Cadmium

Trisha Malik

Symptoms: cough, dryness, irritation, headache, dizziness

Commonly found in industrial workplaces and some plants

Treatment: fluid replacement, supplemental oxygen, and mechanical ventilation

Diagnostic test: chest x ray, measurement of oxygen saturation, and cadium blood levels

removal of cadmium paints by scraping or blasting may pose a significant hazard

Outcome: neurodevelopmental issues

Mercury

- Mercury is said to be found in Egyptian tombs. Also, it is not naturally found in the wild but it can be found in mineral cinnabar (HgS). Was commonly used in thermometers and in the processing of leather, specifically for the brims of hats. Commonly found in large fish, especially tuna
- It is the other only liquid element besides bromine at room temperature.

Effects

Exposure to mercury can lead to brain, lung, and kidney damage. Can also lead to minamata disease.

The symptoms are usually lack of coordination, impaired speech, hearing, and vision as well as disturbed sensation. It also disrupts sleep.

Mercury can enter the human body through skin contact, contaminated food and water, mainly fish. Also, the primary way it comes in contact with humans is through vapor.

Diagnostic tests to determine the amount of mercury in the body can be done through bloodwork.

Occupational exposure causes violent muscle spasms.

Long term low level exposure causes depression, memory loss, irritability and other diseases. The Mad Hatter from Alice in Wonderland was exposed through the leather brim on his hate and

This effects are inevitable, however there are few drugs to help this. One example of this drug is British Anti-Lewisite (BAL), however it doesn’t completely remove it. The long term effects are basically permanent.

Uranium

- Uranium is a highly reactive metal found in rocks.
- Uranium is used to create nuclear energy, in nuclear bombs, and in nuclear reactors.
- Chronic Fatigue, neurological problems, menstrual disorders, and kidney bone cancer are all symptoms of uranium exposure.

- Any form of uranium exposure, such as injection, inhalation, and ingestion can cause toxicity. Most people are exposed to uranium, but over exposure of all types is dangerous.

- Urine tests every 24 hours are used to diagnose uranium levels in the body. Blood tests are also used.

Treatment and Prognosis

Treatment - After suffering from a bad internal contamination, the treatment consists of intravenous transfusion with isotonic 1.4 % sodium bicarbonate to get the excretion of uranium higher. The DU levels in humans should not reach an amount that justifies the intravenous treatment more than dialysis.

Prognosis - Overexposure to Uranium is not a death sentence, but a lot of people will experience kidney problems, and cancer caused by the radiation.

Triclosan

Found in antibacterial soap and sanitizing products

Responses to Toxin: serum thyroid hormone and testosterone concentration, skin irritation. Impairs muscle contractions, heart function, affects hormone responses (endocrine disruption)

Diagnostic tests: urine tests

Toxic when exposed through skin absorption

Treatments: stop using product that contains triclosan

Prognosis: infertility, altered behavior, learning disabilities, cancer

Parabens: family of chemicals that are used as preservatives in cosmetic products to prevent the growth of bacteria and mold

Where: makeup, moisturizers, hair care products, shaving products, some foods and medications
Symptoms: allergic contact dermatitis, estrogenic activity, increased skin aging when exposed to sun
Type of Exposure: external (cosmetics), oral (food and medication)
Diagnostic Tests: urine test
Treatments: avoidance of specific allergens
Prognosis: ACD goes away

Bisphenola (BPA)

By: Zack Cassar

Where it's found and response to exposure

BPA is a common chemical found in plastic

used to harden plastics for things like compact discs, dental sealants, water bottles, the lining of canned foods and drinks

Its mostly exposed by eating foods that have been in containers and possible to pick up BPA through air, dust, and water

The FDA maintains that studies using standardized toxicity tests have shown BPA to be safe at the current low levels of human exposure.

