Your Environment

- Air
- Water
- Soil

Things in the environment that can affect your health:

- Chemicals - in water and soil
- Plants - allergens
- Air pollution
- Metals - lead and mercury
- Sun exposure

Indoor Air Quality

- dust & pet hair $\rightarrow$ allergies and asthma
- 2nd hand tobacco smoke $\rightarrow$ emphysema
- fine particles (asbestos, silica, graphite, coal) $\rightarrow$ lung disease
- carbon monoxide $\rightarrow$ death

Outdoor Air Quality

- Ozone
- Carbon monoxide

Seasonal and Non-seasonal Allergens and Asthma Irritants

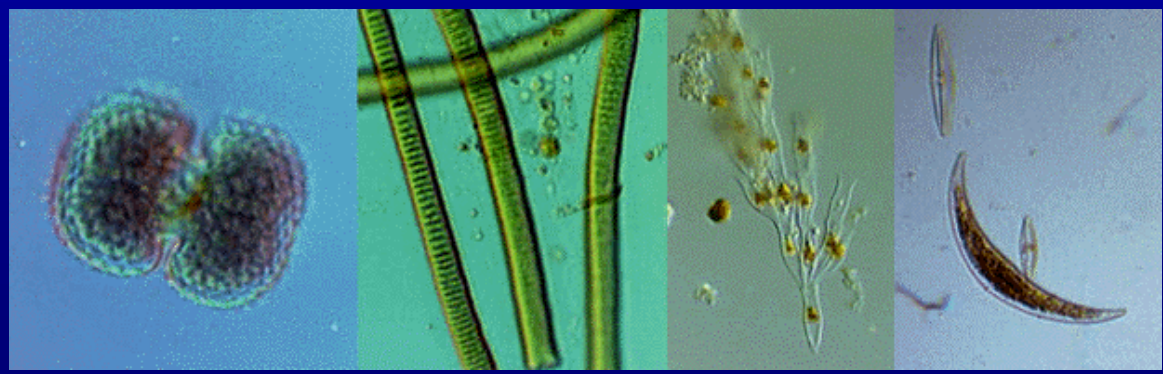
- cigarette smoke
- cockroaches
- dustmites
- house dust
- mold
- pets
- pollen

Factors that Affect River and Stream Water Quality

- Runoff from local farms - increases nitrate and phosphate levels
- Sewage runoff from septic sytems, farms and waste treatment plants
- Acid rain

Water-borne Pathogenic Microorganisms

- fecal coliform
- cryptosporidium
- vibrio cholerae
- salmonella
- giardia
- phytoplankton



