

# WATER

"You are what you drink" - Dr. Henri Coanda (Father of Fluid Dynamics)

## Facts

- The body is approximately **70 %** water - by weight our bodies are mostly water
  - **92%** of our blood is water
  - **80%** of our brain is water
  - **75%** of our muscles are water
  - **70%** of our body is water
  - **60%** of our bones are water
  - **99%** of all chemical reactions in the body require water
- The body's water supply is responsible for and involved in nearly every bodily process, including digestion, absorption, circulation, and excretion
- The quality of water we drink has a profound effect on our health and well-being, so drink the highest quality
- It is the carrier of all nutrients to our cells and the vehicle for the elimination of all toxins
- We need water - our kidneys require water to remove waste, to lubricate our joints, regulate our body temperature and to breathe
- The body loses **1.5 litres** of water a day through the skin, lungs and gut and via the kidneys as urine, ensuring that toxic substances are eliminated from the body.
- We also make about a **1/3** of a litre of water a day when glucose is burnt for energy. Therefore a minimum water intake from food and drink needs to be more than **1** litre a day. The ideal daily intake is around **2** litres (**8** glasses).
- The body can survive without food for about **5 weeks**, the body cannot survive without water for longer than **5 days**.
- Fruit and vegetables consist of around **90%** water. They supply it in a form that is very easy for the body to use, at the same time providing the body with a high percentage of its vitamins and minerals.
- **4** pieces of fruit and **4** servings of vegetables, amounting to about **1.1** kilogram of these foods, can provide **1 litre** of water, leaving a daily **1 litre** to be taken as water or in the form of diluted juices or herb or fruit teas.

- Alcohol, tea and coffee caused the body to lose water.
- A loss of only **3%** of water in the muscle can cause a **10%** drop in strength and an **8%** loss in speed
- From infancy to adulthood we lose an average of **30%** of our body's water
- We self-hydrate to the age of **25** then we have to take over
- Approximately **90%** of the world's population is dehydrated

## **Dehydration = Ageing**

We don't get old we just dry out!

The average absorption of water is between **2-30%** - why? because most drinking water has a high surface tension (73 DYNES). Body fluids have a lower surface tension (45 DYNES).

To hydrate cells, to help assist in the transportation of toxins, the wetness of toxins (the wetter the toxins the easier they are to get out of the body) and absorption of food and supplements at a cellular level, we need to be able to reduce the surface tension of the water we drink to that of our own body fluids. How - through products that are available now.

## **An Introduction to Water**

Obtaining quality water would seem to be an easy matter. However, due to the numerous types of classifications water is given, the average consumer can easily be confused about what is available. This section is a guide to understanding what the most commonly used classifications of water mean and how these different kinds of water may help or harm the body.

### **Tap Water**

Water that comes out of household taps or faucets is generally obtained either from surface water—water that has run off from ponds, creeks, streams, rivers, and lakes, and is collected in reservoirs—or from ground water—water that has filtered through the ground to the water table and is extracted by means of a well.

## Hard Versus Soft Water

Hard water, found in various parts of the country, contains relatively high concentrations of the minerals calcium and magnesium. The presence of these minerals prevents soap from lathering and results in filmy sediment being deposited on hair, clothing, pipes, dishes, washtubs, and anything else that comes into regular contact with the water.

It also affects the taste. Hard water can be annoying, and though some studies have shown that deaths from heart disease may be lower in areas where the drinking water is hard, we believe that the calcium found in hard water is not good for the heart, arteries, or bones. Hard water deposits its calcium and other minerals on the outside of these structures, while it is the calcium and magnesium found within these structures that are beneficial to the body. Soft water can be naturally soft or it may be hard water that has been treated to remove the calcium and magnesium. One potentially serious problem with artificially softened water is that it is more likely than hard water to dissolve the lining of pipes. This poses an especially significant threat if pipes are made of lead. Another threat comes from certain plastic and galvanised pipes, which contain cadmium, a toxic heavy metal. These types of pipe are rarely used in construction today, but they may be present in older buildings that have not undergone extensive renovation. But leaching from pipes can be a problem with today's copper pipes as well. Dangerous levels of copper, iron, zinc, and arsenic can leach into softened water from copper pipes.

## The Safety of Tap Water

Most people assume that when they turn on their kitchen tap, they are getting clean, safe, healthy drinking water. Unfortunately, this is often not the case. Regardless of the original source of tap water, it is vulnerable to a number of different types of impurities. Some undesirable substances found in water, including radon, fluoride, and arsenic, iron, lead, copper, and other heavy metals, can occur naturally. Other contaminants such as fertilisers, asbestos, cyanides, herbicides, pesticides, and industrial chemicals, may leach into ground water through the soil, or into any tap water from plumbing pipes. Still other substances, including chlorine, carbon, lime, phosphates, soda ash, and aluminium sulphate, are intentionally added to public water supplies to kill bacteria, adjust pH, and eliminate cloudiness, among other things. In addition, water can contain biological contaminants, including viruses, bacteria, and parasites.

