What the Government Does Not Want You to Know About Water Safety

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There has been a rise in incidents and awareness about the condition of our water systems and the quality of drinking water. There have been outbreaks of disease, poisoning and even long term hormonal impacts on our body's also known as endocrine system disruptors (chemicals that affect your organs and interfere with your hormones). One only needs to look towards the most recent revelations of an entire town of 100,000 citizens in Flint, Michigan to wonder, “is my drinking water really safe?”

According to the EPA’s Drinking Water and Ground Water Statistics, there are more than 155,693 public water systems in the United States, with over 286 million Americans accessing those systems for their water. This means that 82% of 348 million people that access their water through water treatment plants or some type of water facility. The remaining population will draw from a ground or open water source such as a well.

Both public water sources and ground or open sources of water are subject to contamination or poisoning. What is alarming, is how testing and treatment are being neglected by both the government and water treatment plants by not testing for certain chemicals, drugs, hormones or other contaminates that end up in our drinking water.

We are also affected by the eroding infrastructure that wastes billions of gallons of water a day in leaks across the country and contributing to the lead poisoning of Americans. The head of the Health and Environment program at the Natural Resources Defense Council, Erik D. Olson, said it best: “You think our roads and bridges aren’t being fixed? The stuff underground is just totally ignored. We’re mostly living off the investment of our parents and grandparents for our drinking water supply.”

Just How Contaminated Is Our Water?

The water in the United States is fairly clean when compared to other countries who suffer disease, sickness or death from pathogens and bacteria that can easily be filtered out. The underlying problem we face as a country is what is not being treated in our drinking water.

It is a common misnomer that treated water means the complete elimination of lead, chemicals, or hormones that lead to disease and sickness. Most water is treated to “safe levels of consumption” and often areas are tested by sampling which is not always accurate. Not only can the sample areas not fully coincide with a true indication of water quality but regulations protecting you and your family are not as strict as you would expect.

The effects from lack of oversight or not up to date testing standards of our drinking water has had a negative impact on the overall health and well being of our society. For instance the *Washington Post* reported on an investigation of high levels of lead in drinking water that 274 U.S. utilities provided to 11.5 million people from 2000–2004.

Good Housekeeping used a home inspection company to test drinking water in 8 metropolitan areas and reported in its 1 February 2005 issue that about 12% of the homes sampled overall had lead levels that exceeded government standards even though all of the cities were in compliance with the LCR (EPA’s Lead Copper Regulations).

Water contamination typically happens through natural or human causes. Untreated wastewater, pesticides, runoff, industrial refuse and other pollutants get into our drinking water and freshwater systems. Common sickness, conditions and disease such as cancer and child developmental issues can be easily prevented through proper water treatment procedures and water filtration.

Who can forget Erin Brockovich and the case against PG&E?

Just How Bad Are is Lead and Other Contaminates in Drinking Water?

You may have recently heard of the Flint, MI Water Crisis, where a complete breakdown of proper water testing and water treatment procedures allowed for contamination and lead poisoning from both the water source and the deteriorating infrastructure. The residents of Flint have developed a series of symptoms such as skin lesions, hair loss, high levels of lead in the blood, vision loss, memory loss, depression, anxiety, Lou Gehrig's Disease as well as developmental challenges in children like learning disabilities and lower IQ.

An Associated Investigative Report found an array of pharmaceuticals, anti-convulsants, mood stabilizers and sex hormones in the drinking water supplies of at least 41 million Americans.

They discovered that pharmaceutical and street drugs have been detected in the drinking water supplies of 24 major metropolitan areas from the West to the East Coast. Scientists are worried of long-term health consequences but do not have enough reliable data or research.

Other contaminants found in drinking water are either manmade or naturally occurring. Some contaminants are organisms that include pathogens like bacteria, viruses, and parasites such as microscopic protozoa and worms. These living organisms can be spread by human and animal waste. Good sanitation and hygiene practices can help to stop the spread of these organisms. Toxins such as heavy or poisonous metals like arsenic may naturally occur at unacceptable levels.

