



# **Information You NEED to Know About Your Drinking Water**

- Take the test, what do your results mean?
- Compare your results to EPA standards
- How to combat any issues you have



FIRST OF ALL, **thank you so much for choosing one of our drinking water test strips / kits.** We hope you get the results you were looking for and that this product and ebook gives you peace of mind about your drinking water!

As with many businesses, product reviews are very important for us in spreading the word about us and our products. If you have a minute we would love it if you could [please leave us a review on Amazon](#). Thank you so much in advance for your support! – If you have any other questions or concerns, you can contact us at [support@jnwdirect.com](mailto:support@jnwdirect.com).

\*\*The information provided in this e book was compiled from various sources on the epa.gov website (epa is the United States Environmental Protection Agency and it sets the standards for drinking water quality through the safe drinking water act). Other websites used. The sources will be listed at the end if you want to do further reading.

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## **How to use the test strips and important notes:**

### **Test Water:**

Dip a strip into water for 2 seconds and then remove for best results.

Carefully shake off any excess fluid.

Compare against the color chart on the bottle (boxed colors = ideal range).

Then take any necessary action to your water supply.

### **Results:**

See next page for table.

### **Best practices:**

Follow care instructions below to make sure these last. Follow instructions step by step. Read after 60 seconds. Do not leave for longer periods as the reagents turn a different color when drying (60 seconds is ideal).

### **Test strips are very sensitive so please store them properly to ensure their long term accuracy by:**

- Never removing the desiccant packet
- Keeping the strips away from light and moisture
- Keeping the cap on tight between each use
- Storing well sealed in a cool dry place (especially not in bathroom or by water source)

If you believe the test strips to be defective or they have all turned one color please contact us and we will help you fix the problem.

**Correct Levels (according to epa.gov)**

<b>Test</b>	<b>Correct range (if applicable)</b>	<b>Max recommended</b>
Iron	0 to 0.3 ppm	0.3 ppm
Copper	0 to 1 ppm	1.3 ppm
Lead	0 to 15 ppb / 0 to 0.015 ppm	15 ppb / 0.015 ppm
Fluoride	0 to 2 ppm	2 ppm
Mercury	0 to 0.002 ppm	0.002 ppm
pH	6.5 to 8.5	-
Total Alkalinity	N/A	N/A
Total Hardness	0-60 ppm 61-120 ppm 121-180 ppm 180+	Soft Slightly Hard Hard Very Hard
Nitrate	0 to 10 ppm	10 ppm
Nitrite	0 to 1 ppm	1 ppm
Free / Residual Chlorine	0 to 4 ppm	4 ppm
Total Chlorine	0 to 4 ppm	4 ppm
Aluminium	0 to 0.2 ppm	0.2 ppm
Zinc	0 to 5 ppm	5 ppm
Sulfate	0 to 250 ppm	250 ppm

## Iron:

**Overall meaning** – Iron is a chemical element represented by the symbol Fe. It is a dietary requirement but very high levels in water can bring problems.

**Dangers in water** – In drinking water, when iron is present it can cause water to taste metallic and become discolored. The EPA cautions that although iron is safe to ingest, the iron sediments may harbour harmful bacteria.

**Correct levels** – 0 to 0.3 ppm

**How to fix and maintain** – If you have any iron in your water you can either buy a reverse osmosis water filtration system or a mechanical water softener to combat this issue.

## Copper:

**Overall meaning** – Copper is also a chemical element, represented by the symbol Cu. It is a widely used metal in the modern world.

**Dangers in water** – In drinking water, copper has been linked with liver damage and kidney disease. Children are more vulnerable to the effects as they have not properly developed the body's natural mechanism for copper control. A lot of copper in water can also lead to vomiting, diarrhoea and nausea.

**Correct levels** – 0 to 1 ppm

**How to fix and maintain** - If you have more than 1 ppm of copper in your drinking water, you should always let water run on cold for 30-60 seconds when supply hasn't been used for more than 6 hours as you will essentially flush most of the copper contaminated water. You can also buy a reverse osmosis filter to deal with it.

## Lead:

**Overall meaning** – Lead is an element represented by the symbol Pb. It is a metal which, when in water, can cause major health problems for people.

**Dangers in water** – In children lead has been tied to side effects such as lower IQ, hyperactivity and slowed growth, in pregnant women it can cause

premature birth and in adults it is linked to reproductive problems, decreased kidney function and cardiovascular effects such as increased blood pressure.

