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Lead in Household Water

Tennessee Department of Health

Prepared by Martha Keel, Professor and Janice McCoy, former Research Associate Family and Consumer Sciences

UT Extension

SP605-J

What are the sources of lead in household water?

Plumbing installed in homes and other buildings before 1930 probably contains lead pipes. Newer homes are built with plastic or copper pipes. Copper pipes can be a concern because lead solder is, or was, used to join the pipes together. Lead-based solder may also be found in brass and chrome-plated brass faucets.

The U.S. Environmental Protection Agency (EPA) requires that most public water suppliers test their water for elevated levels of lead. The National Primary Drinking Water regulation for lead states that lead levels in public sources of water must be no more than 15 parts per billion (ppb). However, the EPA does not have regulatory authority over private water suppliers. This includes wells. **It is highly recommended that owners of these private sources test and treat the water to minimize their exposure to lead**.

What are the health effects of lead in people?

Lead does not have any beneficial effect on humans or animals. Elevated blood lead levels can cause significant health problems, including impairment of intelligence quotients (IQ), hearing loss in children, kidney damage and mental retardation. Extremely high levels of lead in the blood can lead to a coma, convulsions and even death.

Children are at a more significant risk than adults. Since they are growing, they absorb more lead. Pregnant women can pass lead on to their unborn children, thus increasing the probability of miscarriages and infant morbidity.

When is testing indicated in a home or building and who is responsible for testing in Tennessee?

Testing is the only way to confirm elevated lead levels in the water supply. Testing should be pursued if the home or structure has lead pipes and/or if corrosion is suspected in the plumbing. Frequent leaks, rust-colored water and stained dishes or laundry are some of the things that could indicate lead leaching into water supplies.

When conducting the test, a sample should be taken from the tap after water has been held in the pipes for six hours or more. A second sample should be taken after the water has flowed from the tap for approximately five minutes. This sec-

ond sample will indicate whether or not flushing the system will reduce lead levels. Follow the laboratory's instructions when collecting each sample. Remember to include testing for pH and corrosivity. Any level below the recommended standard of 7 is an indication of acidic pH, which can corrode a plumbing system.

The Tennessee Department of Environment and Conservation (TDEC) maintains a current listing of certified laboratories in the state. You may contact TDEC via telephone (615-532-0191) or check their listings at the Website: http://www.state.tn.us/environment/dws/index.html. The department may also be reached at their email address: Water.Supply@state.tn.us.

How can exposure to lead in drinking water be reduced?

If testing shows that flushing the tap can reduce lead levels, follow these suggestions:

- Never drink water that has been sitting in the plumbing lines for more than six hours without flushing first.
- Run the cold water faucet for at least two to three minutes until it becomes very cold. The water may then be used for drinking or cooking.
- Do not prepare infant formula or food with water from lead pipes. Bottled or distilled water is preferable. If bottled water is not available, use cold, flushed tap water and check with your healthcare provider to see if sterilizing is necessary.

Are there any long-term resolutions for limiting lead in drinking water?

For public water systems, a soda or phosphate feeder may be used to neutralize acidic water. A tank that contains lime may also be beneficial. If high lead levels persist in drinking water, reverse osmosis (RO) or distillation treatment can reduce the lead level. Both of these methods will also eliminate other impurities that may be present in the water. These methods may not be applicable for individual homes.

When constructing a new home, or remodeling an older home, use certified lead-free solder. These products provide more resistance to the dissolving action of corrosive water. Finally, consider the use of NSF-certified plastic piping if allowed by building codes.

Lead Testing at 1 and 2...
It's the Thing to Do
TENNESSEE CHILDHOOD LEAD POISONING PREVENTION PROGRAM

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