Heavy metals like lead and mercury as well as insecticides and fertilizers from man-made byproducts have also been found in water.

Since water from your tap usually comes from a well or public water system it is not guaranteed to be free of harmful chemicals and contaminates. Unfiltered tap and bottled water may contain a large amount of harmful substances, such as:

- Arsenic
- Lead
- Pharmaceutical drugs
- Recreational drugs
- Chlorine
- Fluoride
- Rocket fuel
- Radiation
- Birth Control Pills

Water and sewage treatment plants do not test or treat for all known chemicals, pharmaceutical drugs, street drugs or other contaminants. There have also been facilities and agencies investigated for neglect, improper testing, or failure to properly treat the drinking water that flows to residents.

Do not wait for anyone else to ensure your drinking water is safe, take steps today and use a ceramic water filter to fight lead, and remove harmful bacteria, pathogens and protozoa!

A few of the cities that have had a serious or deadly water crisis in the last 15 years.

Flint, MI
Sebring, OH
Durham, NC

Greenville, NC
Washington, DC

A Closer Look at the Consumption of Pharmaceuticals in our Water

One of the most recent threats to drinking water safety are the substances that scientists and officials are not studying, testing or regulating. The latest list of contaminated substances from the EPA includes hormones such as estrogen from birth-control pills, other pharmaceutical and street drugs such as opiates, antidepressants, cocaine and heroine. The Seattle Times has reported that juvenile chinook and salmon tested positive from such drugs by tainted wastewater discharge off of Puget Sound.

These same chemicals contaminate the drinking water flowing to residents homes. Jim Meador, an environmental toxicologist at NOAA's Northwest Fisheries Science Center in Seattle stated the levels levels are probably too low in the water to be active in humans but there is not enough established science. It is also important to note that wastewater pollutants are called "chemicals of emerging concern" since little is known about them.

However, members of the AP National Investigative Team reviewed a collection of scientific data, federal drinking water databases and surveyed water treatment plants nationally with other scientists and officials.

Here are some of the test results obtained by this investigation:

- Testing in Philadelphia led officials to discovering 56 pharmaceuticals or byproducts in treated drinking water_Anti-epileptic and anti-anxiety medications were detected in a portion of the treated drinking water for 18.5 million people in Southern California.

- In Northern New Jersey, U.S. Geological Survey researchers analyzed a Passaic Valley Water Commission drinking water treatment plant, and found a metabolized angina medicine and a mood-stabilizer in the drinking water. The water treatment plant which 850,000 people.
- San Francisco's drinking water tested positive for a sex hormone.
- The Washington, D.C., and surrounding areas drinking water tested positive for six pharmaceuticals.
- Tucson, AZ discovered water supplies had three medications, including an antibiotic.

Ground source contamination is another concern for public water systems that use them for a source of drinking water and for those who access their water from a well. Many water systems draw from rivers loaded with nitrates, the product of fertilizer runoff and sewage overflow. The very sewage overflow that may be infected with the drugs and chemicals found in wastewater. It is best to keep a water filter in your home to rid of these contaminates.

What Do Experts Have to Say About Health Effects of Drugs in our Water?

Expert testimony given to the House of Representatives by Linda S. Birnbaum Ph.D., DABT, ATS, Director of National Institute of Environmental Health Sciences & National Institutes of Health, Director, National Toxicology Program with Department of Human Services focusing on endocrine disruptors (chemicals or hormones that can interfere with the endocrine system) in mammals. Studies have shown it to cause birth defects, tumors, developmental and hormonal disorders and conditions.