207

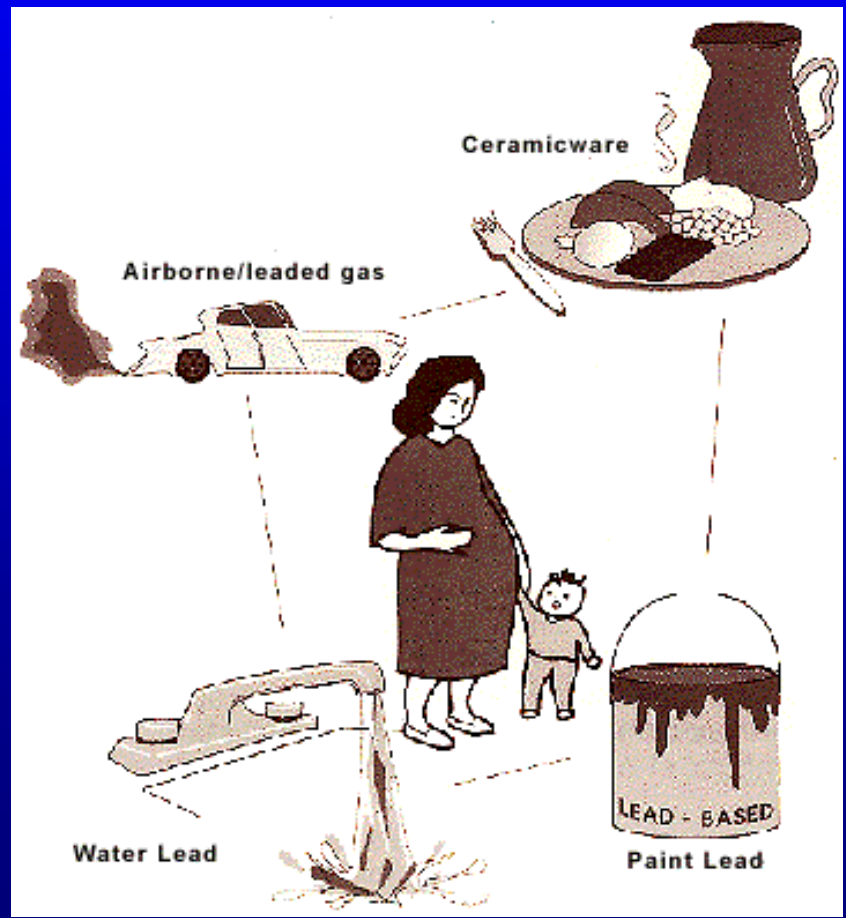
Pb

LEAD

82

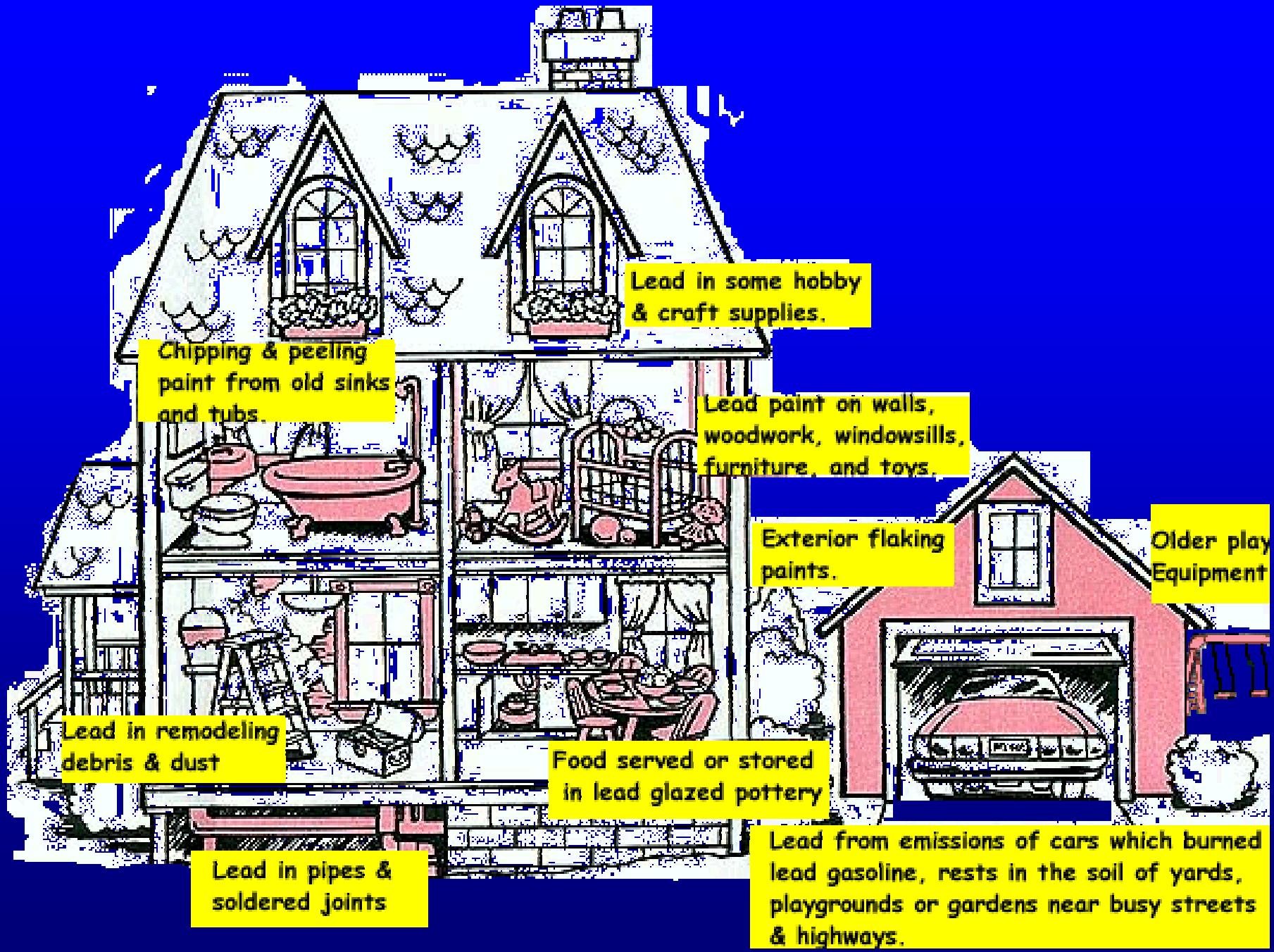
Lead

- paint
- leaded gasoline
- ceramic dishes & mugs
- lead pipes and solder



Children & Lead

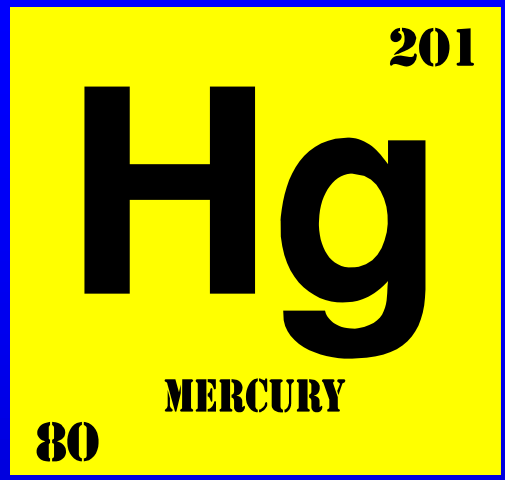
- lead paint - in homes prior to mid-1970's
- lead in jewelry
- lead dust from renovation of homes, buildings and bridges


Lead in some hobby & craft supplies.
Chipping & peeling paint from old sinks and tubs.
Lead paint on walls, woodwork, windowsills, furniture, and toys.
Exterior flaking paints.
Older play Equipment
Lead in remodeling debris & dust
Food served or stored in lead glazed pottery
Lead in pipes & soldered joints
Lead from emissions of cars which burned lead gasoline, rests in the soil of yards, playgrounds or gardens near busy streets & highways.

