Why Lead is Dangerous, and the Damage It Does

In the field of toxicology, everything is considered to have the potential for being a “toxin”. In the 1500s, Paracelsus, the father of toxicology, coined his famous dictum, “What is there that is not poison? All things are poison and nothing is without poison. Solely the dose determines that a thing is not a poison.”

Lead, however, is a toxin at any dose. It serves no purpose in our body. Unlike most other toxins which our body can eliminate via such manners as metabolism and excretion, our body has no effective ability to eliminate lead. Rather than being eliminated, the majority of lead taken in becomes deposited in bones and stays with us for the rest of our lives.

The CDC has declared that “no safe blood lead level in children has been identified.” Lead interferes with numerous enzymes in our body, causing muscle and joint aches. It damages our brains through such mechanisms as interfering with neuronal messaging systems. Lead leads to decreased fertility in both males and females. Lead harms our kidneys and can result in hypertension later in life. Lead prevents our

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bodies from creating hemoglobin, resulting in anemia. It is a dangerous toxin to all ages, but especially dangerous to developing children where it causes development errors in brains and results in lower IQs. There are numerous treatments, such as chelation, that can be employed if an individual is poisoned with lead. However, the first goal is to assure our population does not become exposed to toxins, especially to lead. Entities, such as the CDC, OSHA, and our local state health departments have worked diligently to decrease adult and child lead exposure. Public health initiatives over the past few decades in the United States have been successful in lowering our public’s blood lead levels. Such public health preventative work to decrease lead exposure will result in marked declines in future adverse health outcomes in subsequent generations.

If you have questions about lead, view information at reliable sites such as:

- **Lead Safe Virginia** (Virginia Department of Health)
- **Toxicological Profile for Lead** (Agency for Toxic Substances and Disease Registry)

The **Blue Ridge Poison Center** can also help to answer questions regarding lead poisoning sources, symptoms, and treatment. Consults are free and available day or night. 1-800-222-1222. You may also call our healthcare provider dedicated line: 1-800-451-1428.

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The Blue Ridge Poison Center receives funding from the University of Virginia Health System, the Virginia Department of Health, and the U.S. Health Resources Services Administration (HRSA). We are accredited by the American Association of Poison Control Centers. We’ve been proudly serving the Commonwealth since 1978.