## **Arsenic in Drinking Water**

http://www.nrdc.org/water/drinking/qarsenic.asp

1. What are the possible health effects of arsenic in drinking water?

According to a 1999 study by the National Academy of Sciences, arsenic in drinking water causes bladder, lung and skin cancer, and may cause kidney and liver cancer. The study also found that arsenic harms the central and peripheral nervous systems, as well as heart and blood vessels, and causes serious skin problems. It also may cause birth defects and reproductive problems.

2. Does it occur often?

In a February 2000 report, NRDC analyzed data compiled by the U.S. Environmental Protection Agency on arsenic in drinking water in 25 states. Our most conservative estimates based on the data indicated that more than 34 million Americans were drinking tap water supplied by systems containing average levels of arsenic that posed unacceptable cancer risks. We consider it likely that as many as 56 million people in those 25 states were drinking water with arsenic at unsafe levels -- and that's just the 25 states that reported arsenic information to the EPA.

3. How can I find out whether my drinking water contains arsenic?

First, check the chart, where we've analyzed and summarized data reported to the EPA over an 18-year period. (If your state is one of the 25 that failed to report data to the EPA, it won't appear in the chart -- in that case, just take the next step below.)

Then, contact your local water utility -- it is now required by law to provide a report on all contaminants and toxins found in your local drinking water. If you're not sure who provides your water, try looking in the blue pages in your phone book under "Water" or call your state drinking water program. (You can get the state's number through EPA's drinking water hotline at 1-800-426-4791.) The report from your water utility will contain the most recent test results; however, it won't include averaging over a long period (see the next answer for why averaging matters).

4. How can I interpret the consequences of the level of arsenic in my drinking water?

While NRDC can't assess the specific risks for you and your family, we encourage you to learn all you can.

Drinking water provided by most water utility companies meets or falls below the current national standard for arsenic, which is 10 parts per billion (ppb). However, some water systems may exceed this level. While arsenic levels may fluctuate over time, what is most significant from the standpoint of cancer risk is long-term exposure. For water systems in the 25 states that reported arsenic data to the EPA, we have calculated two estimates of average long-term levels: one is a very conservative estimate, the other our best estimate, based on what we believe to be the most reasonable analytical techniques (details on how we arrived at the estimates are included with the charts).

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The table below shows the lifetime risks of dying of cancer from arsenic in tap water, based on the National Academy of Sciences' 1999 risk estimates (see our report for details on how we calculated total cancer risk).

Arsenic Level in Tap Water. Approximate Total Cancer Risk (in parts per billion, or ppb) (assuming 2 liters consumed/day)

0.5 ppb	1 in 10,000
1 ppb	1 in 5,000
3 ppb	1 in 1,667
4 ppb	1 in 1,250
5 ppb	1 in 1,000
10 ppb	1 in 500
20 ppb	1 in 250
25 ppb	1 in 200
50 ppb	1 in 100

5. How does arsenic get into water supplies?

Most arsenic enters water supplies either from natural deposits in the earth or from industrial and agricultural pollution. Arsenic is a natural element of the earth's crust. It is used in industry and agriculture, and for other purposes. It also is a byproduct of copper smelting, mining and coal burning. U.S. industries release thousands of pounds of arsenic into the environment every year.

6. Can water systems reduce arsenic levels in drinking water?

Yes. Some systems may be able to reduce arsenic levels by cleaning up or changing the source of their water. For example, some arsenic contamination results from leaching from old waste dumps, mines or tailings, or from past use of arsenic-containing pesticides. In other cases, arsenic in drinking water is caused by continuing industrial pollution. Government officials, water system managers and citizens can join forces to ensure that polluters are held accountable for cleaning up contaminated sites and reducing or eliminating new arsenic pollution. In addition, readily available treatments can remove arsenic from tap water.

7. Can I buy a filter that will remove arsenic from my water?

Yes. You should purchase filters certified by NSF International (1-800-673-8010) to remove arsenic (such as water distillation systems). While such certification is not necessarily a guarantee of safety, it is better than no certification at all. It is critically important that all

filters be maintained and replaced at least as often as recommended by the manufacturer; otherwise they might make the problem worse.

8. I drink bottled water -- do I have to worry about arsenic?

Bottled water is not necessarily any safer than tap water. Often, it is nothing more than tap water that may or may not have been filtered. For more on bottled water, see the findings of NRDC's 1999 report Bottled Water: Pure Drink or Pure Hype?

Based on ARSENIC AND OLD LAWS, a February 2000 report by the Natural Resources Defense Council.

last revised 2/12/2009