



Simple Steps to Eating Healthy in a Toxic World

Sarah Evans, PhD MPH
Strawberry Fields Farm
October 15, 2016



**Mount
Sinai**

*Children's
Environmental
Health Center*

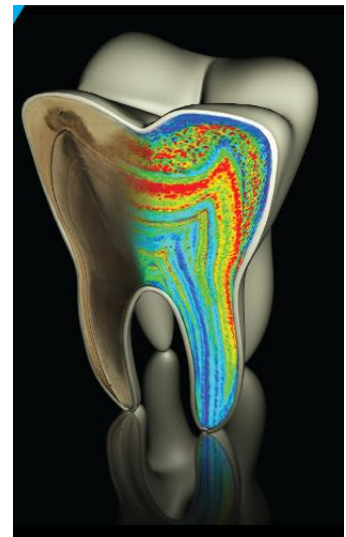


Mount Sinai Children's Environmental Health Center

- ▶ **Research**
- ▶ **Education**
 - Caregivers
 - Health Care Providers and students
 - Patients
 - Policy makers
- ▶ **Patient Care**
 - Pediatric Environmental Health Specialty Unit (PEHSU)

Research at the Mount Sinai CEHC

- ▶ Epigenetics and Prenatal Programming
- ▶ Neurodevelopment
- ▶ Endocrine Disruptor Research Program
- ▶ Air Pollution, Stress, and Respiratory Health
- ▶ The Senator Frank R. Lautenberg Environmental Health Sciences Laboratory
- ▶ The Mount Sinai Pregnancy Biobank
- ▶ Environmental Pediatrics Training Program



Your oatmeal may be killing you

By Kathianne Boniello

April 30, 2016 | 9:50pm



Arsenic, rice and your baby's diet

By Sandee LaMotte, CNN

Updated 3:46 PM ET, Tue April 26, 2016



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Photos: Foods in which arsenic may be present

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Home / Guy Food / What to Eat

October 08, 2016

THE 9 SCARIEST FOOD ADDITIVES YOU'RE EATING RIGHT NOW

Some of the so-called healthy snack foods and packaged goods you're tossing into your grocery cart each week may be filled with "extras" that can, in the long term, put your health at risk.



BY CAT PERRY

Follow



Chemical in BPA-free plastic may not be any safer



Plastic bottles / ISTOCKPHOTO

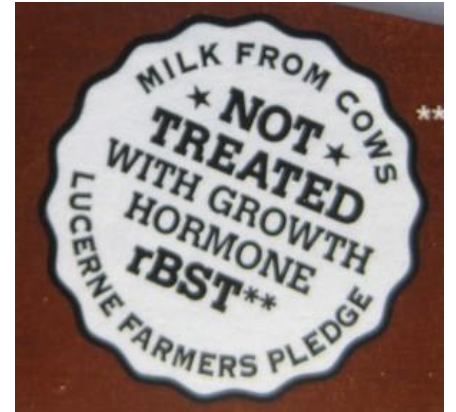
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By DENNIS THOMPSON / HEALTHDAY / April 13, 2016, 5:32 PM

Fast food may come with a side of phthalate chemicals



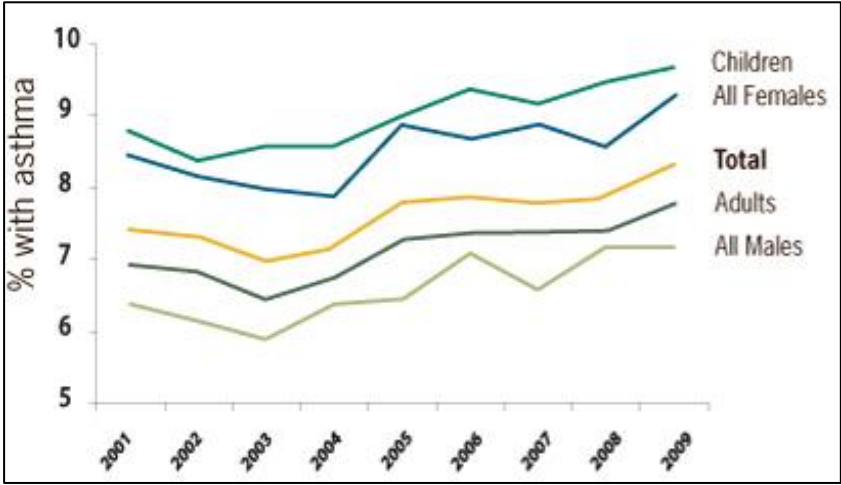
People who ate more fast food had higher average levels of phthalate chemicals in their systems, a new study found. / ISTOCKPHOTO