**Correct levels** - 0 to 0.015 ppm / 0 to 15 ppb

**How to fix and maintain** – Boiling water will not get rid of lead contamination. You will need to buy a water filter that is designed for lead reduction or flushing your pipes before drinking often to not drink static water which has increased chance of lead exposure due to staying in pipes for extended periods of time.

## Fluoride:

**Overall meaning** – Fluoride is an inorganic, monatomic anion with the chemical formula F<sup>-</sup>. It can occur in drinking water naturally as a result of the geological composition of soils and bedrock. It is also added to water to help reduce tooth decay in some states.

**Dangers in water** – Adults exposed to excessive consumption of fluoride over a lifetime may have increased likelihood of bone fractures, and may result in effects on bone leading to pain and tenderness. Are children or adults exposed to too much fluoride? Based on the data evaluated in this risk assessment, EPA concludes that it is likely that some children 8 and younger are exposed to too much fluoride at least occasionally while their teeth are forming because of their high fluid intake relative to their body weight and/or because of high natural levels of fluoride in their local drinking water.

**Correct levels** – 0 to 2 ppm

**How to fix and maintain** – The typical charcoal-based water filtration systems used in most homes do not remove fluoride from water. Boiling water does not remove fluoride. More costly distillation and reverse osmosis are treatment methods that have proven to be effective for removing fluoride to below 4.0 mg/L. If you choose to use home water treatment, make sure that the filter you use is certified to address your concerns. There are several independent American National Standards Institute (ANSI) certified organizations that test and certify home water treatment units.



## Mercury:

**Overall meaning** – Mercury (Hg) is a naturally occurring metal that combines with other elements to form inorganic mercury compounds. The major source of mercury is from natural degassing of the earth's crust.

**Dangers in water** – If the Mercury level is too high in drinking water it can damage the brain, kidneys, and developing fetus. No health advisories have been established for short-term exposures.

**Correct levels** – 0 to 0.002 ppm

**How to fix and maintain** – There are a few ways to remove mercury from your drinking water: Granulated activated carbon (GAC) filters are inexpensive and simple to use. They can take the form of point-of-use systems or pitchers manually filled with water. Their effectiveness is sensitive to water pH, and they are most effective at around pH near 7. These filters need to be replaced periodically to maintain their effectiveness over time. Distillation systems work by removing most of the dissolved solids from the water by boiling and condensing the water. Small systems are available that can be placed on a kitchen counter. The running costs are high due to needing to boil the water. Small reverse osmosis systems (called point-of-use systems) also work and can be installed near the kitchen sink to treat water.

## pH:

**Overall meaning:** pH is the scale of whether the water is acidic (1-6), neutral (7) or alkaline (8-14). The pH of water varies depending on your location (source of the drinking water) as it passes through different rock.

**Dangers in water:** In drinking water, if the pH is too high (or alkaline) you get the problems mentioned in the section above. However if the water is too acidic it could have metal traces in such as lead, iron and copper which is very bad for you, which we discuss later on in this guide. Acidic water can also be corrosive to pipes and bring property damage long term.

**Correct levels:** 6.5 to 8.5

**How to fix and maintain any issues:** Once again, you shouldn't have any issues with the pH of your water but if you do, to make your water supply more

neutral you can add a water filtration system to your home. These filters work by making the water pass through a neutralizing substance.

## Total Alkalinity:

**Overall meaning:** Measure of the capacity of water to neutralize acids.

Alkalinity in water will help keep the water's pH stabilized

**Correct levels:** Not applicable – In drinking water, the total alkalinity that's recommended is a controversial subject. Alkalinity is linked with pH and the EPA sets the standard to be a range of 6.5 to 8.5. This range is more on the neutral side. Alkaline water is recently being investigated as the healthier alternative to the normal neutral water as it helps make our bodies less acidic. This has led to some test subjects showing lowered cholesterol and blood pressure after switching from neutral tap water to alkaline water for an extended period of time. There are also some big claims like it strengthens your bodies systems making them more efficient. There are however dangers to having high total alkalinity levels in your drinking water and these positive effects have not been fully validated.

**Dangers in water:** One of the dangers of water being too alkaline is that it affects your body's natural pH level. According to some, if you disturb your pH level, our body's cells will not be able to perform their normal chemical reactions as they require a certain amount of acidity and alkaline balance. Alkaline water is also not good for people with kidney issues as it is essentially the kidneys job to maintain pH levels so they will be working very hard unnecessarily and will eventually lead to problems. If your drinking water is alkaline you also make your stomach acid less acidic which can lead to vitamin absorption problems.

