1,500	12,000	4,500
4	730	6,200	2,300
2	370	3,200	1,200
1.25	230	2,000	730
0.4	73	640	230

Estimated Risks at the EPA Action Level (4pCi/L)

Never Smokers: 7/1000 | Smokers: 62/1000

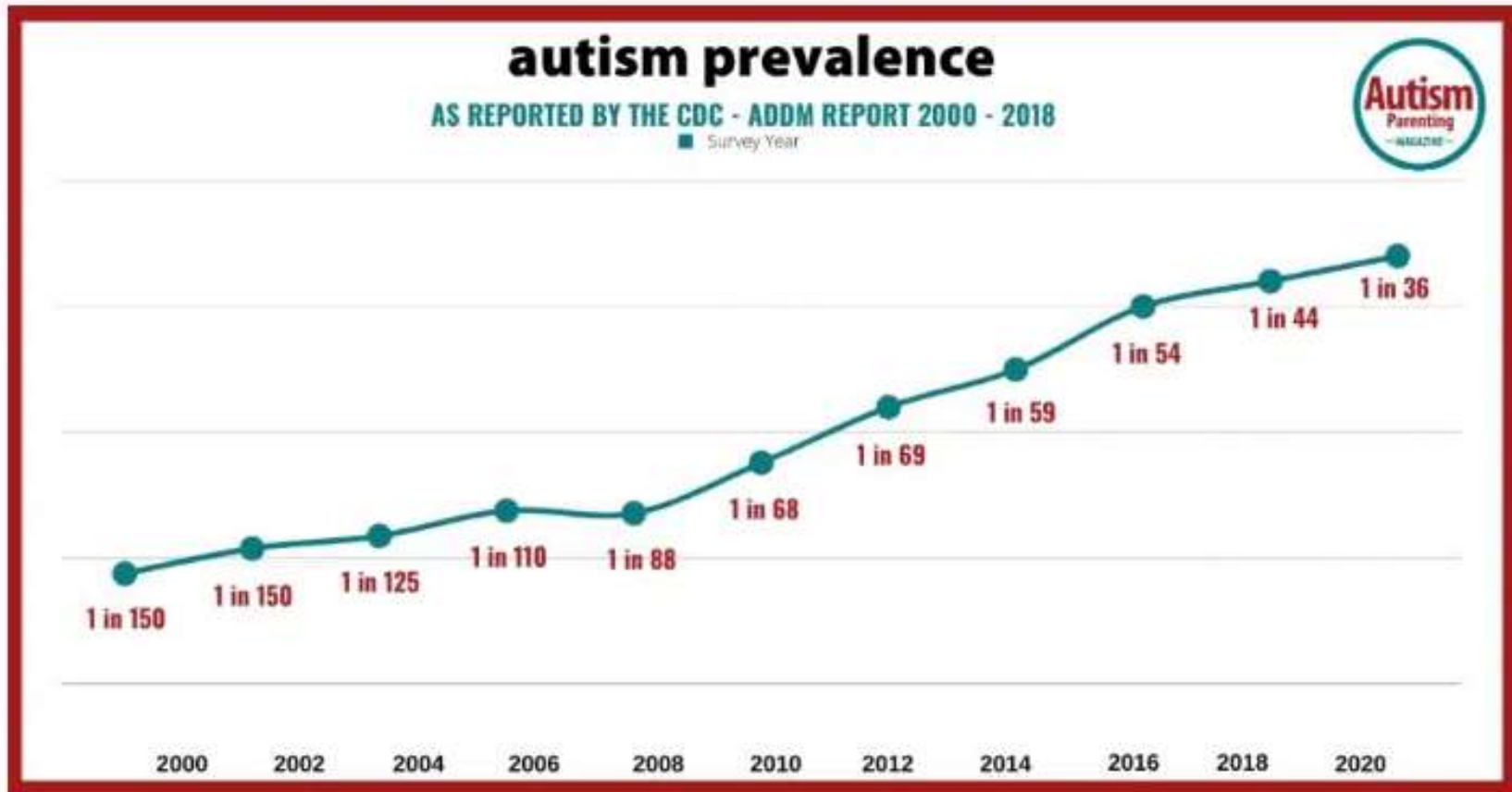
How do we get people from this...



to this....



If this was the only issue, would it be enough?



Below is a break-down of the prevalence rates per year since 2000:

Autism Statistics You Need To Know in 2023



By Yolande Loftus, BA, LLB
September 20, 2023

When your child is diagnosed with autism, it can feel very lonely. But knowing the latest autism statistics can make you feel less isolated. You will soon realize you are part of a much bigger autism community.

The latest research in 2023 from the CDC shows that one in 36 children is now diagnosed with autism. This is an increase from one in 44 children two years ago. Since the report was recently released, the data is likely to stay the same through 2024.

