The recent lead contamination problem in Flint, Mich., was not the first time there has been a severe public health issue caused by a tainted water supply. As recently as February 2016, officials in Ithaca, N.Y., distributed bottled water to children after lead levels that were hundreds of times higher than recommended were detected in drinking water in a local school. Similar cases have come to light in Portland, Ore., Newark, N.J., and in Baltimore, Md.

As in Flint, many of the problems in these other cases were due to the corrosion of pipes that carried water to people’s homes, and, as in Flint, among the main culprits were copper and lead. But the water we drink everyday already contains small amounts of lead and copper (along with other metals), so how do we know when their amounts are too high to make water unsafe to drink?

Tiny numbers

*What does 0.015 mg/L really mean?*
Because 1 L of water has a mass of 1,000 g or 1 million milligrams, then 1 mg of a contaminant in 1 L of water is equivalent to 1 part per million (ppm). Because 0.015 mg/L is 1,000 times smaller than 15 mg/L, then 0.015 mg/L is equal to 15 parts per billion (ppb). To give you an idea of how small that amount is, 15 ppb is equivalent to approximately 45 seconds in a whole century!

The World Health Organization (WHO) says, “There is no known level of lead exposure that is considered safe.” In addition, the action level for lead was never based on any medical research; rather it was what water suppliers considered to be a manageable number when the LCR was issued in 1991.

Investigating further

Sometimes, the WHO and EPA recommendations vary (as is the case with lead), but in other cases, there is more agreement. For example, in the case of arsenic, 0.010 mg/L (10 ppb) is considered an acceptable level by both organizations.

So what can you do? **Ask the company that supplies your drinking water for its annual water quality report.** It will list all kinds of chemicals that are found in your water supply, along with their concentrations. Then, find out if some of these chemicals exceed the WHO or EPA recommendations. The number of chemicals that are in drinking water might surprise you and, hopefully, they will all be below the levels recommended by WHO or EPA.