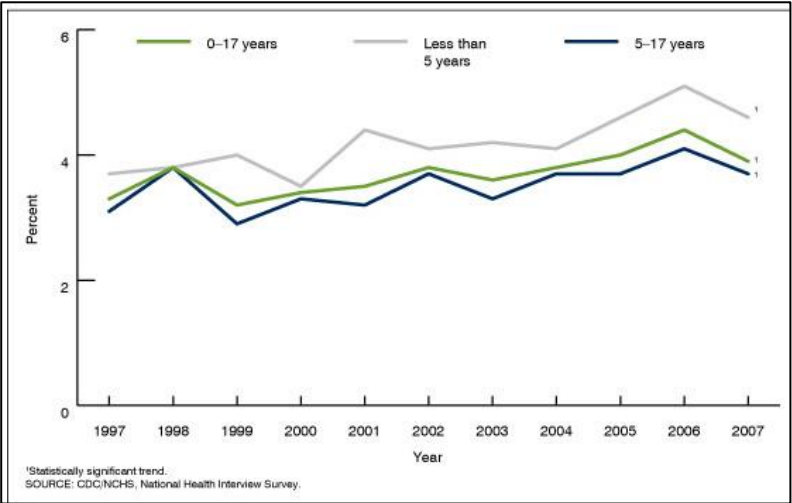
What's for Dinner???



