

TOXIN	Description	Sources of Exposure	Effect on the body
Arsenic	Arsenic is a naturally occurring element in the earth's crust. In its <b>inorganic</b> form, arsenic is found combined with one or more other elements such as oxygen, chlorine, and sulfur, whereas arsenic combined with carbon and hydrogen is referred to as <b>organic</b> arsenic. The organic forms are usually less toxic than the inorganic forms.	<ul style="list-style-type: none"> <li>• Food: (25-50 micro-g/day)</li> <li>• Shellfish and Fish (organic)</li> <li>• Water and air</li> </ul> <p>Arsenic exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>• Natural mineral deposits</li> <li>• Waste-chemical disposal sites</li> <li>• Manufacturing of copper and other metals</li> <li>• Low levels are found in fossil fuels</li> <li>• Pesticides</li> </ul>	<p><i>Short-term exposure:</i></p> <ul style="list-style-type: none"> <li>• Irritation of digestive tract</li> <li>• Nausea</li> <li>• Vomiting</li> <li>• Diarrhea</li> </ul> <p><i>Long-term exposure:</i></p> <ul style="list-style-type: none"> <li>• Decreased red and white blood cell production</li> <li>• Abnormal heart function</li> <li>• Blood vessel damage</li> <li>• Liver injury</li> <li>• Impaired nerve function causing "pins and needles"</li> <li>• Skin abnormalities (small "corns")</li> <li>• Increased risk of cancer</li> <li>• Insomnia</li> </ul>
Lead	Lead is a <b>heavy metal</b> found naturally in small amounts in the earth's crust. Heavy metals are extremely toxic because they are water soluble and may be readily absorbed into the body. Naturally, it can be introduced into the environment from active volcanoes; however, its many human uses throughout history have led to the steady increase in human lead levels over time.	<ul style="list-style-type: none"> <li>• Breathing contaminated air</li> <li>• Drinking contaminated water</li> <li>• Eating foods exposed to contaminated soil</li> </ul> <p>Lead exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>• Production of chemicals</li> <li>• Paint</li> <li>• Gasoline additives</li> <li>• Various metal productions</li> <li>• Ammunition</li> <li>• Iron and steel production</li> <li>• Smelting operations</li> <li>• Municipal waste incinerators</li> <li>• Lead-acid-battery manufacturers</li> </ul>	<p><i>Short-term exposure:</i></p> <p>Exposure to lead at low levels has the greatest effect on children. Effects include the following:</p> <ul style="list-style-type: none"> <li>• Decreased intelligence</li> <li>• Slowed growth</li> <li>• Hearing problems</li> </ul> <p><i>Long-term exposure:</i></p> <ul style="list-style-type: none"> <li>• Brain/Nervous system damage</li> <li>• Kidney damage</li> <li>• Damage to male reproductive system</li> <li>• Numbness</li> </ul>

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Mercury (metallic)	Mercury is a volatile <b>heavy metal</b> . In its natural form, mercury is not highly toxic; however, inorganic or organic compounds that contain mercury pose a serious hazard to living organisms. The symptoms of inorganic mercury and organic mercury are acutely different. One unusual thing about mercury is that one form of organic mercury called methyl mercury can build up in certain fish.	<ul style="list-style-type: none"> <li>Breathing contaminated air</li> <li>Consumption of contaminated food</li> <li>Having dental or medical treatments</li> </ul> <p>Mercury exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>Production of chlorine gas</li> <li>Thermometers</li> <li>Dental Fillings</li> <li>Battery production</li> <li>PVC production</li> <li>Pulp and paper mills</li> </ul>	<p>Short and long-term exposure has similar effects; however, the symptoms are not necessarily permanent.</p> <ul style="list-style-type: none"> <li>Brain damage</li> <li>Kidney damage</li> <li>Fetal damage</li> <li>Nervous system damage</li> <li>Loss of muscle control</li> <li>Entering a coma</li> <li>Memory loss</li> <li>Loose teeth and sore gums (inorganic)</li> </ul>
Vinyl Chloride	Vinyl chloride is a colorless gas with a mild, sweet odor. It is a man-made chemical that does not occur naturally in the environment. This material is used to manufacture a variety of plastic and vinyl products including pipes, wire and cable coatings, packaging materials, furniture and automobile upholstery, wall coverings, housewares, and automotive parts.	<ul style="list-style-type: none"> <li>Breathing contaminated air</li> <li>Consumption of contaminated water</li> </ul> <p>Vinyl Chloride exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>Plastics industry (PVC)</li> <li>Chemical waste seepage into water</li> </ul>	<p>Short-term exposure:</p> <ul style="list-style-type: none"> <li>Dizziness</li> <li>Lack of muscle coordination</li> <li>Headache</li> <li>Unconsciousness</li> </ul> <p>Long-term exposure: "vinyl chloride disease"</p> <ul style="list-style-type: none"> <li>liver damage</li> <li>circulation problems</li> <li>thickening of the skin</li> <li>changes in the blood</li> <li>lung damage</li> <li>changes in the bones at the end of the fingers</li> </ul>

