# CleanEarth4Kids.org



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## RE: Support MCLs for PFHxS and Arsenic in Drinking Water

CleanEarth4Kids.org supports setting maximum contaminant levels (MCLs) in drinking water for Perfluorohexane Sulfonic Acid (PFHxS) and arsenic.

These toxins have no place in our water. Water is life!

### Perfluorohexane Sulfonic Acid (PFHxS) is PFAS

<u>PFHxS</u> (Perfluorohexane sulfonic acid) belongs to a group of chemicals known as PFAS, which has been linked to a range of health problems including effects on the liver, thyroid, and immune system.<sup>1</sup>

#### **PFAS Are Toxic**

PFAS (perfluoroalkyl and polyfluoroalkyl substances) are a class of over <u>15,000</u> synthetic (man-made) chemicals found in many products.<sup>2,3</sup>

According to the <u>CDC</u>,<sup>4</sup> <u>EPA</u>,<sup>5</sup> and the <u>European Union Environment Agency</u>, PFAS are linked to low birth weight, thyroid disease, increased cholesterol, liver damage, kidney cancer, and testicular cancer.<sup>6</sup> They are also linked to <u>liver cancer</u>,<sup>7</sup> <u>diabetes</u>,<sup>8</sup> <u>endocrine disruption</u>, and other <u>serious health problems</u>.<sup>9</sup>

PFAS are known as "forever chemicals" as they are extremely strong and <u>don't break</u> <u>down in the environment or our bodies</u>. Once in the body, they <u>accumulate</u> in the kidneys and liver with a biological half-life of 3-8 years. PFAS are found in the blood of <u>97% of Americans</u> and even in <u>umbilical cords</u>. 12,13

It has been evident <u>since the 1960s</u> that PFAS are dangerous to human health.<sup>14</sup> <u>Exposure to PFAS</u> can pose significant health risks to humans, such as increased cholesterol levels, increased risk of thyroid disease, lower bone density, and kidney and

<sup>&</sup>lt;sup>1</sup> https://www.atsdr.cdc.gov/pfas/about/health-effects.html

<sup>&</sup>lt;sup>2</sup> https://comptox.epa.gov/dashboard/chemical-lists/pfasmaster

<sup>&</sup>lt;sup>3</sup> https://www.cdc.gov/biomonitoring/PFAS FactSheet.html

<sup>&</sup>lt;sup>4</sup> https://www.atsdr.cdc.gov/pfas/health-effects/index.html

<sup>&</sup>lt;sup>5</sup> https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas

<sup>6</sup> https://www.eea.europa.eu/publications/emerging-chemical-risks-in-europe

<sup>&</sup>lt;sup>7</sup> https://www.insider.com/study-confirms-link-between-forever-chemicals-and-liver-cancer-risk-2022-8

<sup>8</sup> https://pubmed.ncbi.nlm.nih.gov/35970987/

<sup>9</sup> https://pubmed.ncbi.nlm.nih.gov/32476019

<sup>&</sup>lt;sup>10</sup> https://www.vox.com/2022/8/25/23318667/pfas-forever-chemicals-safety-drinking-water

<sup>11</sup> https://www.niehs.nih.gov/health/topics/agents/pfc/index.cfm

<sup>12</sup> https://www.atsdr.cdc.gov/pfas/health-effects/us-population.html

<sup>13</sup> https://www.theguardian.com/environment/2022/forever-chemicals-found-umbilical-cord-blood-samples

<sup>14</sup> https://www.ewg.org/research/decades-polluters-knew-pfas-chemicals-were-dangerous-hid-risks-public

testicular cancers. 15

PFAS significantly <u>reduces fertility</u> in women.<sup>16</sup> Exposure to <u>PFAS during pregnancy</u> has been linked to an increase in preeclampsia, gestational diabetes, fetal growth restriction, and childhood obesity.<sup>17</sup> Prenatal exposure to perfluorononanoic acid (a type of PFAS) is associated with an <u>increased risk of kidney cancer</u> in children.<sup>18</sup> <u>Children are more vulnerable</u> to the toxic effects of PFAS due to their smaller size and still-developing immune and nervous systems, and becoming exposed can greatly impact their physical and neurological health.<sup>19</sup> Early PFAS exposure in children has been linked to ADHD, increased risk of <u>cancer</u>, immune system damage, and reproductive harm.<sup>20</sup>

PFAS <u>bioaccumulate</u> in our bodies, making the risk of cancers and other health problems much more likely as we get older.<sup>21</sup>