**How to fix and maintain any issues:** Generally speaking there isn't much you could or should do about total alkalinity in your water as it varies by state. Unless you are actively trying to make your water alkaline there shouldn't be any major issues health wise. As long as your water falls between 6.5 and 8.55 you should be good. See pH section for more.



## Total Hardness:

**Overall meaning** – Hard water is water that is high in mineral content, due to the water source passing through certain environments.

**Dangers in water** – In drinking water, the total hardness could cause an unpleasant taste and can also damage the pipes that it runs through to get to your tap. The hardness is however dependant on the area that you are from.

**Correct levels** – Not applicable, although for drinking water a lot of people prefer harder water because it contains essential minerals which do count towards your daily recommendations.

**How to fix and maintain** – To soften water there are a couple of things you can do. To get rid of temporary hardness you can boil the water. For a permanent solution you can buy a water softening system. A simple water jug filter also usually contains an ion exchange resin which softens water, however generally for drinking water you shouldn't try and change this as it doesn't make too much of a difference to drink.

## Nitrate:

**Overall meaning** – Nitrate (NO<sub>3</sub>) is a colorless, odourless and tasteless molecule made up of nitrogen and oxygen. It is essential for all living things but high levels in drinking water can be dangerous to health, especially pregnant women and infants.

**Dangers in water** – In drinking water, nitrate and nitrite can cause developmental issues in infants such as blue baby syndrome.

**Correct levels** – 0 to 10 ppm

**How to fix and maintain** – Using a treatment process called ion exchange will get rid of 97-99% of nitrate and nitrite in water. The same can be said for reverse osmosis water filtration systems.

## Nitrite:

**Overall meaning** – Nitrate (NO<sub>2</sub>) is a colorless, odourless and tasteless molecule made up of nitrogen and oxygen. It is essential for all living things but high levels in drinking water can be dangerous to health, especially pregnant women and infants. Nitrite is more reactive than Nitrate.

**Dangers in water** – In drinking water, nitrate and nitrite can cause developmental issues in infants such as blue baby syndrome.

**Correct levels** – 0 to 1 ppm

**How to fix and maintain** - Using a treatment process called ion exchange will get rid of 97-99% of nitrate and nitrite in water. The same can be said for reverse osmosis water filtration systems.

## Free / Residual Chlorine:

**Overall meaning** – Chlorine is a chemical element that is often used in water to kill bacteria. It is represented by the symbol Cl.

**Dangers in water** – In drinking water, a little bit of free chlorine is preferred as it kills certain bacteria. However if you have more than 1 mg/l then chlorine can increase your risk of cancer (93%) and can cause long term lung problems.

**Correct levels** – 0 to 4 ppm

**How to fix and maintain** – If you have too much chlorine in your drinking water the simplest fix is to buy a jug filter and filter your tap water through this jug. Another method is to boil your water for 20 minutes then allow to cool.

## Total Chlorine:

**Overall meaning** – Chlorine is a chemical element that is often used in water to kill bacteria. It is represented by the symbol Cl. Total chlorine is the free chlorine (active) in the water added with the inactive chlorine still in water

**Dangers in water** – In drinking water, a little bit of free chlorine is preferred as it kills certain bacteria. However, if you have more than 1 ppm then chlorine can increase your risk of cancer (93%) and can cause long term lung problems.

**Correct levels** – 0 - 4 ppm

**How to fix and maintain** – If you have too much chlorine in your drinking water the simplest fix is to buy a jug filter and filter your tap water through this jug. Another method is to boil your water for 20 minutes then allow to cool. It is usually added to pools and spas to treat the water, to get rid of total chlorine in these, simply replace the water.

## Aluminium:

**Overall meaning** – Aluminum is an abundant metal, but it does not dissolve easily into water so it is not often a concern in drinking water. The main source of aluminum in the body is food.

**Dangers in water** – Aluminium is hypothesized as a risk factor for the development or acceleration of onset of Alzheimer disease (AD) in humans.

**Correct levels** – 0 to 0.2 ppm

**How to fix and maintain** – Aluminum can be removed by a water softener but this is not regarded as a practical home treatment because regeneration of the exchange bed must be done with sulfuric or hydrochloric acid. Reverse osmosis and distillation is very effective in removing aluminium plus it can also be removed by electro dialysis.

## Zinc:

**Overall meaning** – Zinc is one of the most common elements in the Earth's crust. Zinc is found in the air, soil, and water and is present in all foods.