From 4-5 in every 10,000 in the 70s to half of all kids in 2025

Will half of US kids have autism by 2025? This prediction made by Dr. Stephanie Seneff, Research Scientist from the Massachusetts Institute of Technology (MIT), may be scoffed at by some, but the latest CDC statistics do indicate rising prevalence rates:

Do we have any insight for a link?

HEALTH

Scientists Find 'Baffling' Link between Autism and Vinyl Flooring

Swedish children who live in homes with vinyl floors are more likely to have autism, according to a new study, but what's behind the link is unclear

By Marla Cone, Environmental Health News on March 31, 2009

Autism and phthalates: Exposure in womb linked to autistic traits in boys

New study bolsters evidence that certain chemicals may alter social development—but also reinforces the protective effect of folic acid during pregnancy

by Brian Bienkowski February 20, 2020 • 4 min read



Multiple Studies showing links

[Environ Health](#). 2018; 17: 85.

Published online 2018 Dec 5. doi: [10.1186/s12940-018-0428-4](https://doi.org/10.1186/s12940-018-0428-4)

PMCID: PMC6280477

PMID: [30518373](https://pubmed.ncbi.nlm.nih.gov/30518373/)

Prenatal exposure to phthalates and autism spectrum disorder in the MARBLES study

[Hyeong-Moo Shin](#),^{✉1,2} [Rebecca J. Schmidt](#),^{1,4} [Daniel Tancredi](#),³ [Jacqueline Barkoski](#),¹ [Sally Ozonoff](#),^{4,5}
[Deborah H. Bennett](#),¹ and [Irva Hertz-Picciotto](#)^{1,4}

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Same Environment may cause same result Genetic links may really be Environment

PEDIATRICS PERSPECTIVES | DECEMBER 01 2021

Considering Toxic Chemicals in the Etiology of Autism **FREE**

Heather E. Volk, PhD ✉; Jennifer L. Ames, PhD; Aimin Chen, PhD; M. Daniele Fallin, PhD; Irva Hertz-Picciotto, PhD; Alycia Halladay, PhD; Deborah Hirtz, MD; Arthur Lavin, MD; Beate Ritz, MD, PhD; Tom Zoeller, PhD; Maureen Swanson, MPA

FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

POTENTIAL CONFLICT OF INTEREST: Dr. Ritz is a consulting expert in litigation involving exposure to heavy metals in baby food and autism. The remaining authors have no conflicts of interest relevant to disclose.

Scientists long recognized that genetic factors contribute to autism etiology, as indicated in family, twin, and genetic studies.² Yet twin studies, from which heritability estimates are primarily derived, may inflate the role of genetics as both gene-only and genetic-x-shared-environment influences are summarized as genetic. This pervasive problem (of identifying genetic contributions and assuming their effects cannot result from genes acting in concert with environmental agents) also applies to a recent analysis of twin and family studies purporting to demonstrate that the environmental component is an unlikely explanation of both ASD risk and the increase in ASD over time.³ The environment may act in concert with genetic risk pathways or affect the intrauterine environment directly. In addition, the environment may induce similar epigenetic signatures in twins during gestation.⁴ Thus, the shared environment is itself complex and not easily disentangled from shared genetics.

Evidence for Environmental Influence on ASD Risk

A large body of evidence, including decades of research on lead and child IQ, indicate a link between toxic environmental exposures and poorer neurodevelopmental outcomes.⁵ In animal models and human studies, several toxic chemicals have been implicated in ASD and ASD-related traits and biological markers.² Specifically, scientists have found that air pollution exposures during pregnancy and early infancy, at levels typically found in large cities, are associated with autism.⁶⁻⁸ Several studies suggest that gestational exposures to some neurotoxic and endocrine-disrupting pesticides, including organochlorines, organophosphates, and pyrethroids, increase the chances of an autism diagnosis or autism-related behaviors in children.⁹ Evidence is emerging that other toxic chemicals are associated with autism or autism-related behaviors, notably phthalates, ubiquitous chemicals that cause a decrease in testosterone.¹⁰

These are our children and Grandchildren
1 in 36 soon to be 1 in 2?



Covid 19... Need I say more?

Air also transports
disease
bacteria
viruses

- TB
- SARS
- Mumps
- Diphtheria
- Measles
- Smallpox
- Influenza
- Anthrax



Humans come equipped with a Ventilator

- All of us breath constantly
- over 20,000 breaths each day
- 35 pounds of air.



