

## Air Toxics - Metals

### Protective benefits of eating a diet rich in calcium, iron, vitamin C and other micronutrients

*The Oregon Health Authority (OHA) has gathered several resources from federal and state health agencies with advice and recommendations for ways to reduce the health effects of metals through nutrition. This factsheet provides information on how to lower or prevent metals from being absorbed and stored in the body. Good nutrition helps accomplish this goal.*

#### Key Points

##### 1- A healthy diet is protective

Eating fresh fruits and vegetables (rich in vitamin C, calcium and iron) as well as a proteins from a variety of sources, reduces the body's absorption of heavy metals. Eating foods with vitamin C helps increase the amount of iron in the blood and healthy iron levels help reduce the amount of lead taken into our bodies.

##### 2- Eating small meals throughout the day is protective

A child who eats four to six small healthy meals during the day, along with a diet rich in calcium and iron will absorb less lead. Children with empty stomachs absorb more lead than children with full stomachs.

### Below are some resources that provide more information

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From the Nebraska Department of Health and Human Services

<http://dhhs.ne.gov/publichealth/Pages/LeadNutrition.aspx>

#### Nutrition and Lead Poisoning Prevention

Nutrition can play a pivotal role in preventing childhood lead poisoning. It is important to help minimize the amount of lead that is absorbed and stored in the bones. Good nutrition helps accomplish this goal. A child's body requires certain minerals, especially calcium and iron. When these minerals are deficient in the body, lead absorption is increased. Children whose diet is deficient in these minerals retain more of the lead than they would have otherwise.

#### Regular Meals

An empty stomach absorbs more lead. By feeding your child healthy meals and snacks each day, it will help his or her body to absorb less lead.

#### Foods Rich in Iron

Children need to have plenty of iron in their system. To the body, iron and lead look very similar. When there is more iron than lead, the body will absorb the iron. The following foods are rich in iron:

- Iron-fortified cereals
- Green leafy vegetables
- Pureed meats
- Lean red meats
- Tuna, salmon, fish
- Raisins, dates, and prunes
- Dried beans and peas
- Skinless poultry
- Nuts or sunflower seeds

## **Foods Rich in Calcium**

Foods that are high in calcium can also help the body absorb less lead. The following foods are rich in calcium:

- Milk and milk products
- Cheese and Yogurt
- Green leafy vegetables
- Calcium-enriched orange juice
- Tofu
- Salmon
- Peanuts

## **Foods Rich in Vitamin C**

Vitamin C will help the body absorb more iron and calcium. The following foods are rich in Vitamin C:

- Oranges and tangerines
- Grapefruit
- Limes and lemons
- Strawberries
- Cantaloupe
- Kiwi
- Potatoes and sweet potatoes
- Tomatoes
- Broccoli
- Bell peppers

## **Foods to Avoid**

- Foods stored in lead-soldered cans, glazed ceramic dishes or crystal.
- Foods that could have picked up lead dust, such as food that has fallen on the floor.
- Food stored in printed plastic bread bags (the inks used for the wrapper may contain lead).
- Candy that can contain lead, such as imported Mexican candy made with tamarind or chili power. Learn more about lead in candy from CDC: <http://www.cdc.gov/nceh/lead/tips/candy.htm>
- Folk medicines shown to contain lead. Find more details about lead in folk medicines from CDC: <http://www.cdc.gov/nceh/lead/tips/folkmedicine.htm>

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From the Centers for Disease Control and Prevention (CDC)

<http://www.cdc.gov/nceh/lead/tips.htm>

## Steps to take to avoid exposure to metals

**Children and pregnant women should not be present in housing built before 1978 that is undergoing renovation.** They should not participate in activities that disturb old paint or in cleaning up paint debris after work is completed.

**Regularly wash children's hands and toys.** Hands and toys can become contaminated from household dust or exterior soil. Both are known lead sources.

**Regularly wet-mop floors and wet-wipe window components.** Because household dust is a major source of lead, you should wet-mop floors and wet-wipe horizontal surfaces every 2-3 weeks. Windowsills and wells can contain high levels of leaded dust. They should be kept clean. If feasible, windows should be shut to prevent abrasion of painted surfaces or opened from the top sash.

**Take off shoes when entering the house to prevent bringing lead-contaminated soil in from outside.**

**Prevent children from playing in bare soil; if possible, provide them with sandboxes.** Plant grass on areas of bare soil or cover the soil with grass seed, mulch, or wood chips, if possible. Until the bare soil is covered, move play areas away from bare soil and away from the sides of the house. If you have a sandbox, cover the box when not in use to prevent cats from using it as a litter box. That will help protect children from exposure to animal waste.

## Examples of plant-based foods containing protective nutrients

### Iron

Beans, dark green vegetables, dried fruits, nuts, seeds, and whole grains

### Calcium

Green leafy vegetables, legumes, and calcium-fortified orange or apple juice

### Vitamin C

Broccoli, dark leafy greens, grapefruit, and sweet red pepper

### Zinc

Tofu, tempeh, legumes, nuts, seeds, oatmeal