But based on other evidence mostly from animal studies the FDA expressed concerns about the effects on the brain, behavior, and prostate glands in fetuses, infants, and young children

BPA is also being connected to hormonal disruption, increased risk of cancer, and heart problems

Diagnostic Tests, Treatments, and Prognosis

Signs you may have to much BPA exposure includes Overweight, Early Puberty, Erectile Dysfunction, Blood pressure high, ADHD, Heart disease, and Breast or Prostate cancer

Probiotic supplementation can degrade the presence of BPA

Things that can combat the effects of BPA are Black Tea, Probiotics, and Melatonin

Carbon Monoxide

By: Jesse Gerdes

-When fossil fuel is burned

-common home appliances, such as gas or oil furnaces, gas refrigerators, gas clothes dryers, gas ranges, gas water heaters or space heaters, fireplaces, charcoal grills, and wood burning stoves

-hemoglobin in the bloodstream

-When breathed in, carbon monoxide replaces the oxygen which cells need to function.

- similar to the flu, such as headaches, fatigue, nausea, dizzy spells, confusion, and irritability. As levels increase, vomiting, loss of consciousness, and eventually brain damage or death can result.

-Check your appliances to make sure they follow all standards

-

Polyvinyl Chloride (PVC)

Kyan Kuay

About

odorless and solid plastic.

Used in wide variety products including pipes, flooring.

exposed to PVC by eating food or drinking water contaminated with it.

Can also be found consumer products made with PVC or food packaged with PVC.

Exposure to dioxins can cause reproductive, developmental, and other health problems

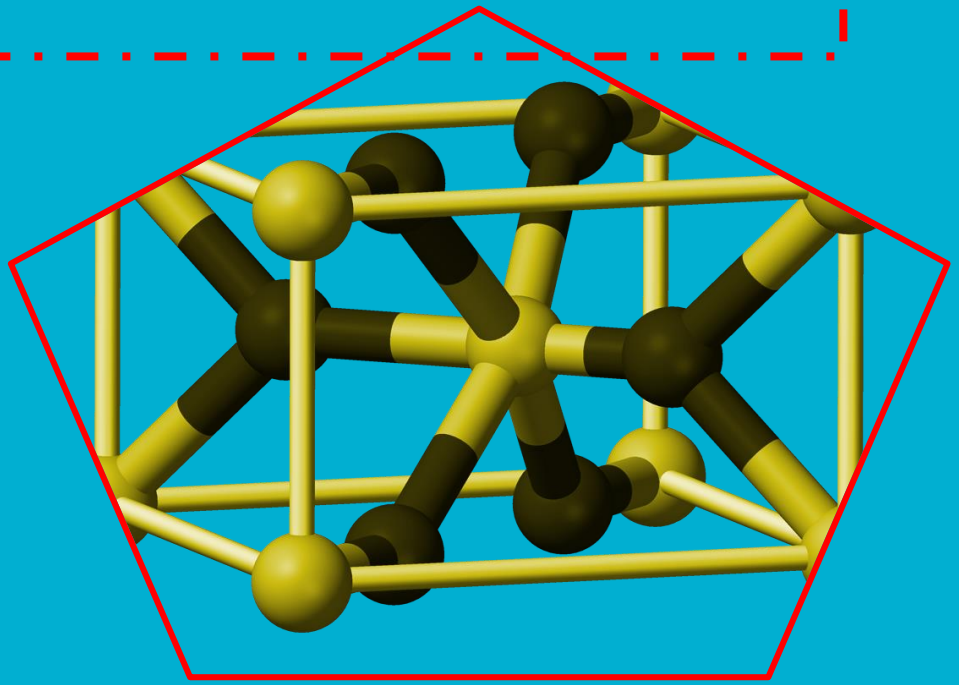
Symptoms

Exposure to PVC dust may cause asthma and affect the lungs.

PVC is usually tested in a lab, but if you want to test for a product, you try to find the density of the PVC.

If you think your health has been affected by exposure to PVC, contact your health care professional.

Flouride



Brandon Marna

About Flouride

fluoride is an endocrine disruptor that can affect your bones, brain, thyroid gland, pineal gland and even your blood sugar levels

40% of American Teenagers Show Visible Signs of Fluoride Overexposure

Fluoride Supplements Have Never Been Approved by the FDA

Where is Flouride found?

