

What is chromium?

Chromium is a naturally occurring element that is found in many forms. Elemental chromium is a hard, brittle, grey to bluish-white metal that is relatively non-toxic and is used for making steel. Trivalent chromium is an essential mineral that helps the body use fat, sugar, and protein but too much can cause health issues. Hexavalent chromium is not an essential mineral for the body.

What are some sources of chromium?

Chromium is found naturally in rocks, soil, plants, and animals. It can also be released into the air, water, and soil through manufacturing processes and use or disposal of chromium based products.

Trivalent chromium is found in stainless steel utensils and cookware, food supplements, chrome orthopedic devices, and certain foods such as some organ meats, oysters, alfalfa, fruit, brewer's yeast, and beer. Trivalent chromium and hexavalent chromium are used in leather tanning, chrome plating, dyes and pigments, anti-corrosive products, and wood preserving.

How do chromium exposures occur?

Smoking, eating and cooking with stainless steel utensils and cookware, and having chrome orthopedic devices implanted can all result in chromium exposures. Eating foods high in chromium content, such as organ meats, oysters, alfalfa, fruit brewer's yeast and beer, and taking some supplements can also increase a person's chromium exposure.

Working with chromium or chromium products in industry, mining, or manufacturing and not wearing the proper personal protective equipment or not having properly ventilated work areas can result in exposure. Drinking, cooking with, or swimming in contaminated water can result in exposures.

How can chromium affect my health?

Trivalent chromium is not absorbed well and acts as an irritating product rather than one that burns. Sneezing, coughing, shortness of breath, chest pain, and asthma may develop when breathing in particles or chromium dust. Skin exposures may cause skin irritation. Long term repeated exposures can result in chronic irritation of the skin, sinuses, and lungs, as well as kidney damage.

Hexavalent chromium can be absorbed into our cells by

breathing, swallowing, or skin exposure. It disrupts how cells function and causes cell damage and death.

Breathing chromium can result in irritation and ulcers to the nasal passages, and other effects such as cough, shortness of breath, and asthma.

Skin exposure to chromium can produce irritation, allergic reactions, and burns.

Swallowing chromium can cause symptoms ranging from minor upset stomach to severe bloody vomiting and diarrhea with associated blood pressure issues, liver and kidney damage, and possibly death. The severity of symptoms depends on the amount swallowed, the length of exposure before medical care was received, and the specific product ingested. Hexavalent chromium is known to cause changes to genes and chromosomes.

Is there a medical test that can determine if I have been exposed to chromium?

Yes. Chromium is an essential element in our body, we need it and it should be present when tested. If an exposure has occurred your medical doctor may order lab tests to assess your overall health, but chromium levels would not be indicated.

Does an elevated level of chromium always mean that I have chromium poisoning?

No. Since chromium is a naturally occurring element, many people will have some exposure to it. Too much exposure to high levels of chromium can sometimes lead to health symptoms.

Elevated levels of chromium may confirm exposure but do not predict the kind of health effects that may develop.

What is the treatment for chromium exposures?

The main treatment is to remove the source of the chromium and prevent re-exposure. This may involve activities such as using proper protective equipment on the job or with hobbies, and discontinuing supplements.

What are chelators and when would they be used?

Chelators (kee-lay-tors), attach to some metals and remove them from the body, but they also remove good minerals. Chelators can cause damage to other organs and can cause life threatening allergic reactions. Because of these dangers it is important that patients be assessed by a medical doctor and that appropriate tests are performed at an appropriate laboratory.

Chelation is not a recommended treatment for chromium exposures.

Does chromium cause cancer?

Only the hexavalent chromium form is known to cause cancer. It is more often associated with lung cancer but other cancers such as those of the stomach, bladder, kidney, brain, pancreas, genital, and blood have been reported.

Where can I get more information?

If you have questions about chromium call PADIS (Poison and Drug Information Service) at 1-800-332-1414. Information Specialists are available 24/7 to help answer your questions.