Symptoms of Lead Poisoning

- headaches
- muscle and joint weakness or pain
- excessive tiredness or lethargy
- behavioral problems or irritability
- difficulty concentrating
- loss of appetite
- metallic taste in the mouth
- abdominal pain, nausea or vomiting
- constipation

Mercury



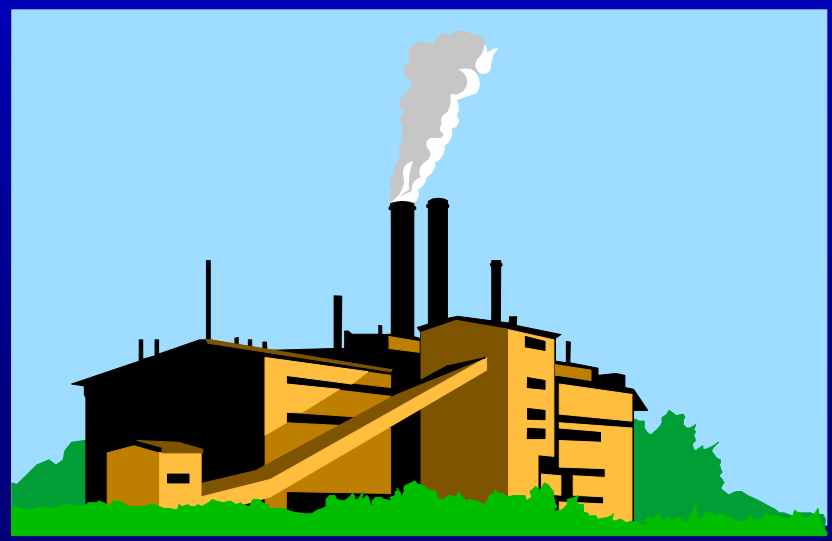
- Heavy metal
- Found in thermometers and batteries
- Contaminates water, soil, air
- Impairs the neurological system

Environmental Risks of Farming

- Pesticide exposure
- Fertilizer runoff
- Animal waste runoff

Environmental Risks from Industry

- Solvent exposure
- Toxic waste
- Air pollution
- Acid rain



Toxic Chemicals in Our Environment

- Solvents
- PCBs
- Dioxin

Dioxin

A chemical byproduct of several industrial processes:

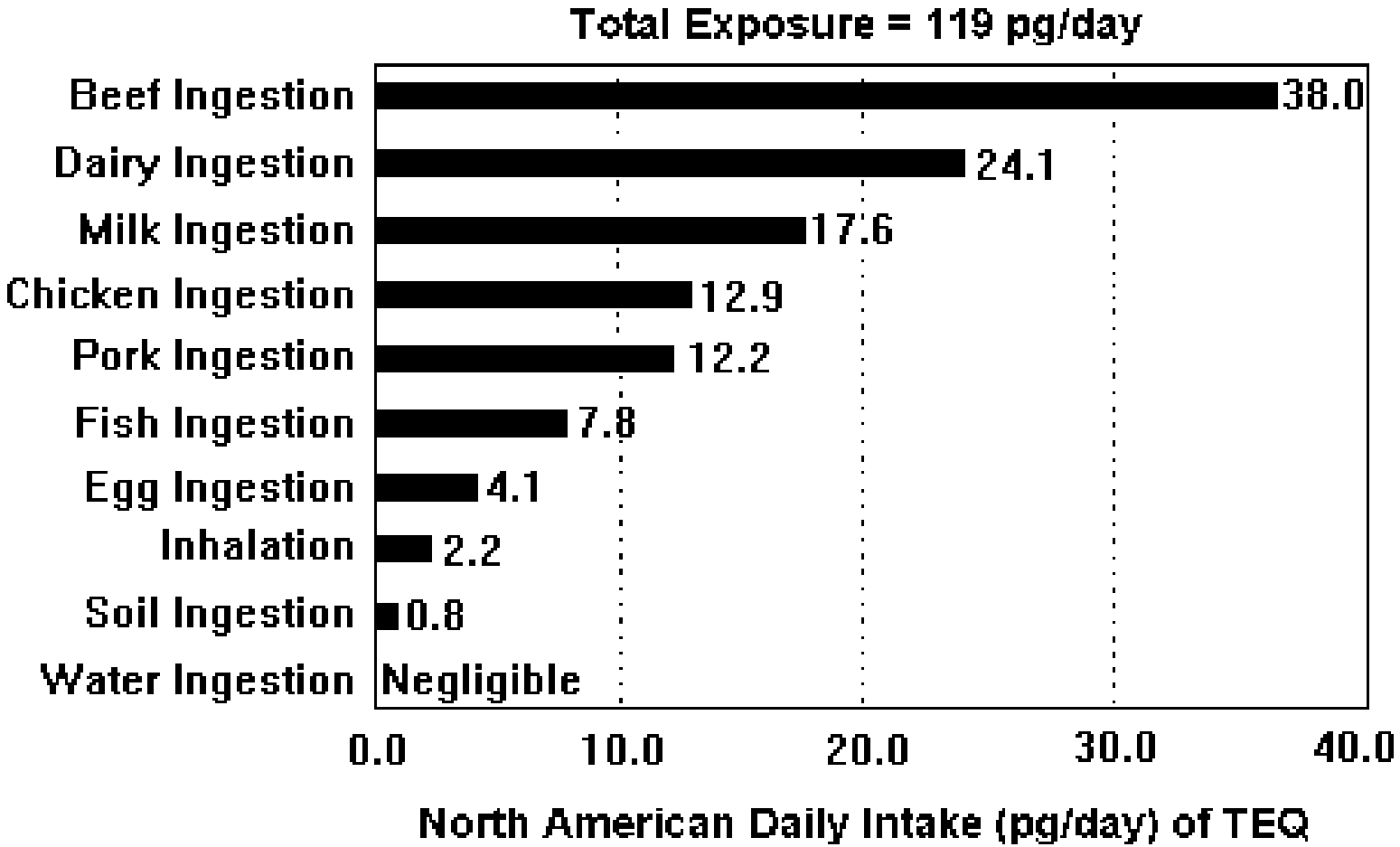
- chemical manufacturing
- garbage incineration
- and combustion of leaded gas
- paper mills

Dioxin is extremely toxic, and has been linked to:

- human reproductive problems and birth defects
- impaired child development and behavioral effects
- diabetes, and thyroid disorders
- immunosupression

Dioxin Exposure

This is where you get your dioxin from:



Is this a good case for vegetarianism or what?