Found in water

Found in Soil

Found in the air

Found in living organisms

Factories

chemicals

Responses to Flouride and Symptoms

Increased lead absorption

Disrupts synthesis of collagen

Hyperactivity and/or lethargy

Muscle disorders

Thyroid disease

Arthritis

Dementia

Bone fractures

Lowered thyroid function

Bone cancer (osteosarcoma)

Inactivates 62 enzymes and inhibits more than 100

Inhibited formation of antibodies

Genetic damage and cell death

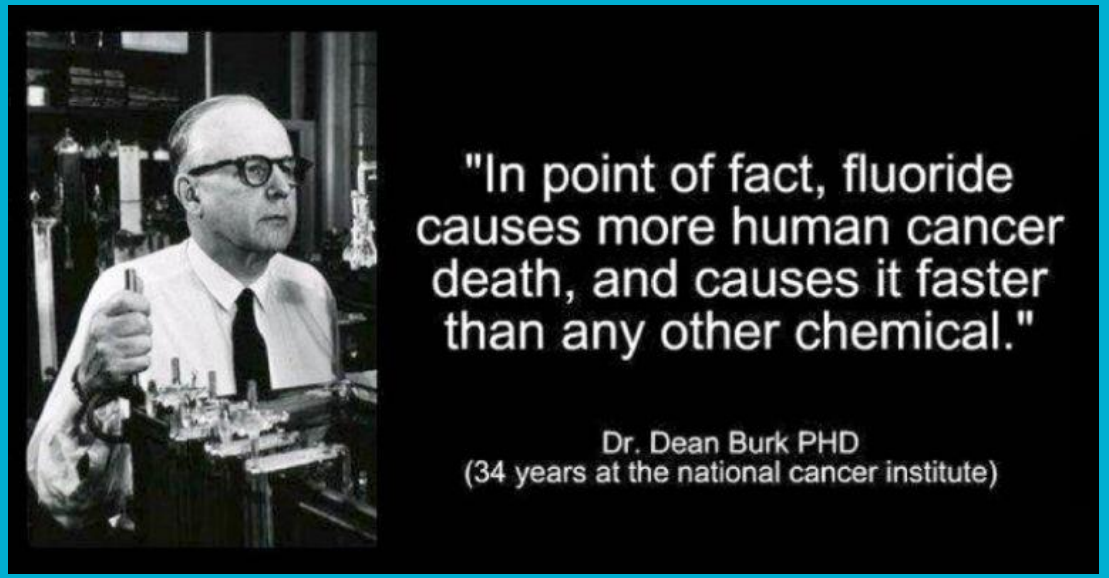
Increased tumor and cancer rate

Disrupted immune system

Damaged sperm and increased infertility

Test, Treatments, and Prognosis

- Fluoride Blood Test
- Urine Fluoride Test
- Cardiac monitoring



Arsenic

By: Ashlyn Bickel

What is Arsenic and where is it found

-Arsenic is a metal that can be deadly in high levels.

-It is found in groundwater, soil, sediments, and some man made metal objects.

-A person is exposed to arsenic through contaminated drinking water

Symptoms and treatment

-Symptoms of acute exposure to arsenic are vomiting, abdominal pain, and watery diarrhea

-Symptoms of chronic exposure to arsenic are thickened skin, darker skin, and cancer

-A person can be tested for arsenic poisoning through a urine, blood or hair test.

-Dimercaprol and dimercaptosuccinic acid are chelating agents that sequester the arsenic away from blood proteins and are used in treating acute arsenic poisoning

Asbestos

By: Jared Reinson

Description	*Asbestos refers to a set of six naturally occurring fibrous minerals: chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Among these, chrysotile and amosite asbestos are most common.*
Where is it Found?	Many homes built before 1980 contain asbestos in old floor tiles, ceiling tiles, roof shingles and flashing, siding, insulation, pipe cement, and joint compound used on seams between pieces of sheetrock.
Response to Toxin	You increase your risk for diseases like lung cancer, mesothelioma, and asbestosis.