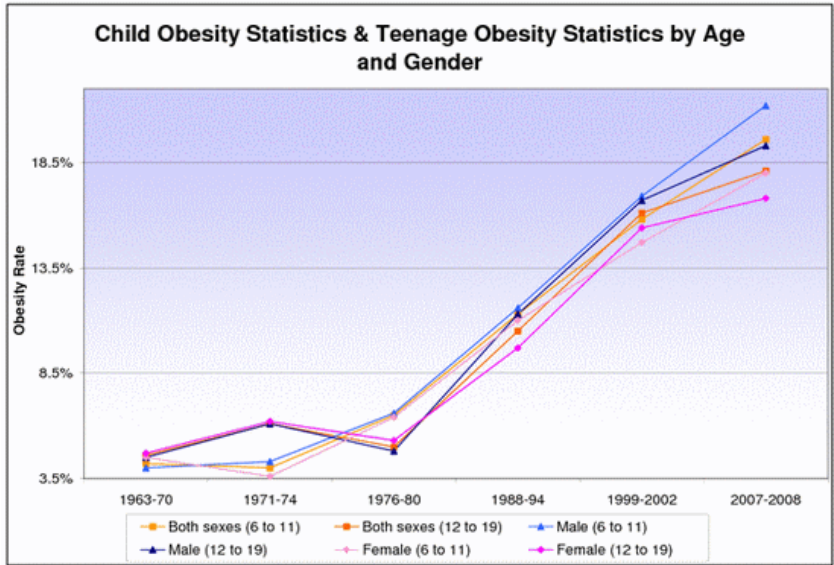
The New Pediatric Morbidity



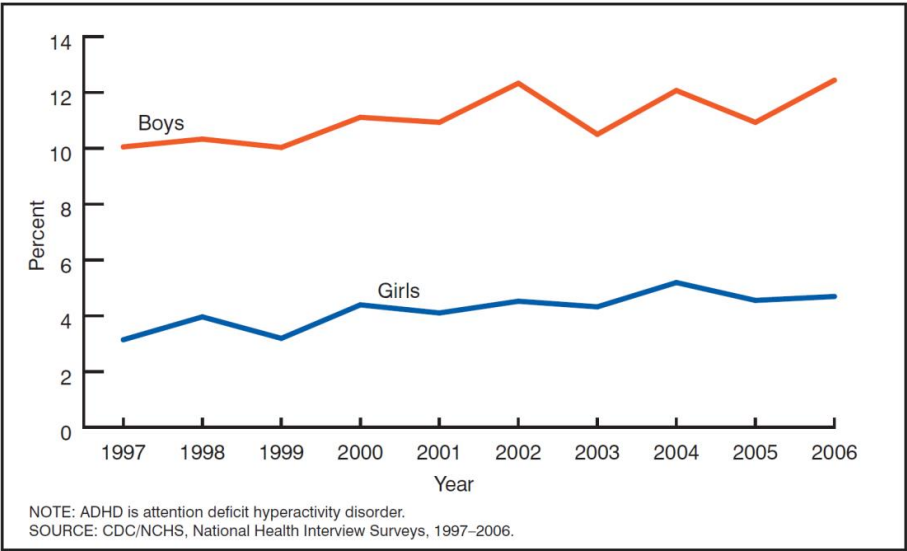
Asthma



Food Allergy



Obesity



ADHD

Autism

Identified Prevalence of Autism Spectrum Disorder

ADDM Network 2000 – 2012

Combing Data from All Sites

Surveillance Year	Birth Year	Number of ADDM Sites Reporting	Prevalence per 1,000 Children (Range)	This is about 1 in X children...
2000	1992	6	6.7 (4.5 – 9.9)	1 in 150
2002	1994	14	6.6 (3.3 – 10.6)	1 in 150
2004	1996	8	8.0 (4.6 – 9.8)	1 in 125
2006	1998	11	9.0 (4.2 – 12.1)	1 in 110
2008	2000	14	11.3 (4.8 – 21.2)	1 in 88
2010	2002	11	14.7 (5.7 – 21.9)	1 in 68
2012	2004	11	14.6 (8.2 – 24.6)	1 in 68

Are there environmental risk factors for disease?

ENVIRONMENTAL DISEASE IS PREVENTABLE



Chemical Safety in the U.S.

- ▶ 84,000 new chemicals since WWII
- ▶ 3000 high production volume
- ▶ <20% have been tested for toxicity to children
- ▶ Toxic Substances Control Act 1976
 - Exempted 62,000 chemicals
- ▶ Frank R. Lautenberg Chemical Safety for the 21st Century, June 2016





Food Regulations



>10,000 CHEMICALS
IN FOOD

1,480	direct food additives approved by FDA
140	color additives approved by FDA
2,700	natural or artificial flavors determined to be GRAS
900	GRAS and listed, affirmed, or reviewed by FDA
1,000	GRAS as determined by manufacturer and not reviewed by FDA
500	pesticides
3,800	indirect additives/food contact substances

Data from Pew Food Additives Project.

Our Chemical Body Burden

- ▶ 200+ chemicals detected in:
 - Urine
 - Blood
 - Cord Blood
 - Breast milk
- ▶ Highest exposures in children
- ▶ Chronic, low-dose + cumulative