**Dangers in water** – Can cause vomiting, nausea and other adverse health effects. Drinking water containing zinc at levels above 3 ppm tends to be opalescent, develops a greasy film when boiled, and has an undesirable astringent taste.

**Correct levels** – 0 to 5 ppm

**How to fix and maintain** – To achieve a level of Zinc that meets legal standards, you want to further research techniques as coagulation, ion exchange and active carbon. Sand filtration is also an excellent solution.

## Sulfate:

**Overall meaning** – Sulfates are a combination of sulfur and oxygen and are a part of naturally occurring minerals in some soil and rock formations that contain groundwater. The mineral dissolves over time and is released into groundwater.

**Dangers in water** – Sulfate minerals can cause scale buildup in water pipes similar to other minerals and may be associated with a bitter taste in water that can have a laxative effect on humans. Elevated sulfate levels in combination with chlorine bleach can make cleaning clothes difficult. Sulfur-oxidizing bacteria produce effects similar to those of iron bacteria. They convert sulfide into sulfate, producing a dark slime that can clog plumbing and/or stain clothing.

**Correct levels** – 0 to 250 ppm

**How to fix and maintain** – For treating small quantities of water (drinking and cooking only) the typical methods may be distillation or reverse osmosis. The most common method of treating large quantities of water is *ion exchange*. This process works similar to a water softener. Ion-exchange resin, contained inside the unit, adsorbs sulfate. When the resin is loaded to full capacity with sulfate, treatment ceases. The resin then must be "regenerated" with a salt (sodium chloride) brine solution before further treatment can occur.

**If you are a teacher or parent and would like the large color chart associated with your test kit please contact me (Nathan) at support@jnwdirect.com, tell me the product you bought and I will attach the correct large color chart for printing. If you have any other questions please just send me an email.**

## Sources:

\*We compiled this information as an overview of some of the meanings, dangers and solutions for the tests to help you know more about your water. We gathered the info from various sources from the internet which we will link down below. If you want to know more, please do more research.

Thank you so much for reading, we hope you found this information helpful and if you would like to contact us for any reason regarding this e book or the test strips we provided, please email us: [support@jnwdirect.com](mailto:support@jnwdirect.com).

## Links:

[epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants](http://epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants)

[epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance- nuisance-chemicals](http://epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance- nuisance-chemicals)

[epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water](http://epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water)

[Brita.com/why-brita/what-we-filter](http://Brita.com/why-brita/what-we-filter)

[purewateroccasional.net/wtialuminum.html](http://purewateroccasional.net/wtialuminum.html)

[water-research.net/index.php/sulfates](http://water-research.net/index.php/sulfates)

[Health.state.mn.us/divs/eh/water/factsheet/com/copper.html](http://Health.state.mn.us/divs/eh/water/factsheet/com/copper.html)

[Livestrong.com/article/498701-what-are-the-benefits-of-drinking-alkaline-water](http://Livestrong.com/article/498701-what-are-the-benefits-of-drinking-alkaline-water)

[Livestrong.com/article/408517-can-too-much-iron-in-your-water-make-you-sick](http://Livestrong.com/article/408517-can-too-much-iron-in-your-water-make-you-sick)

[Cdc.gov/healthywater/drinking/private/wells/disease/nitrate.html](http://Cdc.gov/healthywater/drinking/private/wells/disease/nitrate.html)

[Who.int/water\\_sanitation\\_health/dwq/chemicals/nitratenitrite2nadd.pdf](http://Who.int/water_sanitation_health/dwq/chemicals/nitratenitrite2nadd.pdf)

[filterwater.com/t-mercury.aspx](http://filterwater.com/t-mercury.aspx)

[wqa.org/Portals/0/Technical/Technical Fact Sheets/2014\\_Aluminum.pdf](http://wqa.org/Portals/0/Technical/Technical Fact Sheets/2014_Aluminum.pdf)

## EXTRA BONUSES:

### 10% OFF YOUR NEXT PURCHASE OF ANY OF OUR TEST STRIP KITS:



As an extra thank you, we are offering you a 10% coupon code to use for your next purchase of any of our highly rated and already well priced test strips.

Please use code: **GET10JNW** at checkout on Amazon.com.

### BUY 2 OR MORE, GET 10% OFF:

We are currently running a promotion where you can buy 2 of any of our strip kits below and automatically get 10% off applied to checkout!

### PRODUCT VIP CLUB:

You are now already a member of our VIP program, where you will receive amazing coupon discount codes at our product launches and promotions (up to 70% off!). We will email you when we have a promotion worth sharing.



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