Symptoms	Symptoms include chest pain, appetite loss, finger clubbing (enlarged fingertips), nail deformities., shortness of breath, persistent dry cough.
Exposure Needed	If products containing asbestos are disturbed, tiny asbestos fibers are released into the air. When asbestos fibers are breathed in, they may get trapped in the lungs and remain there for a long time. Over time, these fibers can accumulate and cause scarring and inflammation, which can affect breathing and lead to serious health problems.
Diagnostic Tests	Diagnosing asbestosis may also involve undergoing a chest X-ray, which is used to detect any abnormalities present in lung tissue. On an X-ray, scarred lung tissue developing from

Treatments	Doctors prescribe breathing treatments, prescription medication and sometimes surgery for people with asbestosis
Prognosis	As the more aggressive type of lung cancer, small cell lung cancer has a poorer prognosis. Limited small cell cancer, which is confined to the lungs, is associated with a median survival rate of 16 to 22 months.

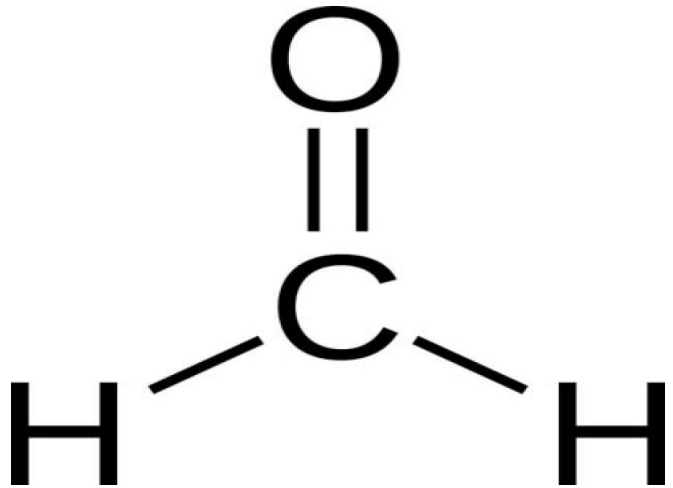
Formaldehyde

By John Stauffer

What is Formaldehyde?

Formaldehyde is an odorless and colorless gas solution

This is commonly made by oxidizing methanol



Where is it found?

- Formaldehyde is commonly lace in building materials and common household products or even automobile tailpipe emissions
  - It is used in pressed-wood products,
    - particleboard, plywood, and fiberboard; glues and adhesives; permanent-press fabrics; paper product coatings; and certain insulation materials
- Formaldehyde also occurs naturally in the environment. It is produced in small amounts by most living organisms as part of normal metabolic processes.

The Exposure and Dangers of Formaldehyde

Formaldehyde is in both indoor and outdoor air at low levels, usually less than 0.03 parts of formaldehyde per million parts of air (ppm).

Materials can release formaldehyde gas or vapor into the air.

Short Term Symtoms- watery eyes; burning sensations in the eyes, nose, and throat; coughing; wheezing; nausea; and skin irritation

Long Term Symptoms - Cancer related symptoms along with various skin/eye problems

Treatment

There is no direct treatment for Formaldehyde because there is no direct disease associated with the chemical. Instead, in the workplace or at home, a person can use products that have less of a chemical pressure associated with Formaldehyde. For driving, one can use a more environmentally friendly car to reduce the tailpipe air emissions releasing less Formaldehyde related chemicals into the air.

Radon

About Radon

-it comes from the natural breakdown of uranium

-it is a natural gas

-could be exposed to it if you have been around uranium or if you smoke

Symptoms and effects

- can lead to lung cancer
- Persistent cough
- Pneumoina

-difficulty breathing

Cyanide:

Cyanide can be a colorless gas, such as hydrogen cyanide, cyanogen chloride , a crystal form such as sodium cyanide, or potassium cyanide.