Linda S. Birnbaum's statement was published on February 25, 2010, titled Endocrine Disrupting Chemicals in Drinking Water: Risks to Human Health and the Environment and states this about the exposure to endocrine disruption:

- "First, the effect of low doses. Normal endocrine signaling involves very small changes in hormone levels, yet these changes can have significant biological effects. That means subtle disruptions of endocrine signaling is a plausible mechanism by which chemical exposures at low doses can have effects on the body."
- "Second, the wide range of effects. Endocrine signals govern virtually every organ and process in the body. That means that when outside chemicals interfere with those systems, the effects can be seen in many different diseases and conditions – some of which we are just learning to recognize as the result of endocrine disruption."
- "Third, the persistence of effects. We are finding that the effects of exposure to endocrine disruptors can be observed long after the actual exposure has ceased. This is especially true for growth and development, processes that are very sensitive to endocrine regulation. The question of how these kinds of latent effects occur is an active area of investigation."
- "Fourth, the ubiquity of exposure. Both naturally occurring and manmade substances can be endocrine disruptors. Some, e.g., arsenic and agricultural chemicals, are ubiquitous in the environment. In addition to the growing use of hormonally-active pharmaceuticals that pass through the bodies of those taking them and end up in

> water treatment systems and surface waters, many of the chemicals that are being found to have endocrine effects are components of a wide range of consumer products, including some water bottles, cosmetics, sunscreens, and other personal care products. Substances applied to the skin can be directly absorbed but also end up getting washed off our bodies and into our water systems. As a result, chemicals with endocrine disrupting activity are widely dispersed in our environment, often at levels plausibly associated with biological effects; exposure to humans is widespread."

So it is not just bacteria and pathogens we need to be concerned with, but also chemicals and drugs not treated by our water treatment plants! Do we really want our water sources to be contaminated with all of these drugs and chemicals? How can we better protect them?

Remove pharmaceutical drugs and other contaminates from your drinking water with reverse osmosis and ultraviolet light.

Infrastructure in Peril

A second factor in water unsafe drinking water is the age of our infrastructure. It is often aging, poorly maintained and susceptible to main breaks and leaks. Damage to these systems may be re-contaminated.

About 1.7 trillion gallons of water are wasted every year due to lack of pipe replacement and broken and leaky pipes. Many cities have not changed regulations addressing the lead found in water from corroding pipes. Typically, a phosphate corrosion inhibitor is added to keep the pipes from deteriorating and leaching lead into the water citizens consume. Flint,

Michigan's lead poisoning was significantly impacted by the absence of the corrosion chemical in the lead pipes.
The EPA's 2000 Community Water System Survey shows that 30% of the pipes were between 40 and 80 years old and about 10 percent of the pipes were more than 80 years old. That is a significant amount of old infrastructure in need of replacement.

The American Society of Civil Engineers (ASCE), released a report on America's Infrastructure in 2013. The report details that much of our drinking water infrastructure is nearing the end of its useful life.

So what will the cost be for American taxpayers to restore existing water systems? Per the American Water Works Association, fixing and expanding current water systems for a growing population will cost about 1 trillion dollars over the next 25 years. This will come at a cost to taxpayers primarily through their water bills. It is estimated that a typical family's water bills could triple.

Bottle Water and the Perception of Safe Drinking Water

Facts:

- 20% of our drinking water is purchased and only 75% of the purchased water is treated.
- Almost half of all bottled water is municipal tap water.
- 9 out of 10 of the best selling bottled water brands don't disclose information about one of the following: the source of the water, contamination testing, and/or how it is purified.

Bottled water regulation on the federal level is not mandated the same as tap water. It is treated as a food in the US and it subject to rules and regulations from the Food and Drug Administration (FDA). Subject to the type of contaminate being tested for, the FDA may require testing once a week, once a year or once every four years. Depending on how some

bottled water is labeled it may be exempted from FDA regulation. An estimated 60-70% of bottled water is not covered by FDA regulations due to the labeling rule. Bottled water doesn't need to meet the high standards that city tap water must meet in terms of water treatment, contamination, and other testing.

Tap water is regulated by the Environmental Protection Agency (EPA) and they are much more strict than those of the FDA's rules and regulations for bottled water. The EPA requires testing several times a day.

NRDC reports that out of 1,000 bottles of water 22% of the brands tested contained chemicals above the state health limits. Long term consumption of these contaminants could lead to cancer or other health issues especially of those with weakened immune systems.

One study found phthalates, they disrupt testosterone and other hormones, that leached into bottled water over time. There are regulatory standards limiting phthalates in tap water but not in bottled water. Travel with your own water bottle filter to always ensure you have safe drinking water.