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Cadmium	Cadmium is a heavy metal. It occurs naturally in air, water, soil and food. Cadmium is most often encountered in combination with other elements such as oxygen (cadmium oxide), chlorine (cadmium chloride), or sulfur (cadmium sulfide).	<ul style="list-style-type: none"> <li>• Food consumption</li> <li>• Air contamination</li> </ul> <p>Cadmium exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>• Fossil fuel burning</li> <li>• Incineration of municipal waste</li> <li>• Metal plating</li> <li>• Pigments</li> <li>• Battery factories</li> <li>• Plastic Industry</li> </ul>	<p><i>Ingestion of high doses:</i></p> <ul style="list-style-type: none"> <li>• Vomiting</li> <li>• Diarrhea</li> </ul> <p><i>Other levels of exposure:</i></p> <ul style="list-style-type: none"> <li>• Lung damage</li> <li>• Kidney damage</li> <li>• High blood pressure</li> </ul>
Chloroform	Chloroform is a colorless or water-white liquid with a pleasant nonirritating odor. Although it is both a man-made and naturally occurring compound, human activity is responsible for most of the chloroform found in the environment. Chloroform was used as anaesthetic for years before its harmful effects were recognized.	<ul style="list-style-type: none"> <li>• Breathing contaminated air</li> <li>• Ingesting contaminated water</li> <li>• Ingesting contaminated foods or beverages</li> </ul> <p>Chloroform exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>• Cooling fluid production</li> <li>• Pesticides production</li> <li>• Dyes production</li> <li>• Fire extinguisher production</li> <li>• Dry cleaning</li> <li>• Various solvent production</li> </ul>	<p><i>Short-term exposure:</i></p> <ul style="list-style-type: none"> <li>• Tiredness</li> <li>• Dizziness</li> <li>• Headache</li> </ul> <p><i>Long-term exposure:</i></p> <ul style="list-style-type: none"> <li>• Liver damage</li> <li>• Kidney damage</li> <li>• Nervous system damage</li> <li>• Lack of muscular control</li> <li>• Brain damage</li> </ul>

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Benzene	Benzene is a naturally occurring substance produced by volcanoes and forest fires and present in many plants and animals, but benzene is also a major industrial chemical made from coal and oil. Benzene is used in plastics, detergents, and pesticides as well as a component of gasoline.	<ul style="list-style-type: none"> <li>• Breathing contaminated air</li> </ul> <p>Benzene exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>• Gasoline filling stations</li> <li>• Leaking underground storage tanks</li> <li>• Wastewater from certain industries</li> <li>• Landfills containing benzene</li> <li>• Benzene spills</li> </ul>	<p><i>Short-term exposure:</i></p> <ul style="list-style-type: none"> <li>• Dizziness</li> <li>• Headaches</li> </ul> <p><i>Long-term exposure:</i></p> <ul style="list-style-type: none"> <li>• Leukemia</li> <li>• Anemia</li> <li>• Internal bleeding</li> <li>• Fetal damage</li> </ul>
PCBs	The abbreviations PCB refers to polychlorinated biphenyls. PCBs are a family of man-made chemicals that contain 209 individual compounds with varying toxicity. PCBs are no long manufactured, but human exposure still occurs.	<ul style="list-style-type: none"> <li>• Skin contact</li> <li>• Breathing contaminated air</li> <li>• Consumption of contaminated food</li> </ul> <p>PCB exposure is associated with the following situations:</p> <ul style="list-style-type: none"> <li>• Transformers and capacitors exposure</li> <li>• Contaminated water and fish (this is the most common route)</li> <li>• Air-borne particulates</li> <li>• Contaminated indoor air (especially in buildings that contain appliances containing PCB capacitors or old fluorescent lighting fixtures)</li> </ul>	<p><i>Known Effects:</i></p> <ul style="list-style-type: none"> <li>• Liver damage</li> <li>• Skin irritations</li> <li>• Reproductive disorders</li> <li>• Cancer</li> </ul>