Released:

i. Natural substances from various foods or plants

ii. Cigarette smoke

iii. Manufacturing plastics

Exposure and Symptoms

Minor exposure: Breathing/Absorbing/Eating

- Dizziness
- Headache
- Nausea/Vomiting
- Rapid Breathing/Heart rate
- Restlessness
- Weakness

Major Exposure: Any method in excess

- Convulsions
- Loss of consciousness
- Low Blood Pressure
- Respiratory Failure- Death

Health Effects/Treatments

- Treated in hospital
  - Antidotes and Medical Procedures
  - Treat as soon as possible for favorable results
- Survivors of high exposure
  - Heart/Brain/Nerve Damage

Tetrodotoxin

By: Kaitleigh Witten

Symptoms: Paraesthesia appears in the face and extremities, which may be followed by dizziness or numbness.Nausea, vomiting, diarrhoea and epigastric pain may also be present.

Type of exposure needed to cause toxicity: Exposure to tetrodotoxin usually occurs through eating improperly prepared fish or possibly through contamination of other food products.

Diagnostic tests: There is no specific laboratory test that confirms tetrodotoxin ingestion exists, although dietary history is key for diagnosis. Mouse bioassays for paralytic shellfish toxin exist that are positive with tetrodotoxin. There are research chromatography techniques for tetrodotoxin as well, but neither is available in the acute clinical situation. Tetrodotoxin also may be detected by fluorescent spectrometry.

Treatments: Provide careful attention to the airway, breathing, and circulation. Patients may require endotracheal intubation for oxygenation and airway protection in the setting of muscle weakness and respiratory failure, which can occur soon after ingestion of the tetrodotoxin.

Prognosis: Severely poisoned patients may be very weak, have difficulty speaking, and be unable to provide a history.

Alpha-Amanitin

By Greg Youssef

Where is it found?

Found in mushrooms such as the Death Cap and Destroying Angel

Symptoms, Detection,and Treatment

Impacted by ingestion

Symptoms begin with Diarrhea and Cramps, but eventually lead to Liver and Kidney Failure.

15% of those poisoned die within 10 days.

Diagnosis is difficult but can be through urine.

After digestion untreatable

Glycoalkaloid

Katie Miller

Where is it found: Potatoes and tomatoes.

Symptoms: Mild gastrointestinal effects, nausea, vomiting, diarrhea, stomach cramps and headaches.

Type of Exposure: You eat it.

Diagnostic Tests: None.

Treatments: Goes away on its own.

Prognosis: Usually goes away after a few days but more serious cases result in neurological problems (paralysis and hallucinations) and even death.

Chlorine

By Allie Budd

Found

- Swimming pools
- Makes paper
- Bleach
- Drinking water purification
- Table salt
- Plastic

Usage

- Used as a disinfectant, kills bacteria

Toxicity

- **Symptoms**
  - Violent cough
  - Nausea
  - Dyspnea
  - Blurred vision
  - Chest tightness
  - Watery eyes
  - Burning sensation in eyes, nose, throat
  - Burning pain, redness, blisters on skin
- **Exposure**
  - Chlorine gas: Exposure through inhaling, eye contact, and skin contact
  - Chlorine liquid: Exposure through touching or drinking
  - Chlorine liquid contaminating food

Diagnostic tests, Treatments, Prognosis

- Diagnosis tests
  - Blood Test
- Treatments
  - No antidote exists for chlorine exposure
  - Remove chlorine from body immediately
  - Supportive medical care
- Prognosis
  - Prolonged pulmonary disease, unlikely to occur

Oxybenzone

By Claire Huff

What is it?

Commonly found in personal care products such as sunscreen, nail polish, lotions, and lipstick

can cause allergic skin reactions, may disrupt hormones, or cause cancer

When applied to skin, it penetrates skin cells and causes extreme sensitivity

Urine tests are taken to see if the toxin is still stored in the body

Children under age 2 are not supposed to use it because they have not developed the enzyme that breaks the toxin down

Outcome: can eventually lead to skin cancer, but it is one of the few substances to effectively protect against UV rays, this ingredient should not be ruled out entirely

Chloroform

By. Kevin McLester

Definition

Chloroform, or trichloromethane, is an organic compound with formula $CHCl_3$. It is a colorless, sweet-smelling, dense liquid that is produced on a large scale as a precursor to PTFE and refrigerants, but the latter application is declining.[4] It is one of the four chloromethanes and a trihalomethane.

