



LEAD

Sources, Detection & Effects

Compliments of Dr. Donna F. Smith

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Lead



Sources Of Lead

- ceramic glazes
- cigarette smoke
- colored ink
- food cans soldered with lead
- Grecian Formula and Youth Hair
- hair dyes
- lead-based paint
- lead water pipes
- leaded gasoline
- manufacture of batteries
- mine smelting industries
- pesticide residues
- water contaminated with lead from industrial waste

- Lead and other heavy metals are contaminating baby foods like puree, juice and teething cookies, i.e., Arrowroot cookies, according to Food and Drug Administration data and recent testing by Consumer Reports.
- Root vegetables: Sweet potatoes and carrots
- Children can also be born with elevated lead, passed through the placenta from their mothers.
- Diets deficient in calcium, magnesium, or iron increase lead absorption.



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Detection Of Lead

- Blood lead testing is not accurate in detecting chronic lead toxicity. Within 30 days of exposure, most lead is removed from the blood and stored in body tissues.
- Blood challenge tests can detect a certain amount of lead poisoning.
- Hair testing has been shown by the Environmental Protection Agency to be a good method of testing for lead poisoning.
- Several hair tests may be necessary before elevated lead levels are revealed.

How Lead Affects The Body

Blood -	inhibits enzymes associated with hemoglobin synthesis, and increases the rate of destruction of red blood cells. End result is fatigue.
Bones -	lead is incorporated into bone in preference to calcium.
Brain -	can inhibit copper-dependent enzymes needed for neurotransmitters (dopamine, epinephrine, norepinephrine). End result is hyperactivity.
Energy –	inhibits copper and iron-dependent enzymes in the Krebs cycle required for energy production. End result is fatigue.
Kidneys -	lead can raise uric acid levels and impair kidney function. End result is gout.
Minerals -	lead displaces and can cause deficiency or bio-unavailability of calcium, zinc, manganese, copper, and iron.
Thyroid Gland -	lead interferes with iodine uptake by the thyroid, and can inactivate thyroxin, the thyroid hormone.