



AAP Headquarters

345 Park Blvd
Itasca, IL 60143
Phone: 630/626-6000
Fax: 847/434-8000
E-mail: kidsdocs@aap.org
www.aap.org

Reply to

AAP Washington Office
601 13th St NW, Suite 400N
Washington, DC 20005
Phone: 202/347-8600
E-mail: kids1st@aap.org

Executive Committee

President

Kyle Yasuda, MD, FAAP

President-Elect

Sara H. Goza, MD, FAAP

Immediate Past President

Colleen Kraft, MD, FAAP

Secretary/Treasurer

Anthony D. Johnson, MD, FAAP

CEO/Executive Vice

President (Interim)

Mark Del Monte, JD

Board of Directors

District I

Wendy S. Davis, MD, FAAP
Burlington, VT

District II

Warren M. Seigel, MD, FAAP
Brooklyn, NY

District III

Margaret C. Fisher, MD, FAAP
Long Branch, NJ

District IV

Jane Meschan Foy, MD, FAAP
Winston-Salem, NC

District V

Richard H. Tuck, MD, FAAP
Zanesville, OH

District VI

Dennis M. Cooley, MD, FAAP
Topeka, KS

District VII

Anthony D. Johnson, MD, FAAP
Little Rock, AR

District VIII

Martha C. Middlemist, MD, FAAP
Centennial, CO

District IX

Yasuko Fukuda, MD, FAAP
San Francisco, CA

District X

Lisa A. Cosgrove, MD, FAAP
Merritt Island, FL

August 26, 2019

Andrew Wheeler
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: **Docket No. EPA-HQ-OW-2018-0780**, "National Primary Drinking Water Regulations: Perchlorate"

Dear Administrator Wheeler:

On behalf of the American Academy of Pediatrics (AAP), a non-profit professional organization of 67,000 primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists dedicated to the health, safety, and well-being of infants, children, adolescents, and young adults, I write to offer comments in response to the Proposed Rule " National Primary Drinking Water Regulations: Perchlorate."

The Environmental Protection Agency (EPA) has a critical role to protect vulnerable populations and ensure clean and safe drinking water, and AAP appreciates the opportunity to comment. Due to the well-established harms of perchlorate ingestion for children, AAP opposes raising the maximum contaminant level goal (MCLG) to 56 µg/L and urges the EPA to set the strongest possible public health-based MCLG for perchlorate.

Perchlorate and Child Health

Children are not little adults, and they are uniquely susceptible to the health risks posed by chemicals such as perchlorate. When drinking water or eating food contaminated by perchlorate, children receive higher relative doses than adults because of their lower body weights. Children are also exposed to perchlorate through a variety of other sources, including natural perchlorate in soil ingested by children with developmentally appropriate oral exploratory habits or pica, perchlorate in breast milk, perchlorate passing through the placenta to the fetus during pregnancy, pica habits for soil or clay in some pregnant women, food contact with packaging or wraps that contain perchlorate as an antistatic agent,¹ and other sources. One study found that 9 out of 13 breastfeeding infants were ingesting perchlorate at a level exceeding the reference dose suggested by the National Academy of Sciences.²

Perchlorate causes goiters and damages the nervous system of fetuses and children. Research has identified a well-established causative association between perchlorate ingestion and thyroid hormone disruption.³ It competes with iodide for uptake into the thyroid, interfering with thyroid hormone production.⁴ When fetuses are exposed during pregnancy, perchlorate endangers a child's development. Children born with even mild, subclinical deficiencies in thyroid function may have lower IQs, higher chances of being diagnosed with attention-deficit/hyperactivity disorder (ADHD), and visuospatial difficulties.⁵

Since drinking water is one of many sources of perchlorate exposure, any threshold for exposure set by EPA must take into account the total cumulative dose of perchlorate from all sources for children and pregnant women. Furthermore, developing fetuses and children are exposed to other chemicals that, like perchlorate, can disrupt the thyroid glands normal development and function.⁶ To protect the health of our children, EPA must consider the established health risks of perchlorate exposure, the varied sources or exposure, and the potential cumulative and synergistic effects of thyroid disrupting chemicals.