Symptoms

- Dizziness
- Unconsciousness
- Death
- Excitement
- Drowsiness
- Irritation of nose and throat
- Burning of mouth and throat.

Type of Exposure

Acute exposure to Chloroform, via Inhalation “breathing it in”, digestion “eating/drinking it”, or, though less common, through dermal contact “touches your skin while in water”, is what causes Chloroform to be toxic.

Where is it found?

It is found naturally in some types of seaweed and fungi but can also be synthesized in a lab.

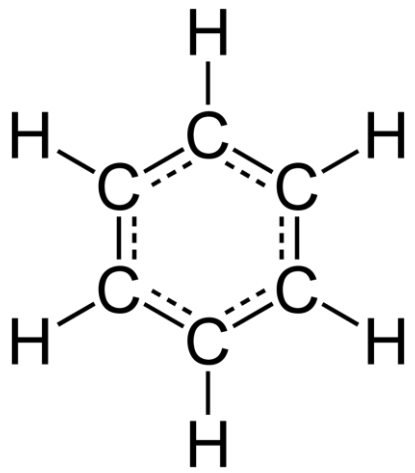
Treatment

No confirmed treatments for acute exposure but reports say that it had been treated via intravenously administered N-acetylcysteine.

Prognosis

The drug is usually an anaesthetic so if you're exposed to it, usually it would be your doctor administering it to you. If a criminal is using it on you then it will knock you out or dull your senses unless they're trying to kill you immediately of which they'd just administer a lethal dose. From there on out you're most likely doomed as you've been kidnapped and your kidnapper probably has pretty shitty intentions if they are abducting you against your will.

Benzene



What is it?

Benzene is a highly flammable, colorless liquid

It can cause cancer as well as other conditions, such as:

- Anemia
- Low white blood cell count
- Low blood platelet count

These effects can damage the body’s bone marrow

Exposure

Benzene is commonly contained in other chemicals, and is used in rubbers, dyes, plastics, detergents, drugs, pesticides, and gasoline

The most common places of exposure are

- In an industrial workplace***
- In the general environment
- Through consumer products

Benzene contaminates a person through inhalation/consumption

Treatment

A doctor may administer tests to measure whether a person has benzene exposure, through a breath test or blood test

However, it is difficult to test for benzene exposure because the benzene evaporates into the body very quickly

At a low exposure level, flushing the skin exposed with soap and water for 2 to 5 minutes can rid the body of the toxin

At a high exposure level, medical treatment is required

Acetone

Brigid Di Blasio

Where is Acetone found and the responses that may occur?

Where Acetone is found

Fingernail polish remover

Particle board

Paint remover

Liquid or paste waxes and polishes

Detergent

Cleaning products

Rubber cement

Common Symptoms:

headache

slurred speech

lethargy

lack of coordination

a sweet taste in the mouth

Rare and Severe Symptoms:

Coma

Ways you exposed to Acetone:

- Breathing it
- Eating it
- Drinking it

Diagnostic Tests, Treatments and Outcome

Diagnostic Tests:

Usually it is a urine sample since you cannot test for it with blood works. It is very difficult to diagnose Acetone poisoning

Treatments:

For lung induced poisoning doctors will give you fresh oxygen to circulate the acetone out of your body

If you've drank large amounts then doctors will pump your stomach since vomiting it back up is very dangerous

Outcome:

- You can't die from acetone poisoning but it is very painful and if you inhaled large amounts then itd take weeks to get the acetone out of your body even if you do the treatment necessary. There is no long term effect from acetone poisoning. If you have had a high level of acetone intake then you can go into a coma