



Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive

National Office of Health Protection  
Health Service Executive  
Mount Kennett House,  
Mount Kennett Place, Henry St, Limerick.  
Tel: 00353 (0) 61 483338  
Fax: 00353 (0) 61 464205  
Website: <http://www.hse.ie>

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To: President, Irish College of General Practitioners

### Update on lead(Pb) in Drinking Water

Dear Doctor,

I am writing to provide some background information<sup>1</sup> on lead in drinking water. This may help GPs whose patients seek health advice because their drinking water has, or may have, a level of lead above the legal limit. Since 2013 the new EU limit for lead in drinking water is 10ug /l (previously 25ug/l).

**Unborn babies and children in the 0-5 age group have always been identified as at-risk groups in the context of long term exposure to lead in drinking water.** However, previous advice from the WHO was based on the amount of water consumed at a particular concentration for a particular body weight (provisional tolerable daily intake). Since 2011, the WHO states that there is a dose response effect and that **no lead in drinking water is tolerable.**

Irish Water is currently undertaking testing of lead concentration in drinking water in randomly selected households across Ireland. This is in preparation for the introduction of a national strategic approach to reducing lead in drinking water. In addition, as part of its metering programme, Irish Water is identifying premises where there may be lead piping in, or supplying, the premises.

**Some patients may be receiving advice letters from Irish Water with either the results of lead water testing in their houses or identifying the possibility of lead piping.**

The water in the mains supply does not usually contain lead. Therefore, the most likely explanation for lead in drinking water is lead leaching into the water from lead pipes or plumbing.

HSE public health advice covers short term actions which can be taken to protect health *before the replacement of pipework in households where lead issues have been identified.* The HSE website <http://www.hse.ie/water> outlines these actions, in addition to comprehensive relevant information regarding lead and drinking water:

- HSE "Frequently Asked Questions" about lead and drinking water – May 2015
- HSE/EPA Joint Position Paper on Lead in drinking water - 2013

<sup>1</sup> HSE FAQs on Lead in drinking Water and UK Teratology Information Service advice on Lead in Pregnancy (December 2010)

- *HSE/EPA Consumer Advice Note on Lead - 2014*

Screening of **blood lead levels is not routinely advised**. Blood lead testing in locations where elevated lead levels have been found in drinking water (Galway and Limerick) did not yield any blood lead results above reference values. Blood lead level testing would only be recommended if there is a clinical need to rule out lead as a source of unexplained chronic symptoms in a patient. In these circumstances a specific lead free needle is required which should be obtained from Serology Departments in local hospital laboratories by prior arrangement.

I enclose below a brief summary of relevant information which GPs may find useful in discussing with any concerned patients.

Public Health Physicians in local Public Health Departments are happy to support GPs should they require further information.

If you feel it would be helpful to include an educational session on this issue at your clinical meetings my public health consultant colleagues who have expertise in this area would be happy to facilitate if you get in contact through my office.

A national strategy is currently being developed under the leadership of the Department of Environment (DECLG) to address the issue at national level.

Yours sincerely,



**DR. KEVIN KELLEHER, FFPHM, FFPHMI**  
**ASSISTANT NATIONAL DIRECTOR – HEALTH & WELL BEING, PUBLIC HEALTH**  
**Medical registration number 19719**

## Key facts

**Lead poisoning is extremely rare in Ireland with only 2 cases recorded in Irish hospitals in a recent 4 year period.** Lead poisoning usually occurs in an occupational context or through exposure to unregulated cosmetics, toys, ingestion of lead paint, etc. However as it is now recognised that long term exposure to lower levels may be linked to more subtle health effects at population level (primarily hypertension in adults and IQ in children) the goal of health policy is to reduce lead to as low a level as possible.

Exposure to lead in the environment has reduced considerably over the last 30 years because of EU legislation removing lead from :

- *Petrol*
- *Paint*
- *Water delivery systems*

**A lowering of the legal limit of lead in drinking water has been phased in over time as it was accepted that it would take longer to remove lead from structures such as water pipework than to remove it from petrol.**

**The success of these actions on petrol, paint and water delivery systems is shown by reducing blood levels of lead in children across the EU over the last 20 years.** As young children are the group most exposed to lead (because of their play habits and because they drink more fluids pro-rata ) the reduction of mean blood levels in countries with “before and after “ studies like Sweden and Germany indicates a major change in environmental lead. The only study in Irish children on this scale took place in the Silvermines area between 1999 and 2001 as a result of concerns about former mining waste – despite the local environmental source of lead it was found that mean blood lead levels of 2.7ug/dl in 1999 (which reduced further in each of the subsequent 2 years) were in line with international average values for that period and were lower than Irish values from the mid 1980s.

Although most of the lead reduction measures have now been implemented by public authorities, **there may still be locations with remaining lead water pipework** within people's homes. In particular, premises built up to and including the 1970's may have lead pipework.

If a person lives in such a house and the lead plumbing or lead pipes has not since been replaced, it is possible that there is lead in their drinking water.

**If their water has not been tested, they have been advised that they can take precautionary action:**

- Only use water from the cold water tap in the kitchen for drinking, cooking and making baby formula. If the tap has not been used for many hours, running (flushing) the water before using it for drinking or cooking may lower the level of

lead. However, the only way to know if there is lead in the drinking water, and if flushing lowers it, is by testing it.

**If their water has been tested and is above the 10 µg per litre lead level:**

The steps in the point above should be followed.

- If after running (flushing) the water, the level of lead stays above 10 µg per litre, they should use safe drinking water from some other source. **This is especially important for bottle-fed infants, young children and pregnant women.**

Where individuals have concerns about potential exposure to lead in their drinking water for themselves or their children, the following points may be helpful in assessing the scale of potential risk:

- Health based guidance assumes lifetime exposure to a single source which therefore overestimates the risk for most of the population who use multiple sources of water such as schools, crèches, workplaces. Even if housebound, few people drink 2 litres of water per day from the same source, because milk, juices etc make up a considerable portion of fluid intake.
- Good nutrition, including calcium rich foods, has a protective effects as lead uptake from food or water is reduced through competition with calcium in the gut. Breastfeeding is also protective.
- Blood lead levels reflect lead intake from the previous 28 days only because of the turnover of red blood cells.
- Blood sampling in Ireland from people in areas with elevated lead levels in water has not shown any results outside the normal range to date.
- Average blood lead levels in children across the EU are much lower than those found in the 1980s before laws requiring lead-free petrol and paint were introduced.