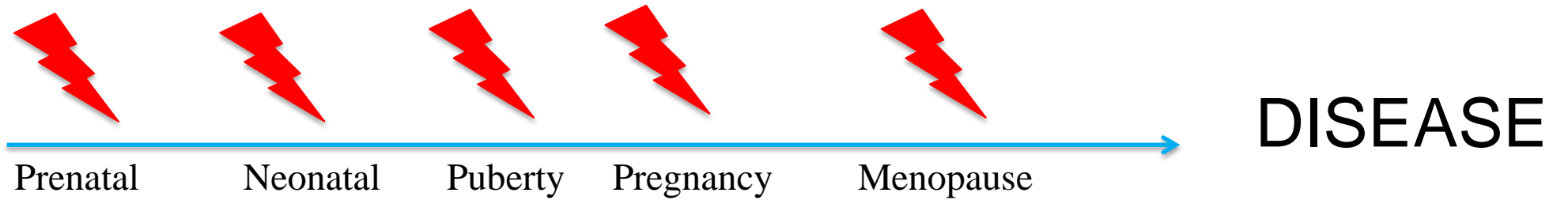
Children are Uniquely Vulnerable

- ▶ Close to the ground
- ▶ Hand-to-mouth behavior
- ▶ Greater exposure by weight
- ▶ Lack of variety in diet
- ▶ Immature metabolism
- ▶ More years of future life
- ▶ Continuously developing systems:
 - Reproductive system
 - Nervous system



Windows of Susceptibility

Not just *WHAT*, but *WHEN*



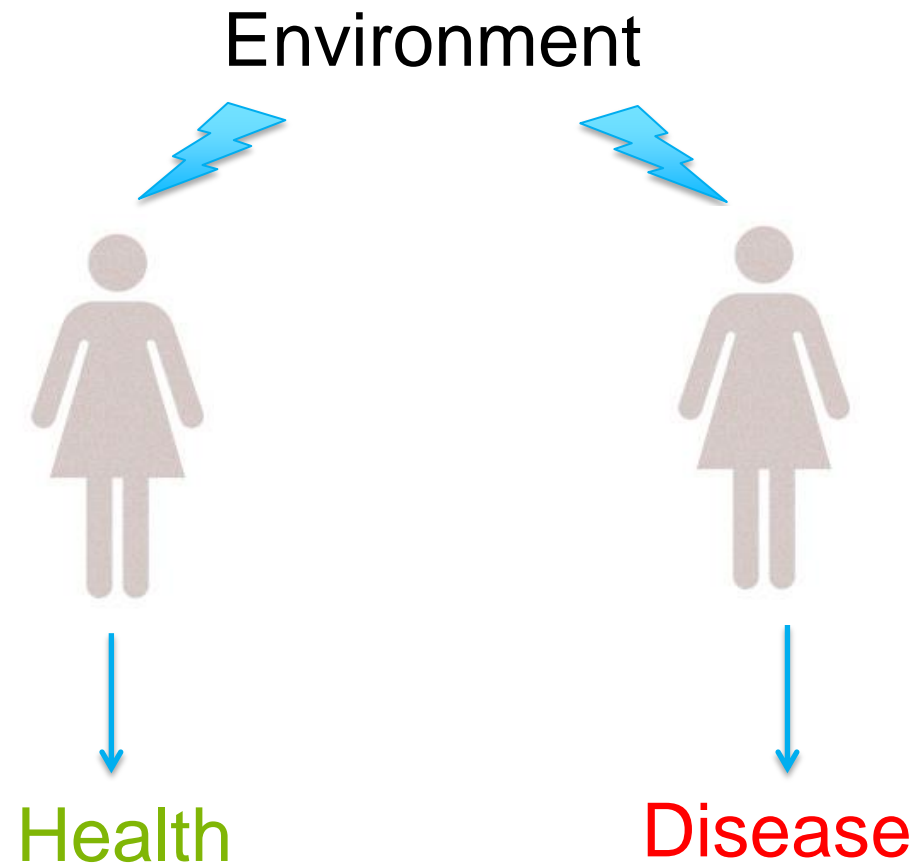
During these different time periods, the developing organ systems are most sensitive to certain environmental toxins.

Individual Susceptibility

“Genetics loads the gun and environment pulls the trigger.”

