FACT SHEET

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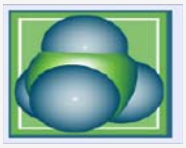
PERCHLORATE

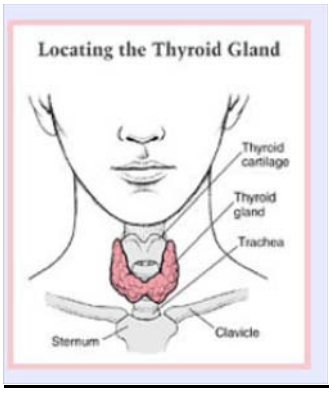


What is Perchlorate?

Perchlorate is an inorganic chemical resulting from the combination of chlorine and oxygen (ClO_4^-). It can occur naturally in the environment, as it is present in certain types of fertilizer and in high salt, arid soils. It is also a man-made pollutant, coming from industrial, military, and community uses. It has been used medically to treat Graves disease, a condition involving hyperactivity of the thyroid gland. However, medical uses of perchlorate have been discontinued. Its major use is as a propellant and explosive agent in munitions used by the military. It can also be an ingredient in blasting for roads and housing developments, and in fireworks displays. These uses of perchlorate have led to its release into the environment.

What are Perchlorate's Health Effects?

Perchlorate is easily absorbed into the body and can interfere with the natural actions of iodine. Iodine is a key ingredient of thyroid hormone, a hormone that regulates our metabolic rate, body temperature, energy level and growth and development. In particular, thyroid hormone is critical for brain development in early life. Perchlorate blocks iodine uptake into the thyroid gland. This can cause a shortage of iodine for the production of thyroid hormone. This is especially a concern in women who become pregnant and have low amounts of iodine in their diet (roughly 30% percent of adult women have low iodine intake). In this case, perchlorate exposure may decrease levels of thyroid hormone that get to the baby and impair brain development.



How May People Become Exposed to Perchlorate?

Recent studies have shown that perchlorate is a common contaminant in the diet, being present in some fruits, vegetables and dairy. This background level of exposure may not be enough to cause a widespread health risk. However, contamination of private or public drinking water wells can add to this background exposure and lead to increased health risks from effects on thyroid hormone levels. Large public water supplies in Connecticut were tested in 2001-2003 with no detections. The detection limit was 4 ug/L, which is higher than which is achievable today. There is very little data on private wells or small public supplies in Connecticut.

What Can Local Health Department's Do About Perchlorate?

Local health departments in Connecticut should be on the lookout for sources of perchlorate contamination in their town. The primary concerns are for drinking water wells (private and small public supplies) that are close to areas where there has been recent blasting or which have been used for fireworks displays. Investigations in Massachusetts have found that groundwater in these areas can contain elevated levels of perchlorate. If such locations exist in your town, contact CTDEP. They will discuss the site history with your office and investigate whether perchlorate contamination is occurring. Any detections of perchlorate will be reviewed by the CT DPH to determine the potential for health effects. There is no federal Maximum Contaminant Level (MCL) for perchlorate. A number of states have set drinking water targets in the 2-6 ug/L range.

Can Water with Perchlorate be Filtered?

Yes, water treatment systems based upon ion exchange can effectively remove perchlorate.

Where Can I Get More Information?

To find out more about perchlorate health effects and sources of exposure contact CT DPH at: 860-509-7740.

To find out about getting an area investigated and groundwater testing, contact CT DEP at: 860-424-3705.

The Massachusetts DEP Website is an excellent resource on perchlorate: http://www.mass.gov/dep/water/drinking/percinfo.htm