#### PFAS in Drinking Water

PFAS are <u>difficult to remove</u> from drinking water using conventional treatment.<sup>22</sup> This causes PFAS to accumulate in our waterways and drinking water, leading to <u>crop and food system contamination</u>.<sup>23</sup> PFAS have been <u>detected in drinking water</u> and water sources throughout <u>the United States</u>.<sup>24,25</sup> PFAS have been found in <u>rain</u>, even in remote areas.<sup>26</sup>

#### **Arsenic Harms Health**

Arsenic is classified as a <u>human carcinogen</u> by IARC, the National Toxicology Program, and the EPA.<sup>27</sup> Arsenic exposure can <u>cause</u> lung, bladder, skin, liver, prostate, kidney, and lymphatic cancer.<sup>28</sup> Arsenic is also listed as a potential <u>endocrine disruptor</u> by the Endocrine Disruption Exchange.<sup>29</sup> Arsenic is listed under California's Proposition 65 for causing <u>cancer</u>, <u>birth defects</u>, and <u>reproductive harm</u>.<sup>30</sup>

<u>Arsenic</u> causes serious health outcomes.<sup>31</sup> In children, <u>arsenic exposure</u> can <u>lower IQ</u>, <u>learning</u>, and <u>memory</u>, <u>cause behavior and motion issues</u>, <u>impair brain development</u>,

<sup>15</sup> https://dph.illinois.gov/topics-services/environmental-health-protection/private-water/fact-sheets/pfas

<sup>16</sup> https://www.mountsinai.org/about/newsroom/2023/exposure-to-chemicals-found-in-everyday-products

<sup>17</sup> https://pubmed.ncbi.nlm.nih.gov/32812200/

<sup>18</sup> https://pubmed.ncbi.nlm.nih.gov/33387879/

<sup>19</sup> https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas

<sup>&</sup>lt;sup>20</sup> https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380927/

<sup>&</sup>lt;sup>21</sup> https://www.mdpi.com/2305-6304/10/2/44

<sup>&</sup>lt;sup>22</sup> https://www.aaas.org/epi-center/pfas

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8657007/

<sup>&</sup>lt;sup>24</sup> https://www.gao.gov/products/gao-22-105135

<sup>&</sup>lt;sup>25</sup> https://www.theguardian.com/us-news/2022/jul/06/us-drinking-water-PFAS-toxic-forever-chemicals-epa

<sup>&</sup>lt;sup>26</sup> https://www.ctvnews.ca/climate-and-environment/pfas-levels-in-rainwater-have-made-it-unsafe-to-drink

<sup>27</sup> https://www.cancer.org/cancer/risk-prevention/chemicals/arsenic.html

<sup>28</sup> https://www.cdc.gov/niosh/npg/npgd0038.html

<sup>&</sup>lt;sup>29</sup> https://endocrinedisruption.org/popup-chemical-details?chemid=389

<sup>30</sup> https://www.p65warnings.ca.gov/fact-sheets/arsenic-inorganic

<sup>31</sup> https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4026128/

# and compromise the immune system. 32,33

Arsenic exposure <u>affects multiple organ systems</u>, including the gastrointestinal, hematological, hepatic, immunologic, neurological, pulmonary, and renal systems.<sup>34</sup>

In addition, arsenic also contributes to the <u>onset</u> of cardiovascular disease, pulmonary disease, diabetes, and developmental effects, which are significantly harmful during the early stages of child development.<sup>35</sup>

#### **Arsenic In Water**

Arsenic is a toxic substance that can enter drinking water through natural deposits in the earth or from industrial pollution. It does not have a taste or smell. Therefore, people may not realize their water is contaminated. Long-term exposure to arsenic in water can lead to serious health problems, including cancer, heart disease, and developmental delays in children. <sup>36</sup>

#### Stop PFAS and Arsenic in Water

CleanEarth4Kids.org supports OEHHA setting maximum contaminant levels (MCLs) in drinking water for Perfluorohexane Sulfonic Acid (PFHxS) and arsenic.

Our water must be protected from toxins. Water is life!

Our children's health and future depend on the actions we take today!

Sincerely,

Suzanne Hume

Educational Director and Founder

S @ Clean Earth 4 Kids.org

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<sup>32</sup> https://sites.dartmouth.edu/arsenicandvou/arsenic-and-children

<sup>33</sup> https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4026128/

https://www.frontiersin.org/articles/10.3389/fnut.2022.919913/full

<sup>35</sup> https://www.who.int/news-room/fact-sheets/detail/arsenic

<sup>36</sup> https://www.who.int/news-room/fact-sheets/detail/arsenic