Francis Collins, NIH Director

- ▶ Studies that estimate risk are conducted at a population level
- ▶ Not every person who is exposed will develop disease
- ▶ Genes and environment interact



Practice the Precautionary Principle

- ▶ Avoid exposure when:
 - Risk of harm is suspected
 - Existing scientific evidence cannot prove cause and effect

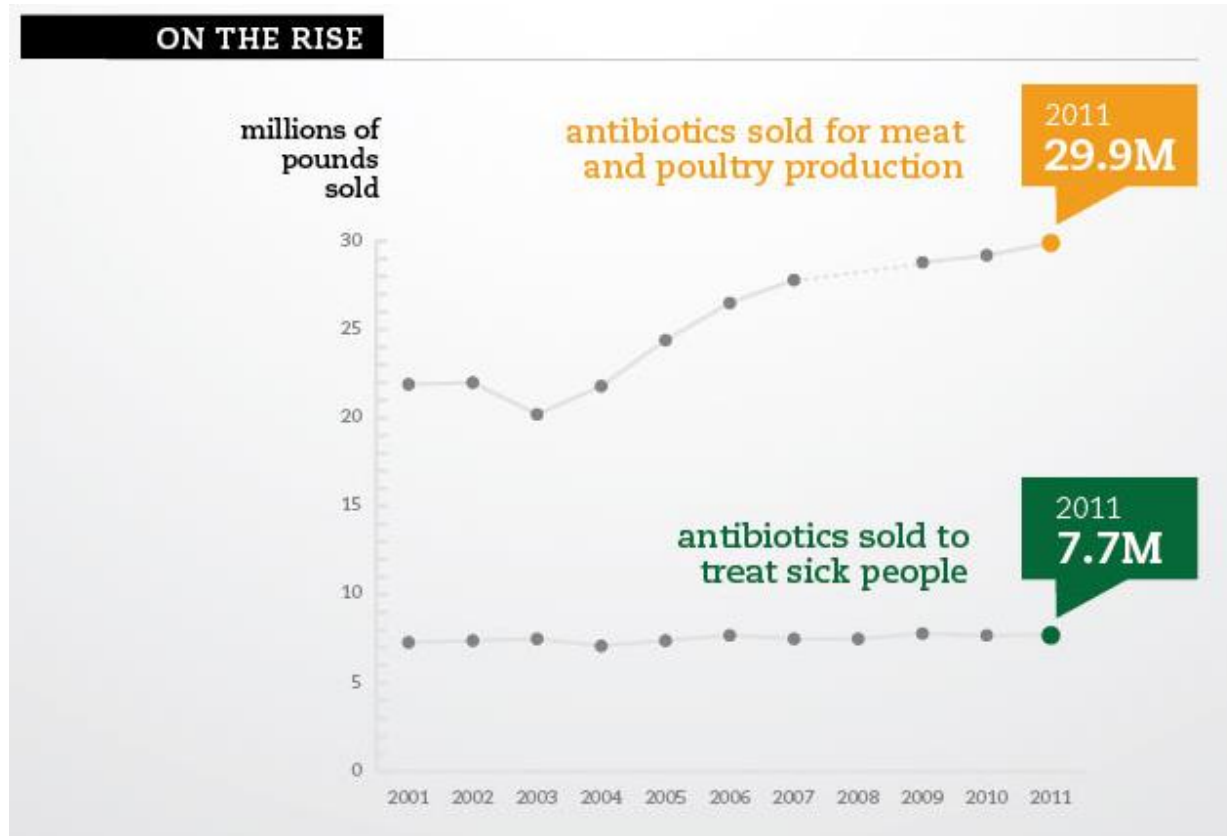
“Better Safe Than Sorry”

Organic Foods Demystified

- ▶ Applies to raw, fresh, and processed products
- ▶ USDA Definitions
 - 100% Organic
 - Organic = 95%
 - Made with Organic Ingredients = 70%
- ▶ USDA Standards
 - No pesticides, irradiation, or fertilizers
 - Not made with synthetic ingredients or bioengineering
 - No Growth Hormones or antibiotics (Livestock)
 - Inspections – annual and random



Agricultural antibiotics contribute to antibiotic resistance



Pew Campaign on Human Health and Industrial Farming 2013