What is the Lead Copper Rule and Why You Should Be Concerned

1991 Lead and Copper Rule (LCR)—requires water companies to sample lead levels in home tap water. Private wells that serve day care centers, schools, or commercial enterprises also are covered under the rule. Water utilities must conduct sampling in a relatively small number of homes at high risk for elevated lead levels—for example, homes known to have lead service lines or lead solder. The size of the water system determines how many samples must be collected in each sampling period. For a major metropolis this could be 100 homes. For a system serving 10,000 homes or less, 40 samples must be collected. The sampling interval can vary from 6 months to 3 years; systems with good compliance sample less often.

The EPA Recommends taking samples from 100 households in a major metropolitan area and 40 for areas of 10,000 homes or less. Samples are taken anywhere from 6 months to 3 years apart. According to EPA standards, it is allowable to have up to 10% of the samples taken to have lead exceeding 15 parts per billion. Action is only taken when over 10% of samples exceed the hazardous level of 15 ppb. This gives false security to residents who are under the assumption that tap water is always safe to drink.

Keep an emergency portable water filter handy that can filter more water than traditional filters and is both a carbon and ceramic filter. Ceramic filters remove lead, pathogens and bacteria from water. Activated carbon filters can remove pathogens and bacteria while NSF certified carbon filters can remove lead.

Resources:

A list of resources used to create this report can be found below. This report is for informational purposes only and Survival Digest is not making any claims on behalf the party or product.

National Academy of Sciences
https://www.koshland-science-museum.org/water/html/en/Overview/Why-Is-There-a-Problem.html

NRDC
https://www.nrdc.org/stories/truth-about-tap

Natural Society
http://naturalsociety.com/the-bottled-water-deception/#ixzz45oxOALAk

American Water Works Association
http://www.awwa.org/Portals/0/files/legreg/documents/BuriedNoLonger.pdf

American Society of Civil Engineers
http://www.infrastructurereportcard.org/water-infrastructure/

York Times
http://www.nytimes.com/2016/02/09/us/regulatory-gaps-leave-unsafe-lead-levels-in-water-nationwide.html?_r=0

Washington Post
http://www.washingtonpost.com/wp-dyn/content/article/2010/12/01/AR2010120107286.html

Washington Post High levels of Lead
http://www.washingtonpost.com/wp-dyn/articles/A7094-2004Oct4.html

Linda S. Birnbaum, Ph.D., DABT, ATS, Director National Institute of Environmental Health Sciences, National Institutes of Health, Director, National Toxicology Program, Department of Health and Human Services (Statement) on Endocrine Disrupting Chemicals in Drinking Water: Risks to Human Health and the Environment before the Committee on Energy and Commerce, Subcommittee on Energy and Environment, United States House of Representatives retrieved from online website:
http://www.hhs.gov/asl/testify/2010/02/t20100225a.html

HHS - Endocrine Disrupting Chemicals in Drinking Water
http://www.hhs.gov/asl/testify/2010/02/t20100225a.html

EPA List of Contaminated Substances
https://www.epa.gov/ccl/contaminant-candidate-list-3-ccl-3

EPA Community Water System Survey 2000
http://nepis.epa.gov/Exe/ZyNET.exe/20001ZK5.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000005%5C20001ZK5.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p%7Cf&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL

EPA Drinking Water and Groundwater Statistics 2007
http://nepis.epa.gov/Exe/ZyPDF.cgi/P100N2VG.PDF?Dockey=P100N2VG.PDF

AP Investigative Report - Pharmawater 1
http://hosted.ap.org/specials/interactives/pharmawater_site/day1_01.html

Some Cities with Water Crisis

Flint, MI
http://www.reuters.com/article/us-michigan-water-idUSKCN0WS00Z

Sebring, OH
http://www.nytimes.com/2016/01/27/us/lead-in-ohio-villages-water-went-uncurbed-for-months-state-says.html?_r=0

Durham, NC
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2799485/

Greenville, NC
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2799485/
Washington, DC
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2799485/