Maximum Contaminant Levels Should be Health-Based and Science-Based

We are concerned that the modeling EPA is relying on will result in an MCLG that is insufficiently protective of child health. Given the well-established causative association between perchlorate ingestion and thyroid disruption and the particular vulnerability of children and pregnant women, MCLGs must be based in careful, science-based analysis to prevent risks to health. EPA should incorporate all relevant science into formulating the models used for calculating a MCLG.

We are concerned that EPA's current modeling does not account appropriately for the risks perchlorate poses to vulnerable populations. In calculating a point of departure for the MCLG, the EPA should:

- 1) rely on higher, and more protective, uncertainty factors to account for differences in fetal risks for developmental adverse effects later in pregnancy, not just during the first trimester;
- 2) incorporate additional existing research to identify the point of departure, rather than basing the analysis on one study, as the proposed rule does;
- 3) incorporate consideration of additional neurodevelopmental toxic risks due to perchlorate into its MCLG calculations, rather than the single endpoint of IQ. Other end-points of thyroid dysfunction in children may include adverse behavior and learning effects that are independent of, and not reflected by, changes in IQ, and
- 4) carefully review and incorporate either the extant scientific literature addressing these additional endpoints or include an additional uncertainty factor to account for this variation in health outcomes.

The EPA should set MCLGs that are health-based, accounting for the totality of evidence of potential harm to protect public health. AAP is concerned that the model used in this proposal underestimates the health risks of perchlorate exposure on vulnerable populations and sets a precedent that does not adequately protect public health. Many states, such as Iowa, Massachusetts, and Nevada, have mandated maximum contaminant levels for perchlorate that are many times lower than the proposed 56 µg/L because of a more protective, health-based assessment of the potential harm of perchlorate exposure on vulnerable populations.

Of the EPA's alternative proposals, AAP is particularly concerned that EPA is considering withdrawing its 2011 determination to regulate perchlorate, relinquishing national oversight over a chemical with well-established health risks in drinking water. This would set a precedent inconsistent with EPA's stated mission to protect public health. AAP urges the EPA to set a stronger MCLG for perchlorate that is based on all available evidence of potential harms to protect public health. A lower MCLG will allow EPA to generate reporting data that more accurately portrays the populations at risk and to better protect vulnerable populations.

Conclusion

Thank you again for providing this opportunity to comment on EPA's proposed maximum contaminant level goal for perchlorate in drinking water. We look forward to working with you to ensure that children are protected from the harms of perchlorate exposure through drinking water and other sources. If we can be of further assistance, please contact Zach Laris at zlaris@aap.org.

Sincerely,



Kyle E. Yasuda, MD, FAAP
President
KEY/zml

¹ US Food and Drug Administration. Filing of food additive petition. Available at: www.gpo.gov/fdsys/pkg/FR-2015-03-16/html/2015-05937.htm. Accessed August 19, 2019.

² Dasgupta PK, Kirk AB, Dyke JV, Ohira S. Intake of iodine and perchlorate and excretion in human milk. *Environ Sci Technol*. 2008;42(21):8115-8121.

³ Centers for Disease Control and Prevention Agency for Toxic Substances and Disease Registry. Public health statement for perchlorates. 2008. Available at: www.atsdr.cdc.gov/phs/phs.asp?id=892&tid=181. Accessed August 19, 2019.

⁴ Ginsburg GL, Hattis DB, Zoeller RT, Rice DC. Evaluation of the U.S. EPA/OSWER preliminary remediation goal for perchlorate in groundwater: focus on exposure to nursing infants. *Environ Health Perspect*. 2007;115(3):361-9.

⁵ Haddow J, Palomaki G, Allan W, et al. Maternal thyroid deficiency during pregnancy and subsequent neuropsychological development of the child. *New Engl J Med*. 1999;341(8):549-555.

⁶ Shimizu R, Yamaguchi M, Uramaru N, et al. Structure-activity relationships of 44 halogenated compounds for iodotyrosine deiodinase-inhibitory activity. *Toxicology*. 2013;314(1):22-29pmid:24012475