Normal metabolism creates CO₂
and other
pollutants we need to get rid of

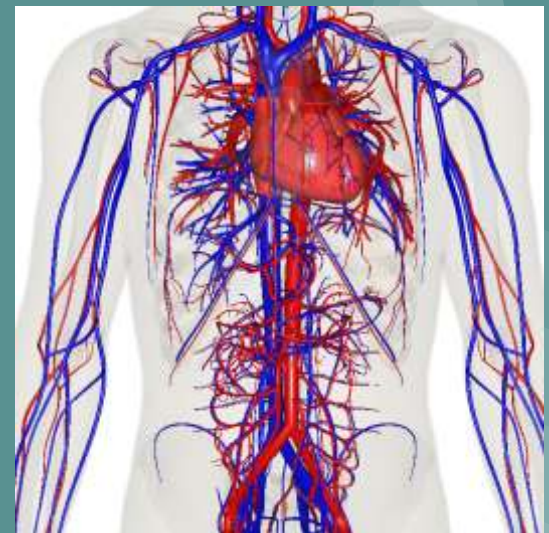
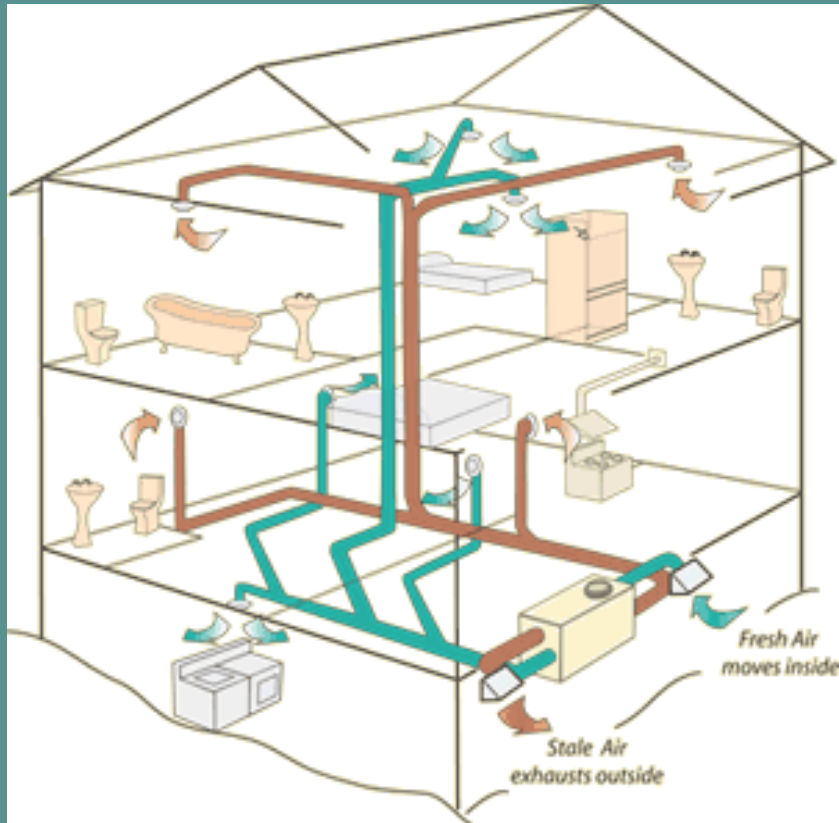
Buildings are for People

Providing a Healthy indoor environment needs to be #1 priority

What is needed to achieve this goal

- Reliable supply of fresh air
- Well distributed (each habitable room is part of the system)
 1. Vents are positioned to move air throughout the whole room
*(especially where people are and where the breathing zone is)
 2. Pathways exist for air to freely flow
 3. System is active
 4. Maintenance is a must
- System is capable of distribution even when there is no demand for heating or cooling (coupling ventilation with H/AC can be problematic to ventilation)
- Operators need to understand the system and how and why to operate it.
- System should not be reduced or shut down for other less important reasons
 1. Cost (illness & health care is significantly more costly than energy)
 2. Comfort (illness & health care is significantly more costly than energy)
 3. Humidity (climate and use may dictate additional equipment to manage moisture. Stopping ventilation to solve moisture is a terrible idea)
 4. Etc.

A system needs to consider the whole area



Air Monitors



Grandma
&
Grandpa



AVA

Rylee



William Parkin



Karen Johnson



Kymberlee Grace Johnson



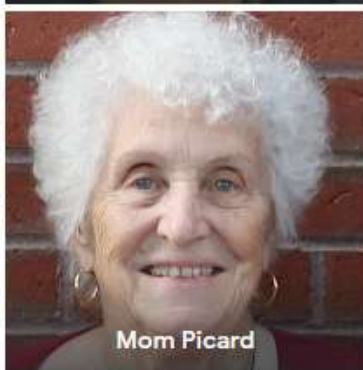
Zakary Johnson



Kurt Jr



Lukas Johnson



Mom Picard



Paula Ryder



Casey Ryder



Cody Ryder



Carly Ryder



Gregory Johnson



Howie Johnson



Brooke Johnson



Tyler Johnson



Liz Fitch



Erik Johnson



Cheryl Aurelio



Judy Johnson



Jackie Johnson

Questions?