(A TEQ is a dioxin Toxic EQuivalent)

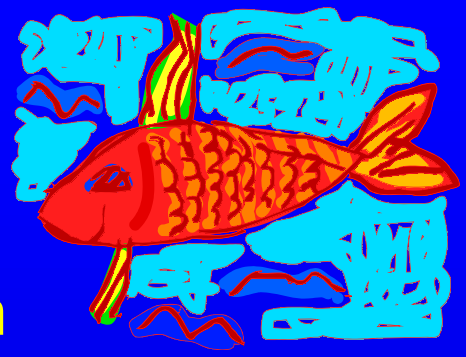
PCBs - polychloronated biphenyl

- an “environmental estrogen” - a colorless oily compound
- used as an electrical insulator since the 1930s
- used in electrical transformers, capacitors, heat transfer systems, and hydraulic systems
- also may be found in welding equipment, X-ray machines, refrigerators and microwave ovens
- chemically stable and resistant to heat and burning

PCBs and Human Health

- PCBs remain in the environment for a long time - they do not break down
- Elimination of PCBs from the body is very slow - levels in body tissues increase over time
- PCBs build up in the food chain
- PCBs cause cancer in test animals
- 1968 exposure of 1200 Japanese to PCB-contaminated oil suffered stomach pain and skin problems (Yusho disease)
- Children exposed to PCBs before birth have a lower IQ and behavior problems
- PCBs have been banned from production in the USA

PCBs and Fish Consumption



- Women of childbearing age should not eat fish listed on the fish advisory.
- Properly cleaning, skinning, trimming and cooking the fish can minimize the intake of PCBs.
- Eat only skinless and boneless fillets with as much fat removed as possible.
- Eggs (or roe) should be discarded.
- Roasting or baking reduce levels of PCBs more than frying or microwaving. Cooking does not destroy PCBs nor does it lower their toxicity.
- Don't eat the juices or fats that cook out of the fish.

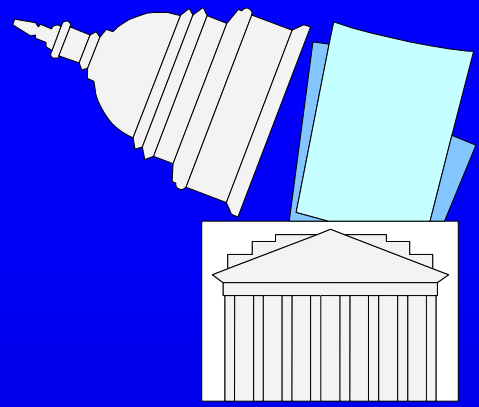
Radon

- Radon is an invisible and odorless gas
- Sources of Radon:
  - Earth and rock beneath home
  - well water
  - building materials
- Health Effects From Exposure to Radon:
  - contributes to 7,000 - 30,000 lung cancer deaths each year
  - smokers are at higher risk of developing Radon-induced lung cancer
- Radon Levels in Homes:
  - average indoor radon level is 1.3 picocuries per liter (pCi/L) in USA
  - average outdoor level is about 0.4 pCi/L
- Most homes don't have a Radon problem, but there is a simple test to find out if you do or don't have high Radon levels in your home.
- The Environmental Protection Agency (EPA) and the Surgeon General recommend that all homes below the 3rd floor be tested for Radon

Government Agencies

- Environmental Protection Agency (EPA)
- National Institute of Environmental Health Sciences (NIEHS)
- US Geological Survey (USGS)
- Food and Drug Administration (FDA)
- Agency for Toxic Substances & Disease Registry (ASTDR)
- Monroe County Department of Health

Government and Industry Regulations



- Methylene chloride, used to decaffeinate coffee, has been replaced by a water process
- Various food additives and dyes have been restricted or eliminated by the Food and Drug Administration following tests showing adverse effects
- Dichlorvos, used for flea collars and "no pest" strips, was found carcinogenic in animals in 1991, and was barred from these uses by the Environmental Protection Agency.
- Benzene, a gasoline additive, is no longer used in consumer products, because of evidence it can cause cancer.