



## SOME HISTORY

WHO GETS LEAD POISONING?

SOURCES OF LEAD

WHEN LEAD IS IN THE BODY

SYMPTOMS OF LEAD POISONING

THE ROLE OF DIET

TESTING FOR LEAD POISONING

TREATMENTS

BLOOD LEAD LEVEL CHART

## Some History

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In 1950, about 90% of all American homes contained lead paint and every car used leaded gasoline. Since then, the U.S. government has banned both lead paint and leaded gasoline. This has reduced the amount of lead poisoning, but there's still a lot of lead in our environment. As a result, many people continue to get sick from lead poisoning.



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## Who gets lead poisoning?

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Anyone can get lead poisoning.

However, there are two groups who are most at risk. Small children and pregnant women absorb about three times as much lead as most typical adults. More lead in their bodies means more symptoms from lead poisoning:

### Children under 6

Their growing brains and nervous systems are very easily damaged by lead. The barrier your body creates between the brain and your blood supply is not fully formed until you are 10. Therefore, lead in young people's bodies moves to the brain more easily than it does in adults.



### Pregnant Women

Any lead in their bodies can be carried to their unborn babies, causing birth complications and other problems.



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## Sources of Lead

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There are many sources of lead, but the three major ones are:

- Dust and chips from lead paint in and around older buildings
- Leftover lead in the soil from the days of leaded gasoline
- Drinking water in homes with lead pipes

And there are three ways that lead can get into our bodies:

- Breathing - We can inhale tiny particles of lead dust, usually from lead paint.
- Eating - Small children, in particular, sometimes eat lead paint chips or lead dust that's gotten onto their hands or toys.
- Through our skin - We can absorb microscopic bits of lead through our skin.

### Other Sources of Lead

- Some candies, especially those from Mexico
- Kohl paint used as makeup
- Wicks in certain candles
- Some toy jewelry

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## When Lead is in the Body

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Once lead is in the human body, our blood carries it to the various organs and tissues. Lead has the ability to imitate calcium and iron, which are things that our bodies need. This means that our bodies can be tricked into wanting the lead that gets inside us. The lead can then remain stored within us for a very long time. A person can have lead poisoning symptoms many years after the lead first entered their bodies.

There is no safe amount of lead inside our bodies. Even a very small amount can cause serious problems.

### Where can lead go in your body?

Typically ....

- 95 percent gets stored in long bones of your arms and legs.
- 4 percent goes to your brain, kidneys and liver.
- 1 percent is carried by your blood.

### Did you know?

Lead has been used in many products since ancient times. The Romans used lead paint and were even aware of its dangers. "Crazy as a painter" was a common phrase that came from the sometimes-strange behavior of lead-poisoned painters.

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## Symptoms of Lead Poisoning

Lead poisoning can cause many different kinds of symptoms.

And it can affect nearly every system in our bodies, including these:

- Nervous system – lead can damage our central nervous system, particularly the brain
- Circulatory (blood) system – lead interferes with the body's ability to make hemoglobin; this decreases the circulation of oxygen in our bodies
- Renal system – lead can cause very serious kidney damage
- Reproductive system – lead can cause sterility for both men and women; it can also cause low birth weight babies, stillbirths and miscarriages

Kids who have lead poisoning sometimes show these symptoms:

- Lower I.Q.
- Attention and behavior problems
- Decreased growth
- Hearing loss and problems speaking
- Problems with muscle coordination
- Damage to the brain, liver and kidneys

Some of the adult symptoms include:

- Nerve disorders
- High blood pressure
- Memory and concentration problems
- Aggression and irritability
- Digestive problems

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## The Role of Diet

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Our bodies often confuse lead for the beneficial elements calcium and iron. Eating foods that are high in calcium and iron can actually protect us from lead poisoning. Some of these foods include dairy products, cooked greens, red meat, tofu, spinach, liver and raisins.



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## Testing for Lead Poisoning

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The only way to know for sure that someone has lead poisoning is by testing. There are two tests that work together to measure the amount of lead and the symptoms within a person's body:

- **Blood lead level test (BLL)** — this test measures the amount of lead in your blood at a given time: while it is helpful, it does not measure the entire amount of lead in your body (including organs and bones) or any symptoms caused by that lead
- **Zinc Protoporphyrin Test (ZPP)** — this test measures the impact of lead on the blood-making within the body; it provides a better picture of the real harm that lead may be doing to a person

Small children and pregnant women should be tested for lead poisoning. Older children and other adults should also be tested if they believe they've been exposed to lead.

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## Treatments

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Special drugs called chelates can help to treat lead poisoning. Chelates can reduce the amount of lead in a person's body. They do not, however, eliminate any problems already caused by the lead poisoning. Damage caused by the lead has to be treated separately.

The very best way to limit lead poisoning is to limit exposure to lead.

### Did you know?

- Lead was used in the water pipes throughout the Roman Empire. And the word "plumbing" comes from the Latin word for lead, plum-bum. That's why lead is represented as "Pb" on the Periodic Table of Elements.
- In the past, lead was added to wine to make it sweet.







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# Blood Lead Level Chart

CHILDREN	150	ADULTS
Coma/Seizures Kidney damage Stomach cramps	100	Coma/Seizures
	50	Decreased life span
Decreased ability to make red blood cells	40	Decreased ability to make red blood cells
Decreased ability to use Vitamin D	30	
	20	Increased blood pressure & hearing loss
Nerves affected (slower reaction times)	10	
Premature birth; reduced birth weight		
Interference with brain cell development		
Interference with IQ/hearing/growth		