

WHAT'S BROKEN WITH POLITICO'S PERCHLORATE STORY?

ON MAY 10, 2017, POLITICO RAN A LENGTHY ARTICLE ON PERCHLORATE AND THE SAFE DRINKING WATER ACT, BUT OMITTED SUBSTANTIAL AMOUNTS OF ACCURATE INFORMATION ON PERCHLORATE SCIENCE AND HUMAN HEALTH.

MAIN ERRORS, AS QUOTED FROM THE PIECE, INCLUDE:

1

"Even in trace amounts, perchlorate can be dangerous."

FACT

No studies, in 60 years of scientific research, show environmental levels of perchlorate have an adverse effect on human health. The scientific database on perchlorate dates back to its use as a medicine, when it was given in doses hundreds of thousands of times higher than amounts generally found in the environment today.

FACT

In 2010, EPA's own Office of the Inspector General stated, among other conclusions, that "EPA's perchlorate reference dose (24.5 ppb) is conservative and protective of public health, and further reducing perchlorate exposure below the reference dose does not effectively lower risk."

2

"While the basic science of perchlorate's effect on the body is clear—it inhibits iodine uptake in the thyroid gland—what this actually means for human health is more complicated. How does the body respond to smaller versus larger amounts of perchlorate? Are some people more susceptible than others to harms?"

FACT

How perchlorate works in the body is not complicated, has been understood for decades, and is not disputed by scientists. The first measurable effect is Iodide Uptake Inhibition (IUI). The National Academy of Sciences in its landmark report, Health Implications of Perchlorate Ingestion, was very clear on this subject. To quote from the report, pages 166-167, NAS emphasizes: "Inhibition of iodide uptake by the thyroid clearly is not an adverse effect; however if it does not occur, there is no progression to adverse effects." The report also states iodine uptake inhibition is the only known effect of perchlorate exposure (p. 165).

FACT

The NAS perchlorate panel determined that there is a "No Observed Effect Level" for perchlorate, below which Iodine Uptake Inhibition does not occur. That level is equivalent to 245 parts per billion (ppb) in drinking water (NAS report, page 170). To provide context, the average level of perchlorate found in water supplies, when it is found, is less than 10 ppb, and more than 99% of samples tested by EPA were less than 6.4 ppb. (Source: U.S. EPA, Unregulated Contaminant Monitoring Rule 1).

FACT

In an abundance of caution, the NAS and EPA added a 10 fold safety factor to the perchlorate reference dose. A reference dose is "An estimate of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime." (US EPA)

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CONTINUES...

3

"Unless you live in California or Massachusetts, you could be drinking (perchlorate) in unhealthy amounts."

FACT

FACT: Perchlorate has no measurable effect on human health at levels below 245 parts per billion in drinking water. According to US EPA data from 2005, the average level of perchlorate found in water supplies, when it was found, was less than 10 ppb, and more than 99% of samples tested by EPA were less than 6.4 ppb. (Source: U.S. EPA, Unregulated Contaminant Monitoring Rule 1). Importantly, a more recent study [Corey, et al. \(2017\)](#) reported that total exposure of perchlorate from food and water sources has decreased since 2005, and confirmed that perchlorate contributes to less than 1 percent of total daily Iodine Uptake Inhibition when a person eats a normal and healthy diet.

4

National Academy of Science Report - "But the approach the panel took was also highly controversial. Several scientists with links to the defense industry won spots on the review panel and the work was paid for, in large part, by perchlorate manufacturers and users."

FACT

The NAS is the gold standard of scientific inquiry. Its findings merit the utmost respect because of the eminence of their panels, the transparency of their procedures, and their history of independence. The NAS select panel on perchlorate comprised 15 world-renowned experts in toxicology, thyroid health and other areas of science directly related to perchlorate. The NAS also implemented a very public and transparent process of public meetings and taking comments in preparing its report.

FACT

Scientific studies must pass muster within well-established review procedures, including peer review. NAS exclusively examined peer-reviewed published research and came to its own conclusions about the quality of that research. It also took the unprecedented and highly conservative step of proposing a Reference Dose based on a no observable effect level—standard EPA practice is to base this dose on a no observable adverse effect level.

FACT

The NAS review was paid for entirely by Federal agencies including EPA, DOE, NASA and other public agencies— perchlorate manufacturers and users provided no funding toward this independent process whatsoever.

5

"For decades, the ingredient in jet fuel..."

FACT

Perchlorate is a salt, made up of four oxygen atoms and one chlorine atom. Because of its high oxygen content, it is added to solid rocket propellant to help it burn in space, where there is no other oxygen source. Perchlorate is neither a jet fuel nor is it used in jet fuel.