Pesticides pose a risk in any area where the tap water is extracted from an underground source. These chemicals are suspected of causing, or at least contributing to, an increased incidence of cancer, especially breast cancer. Some scientists believe this may be because certain pesticides can mimic the action of the female sex hormone oestrogen in the body. Others point to the fact that toxins in the body tend to accumulate in fatty tissues, and the human breast is composed largely of fatty tissue. The pesticide problem is a particular concern in areas where agriculture is (or was) a major part of the economy. These chemicals are persistent. Residues from pesticides used decades ago may still be present in water coming out of the tap today, and may pose a risk to health.

Whatever the source of your water, it is important to know some warning signs of bad water. Watch for cloudiness or murkiness in water. Chlorination causes some cloudiness that usually clears if the water is left to stand, but bacterial or sedimentary cloudiness will remain. Foaming may be caused by bacterial contamination, by floating particles of sediment, or by soaps or detergents.

Bacteria can be destroyed by boiling water for at least five minutes, while sediment should settle out if you let the water stand for several hours. Strange smells or tastes in water that was previously fine could mean chemical contamination. However, many toxic hazards that work their way into water do not change its taste, smell or appearance.

## Fluoridation

For many years now, controversy has raged over whether fluoride should be added to drinking water. Proponents say that fluoride occurs naturally and helps develop and maintain strong bones and teeth. Opponents to fluoridation contend that when fluoridated water is consumed regularly, toxic levels of fluorine, the poisonous substance from which fluoride is derived, build up in the body, causing irreparable harm to the immune system.

Meanwhile, no convincing scientific proof has ever been generated that fluoridated water makes for stronger bones and teeth. It is known, however, that chronic fluoride use results in numerous health problems, including osteoporosis and osteomalacia, and also damages teeth, and leaves them mottled. Some salts used to fluoridate the water supply, sodium fluoride and fluorosalicic acid, are industrial by-products that are never found in nature. They are also notoriously toxic compounds, so much so that they are used in rat poison and insecticides. The naturally occurring form of fluoride, calcium fluoride, is not toxic—but this form of fluoride is not used to fluoridate water. Many ailments and disorders—including Down syndrome, mottled teeth, and cancer—have been linked to fluoridated water, fluoridation has become the standard rather than the exception. The fluoride added to tap water can be a problem.

Individuals have different levels of tolerance for toxins such as fluoride. Fluoride is the **13<sup>th</sup>** most widely distributed element on earth, so it can turn up just about anywhere—in vegetables and meats, for example. Since so many local water supplies are fluoridated, there is a good chance that virtually any packaged food product made with water, such as soft drinks

and reconstituted juices, contains fluoride. Additional fluorides are widely used in toothpaste products, so it is easy to see how many people may be ingesting excessive amounts of this potentially toxic substance. If your tap water contains fluoride, and you wish to remove it, you can use a reverse osmosis, distillation, or activated alumina filtration system to eliminate almost all of the fluoride from your water.

## Bottled Water

Because of concerns over the safety and health effects of tap water, many people today are turning to bottled water. Bottled water is usually classified by its source (spring, spa, geyser, public water supply, etc.), by its mineral content (containing at least 500 parts per million of dissolved solids), and/or by the type of treatment it has undergone (de-ionised, steam-distilled, etc.). Because there is a lot of overlapping among these criteria, some water fits more than one classification. Some bottled water claims may be misleading or incorrect.

## De-ionised or De-mineralised Water

When the electric charge of a molecule of water has been neutralised by the addition or removal of electrons, the resulting water is called de-ionised or de-mineralised. The de-ionisation process removes nitrates and the minerals calcium and magnesium, in addition to the heavy metals cadmium, barium, lead, and some forms of radium.

## Mineral Water

Mineral water is natural spring water, usually from Europe or Canada. To be considered mineral water, in addition to containing minerals, the water must flow freely from its source, cannot be pumped or forced from the ground, and must be bottled directly at the source. Depending on where the source is, the minerals contained will vary.

Most mineral waters are carbonated. However, some sparkling waters are called mineral waters only because the manufacturer added bicarbonates, citrates and sodium phosphates to filtered or distilled tap water.

The number of gallons of "natural spring water" flowing through water coolers and from bottles has more than doubled in the last few years. The word "natural" on the label doesn't tell you where the water came from, only that the mineral content of the water has not been altered. It may or may not have been filtered or otherwise treated. Similarly, because there is no legal definition of the word "spring" as it is used on bottled water labels, a bottle of "natural spring water" may not have come from a spring. However, most companies that sell bottled water willingly list their water source on the label.

## Natural Spring Water

Spring water is water that rises naturally to the earth's surface from underground reservoirs. This water is unprocessed and flavour or carbonation may be added. The number of gallons of "natural spring water" flowing through water coolers and from bottles has more than doubled in the last few years. The word "natural" on the label doesn't tell you where the water came from, only that the mineral content of the water has not been altered. It may or may not have been filtered or otherwise treated. Similarly, because there is no legal definition of the word "spring" as it is used on bottled water labels, a bottle of "natural spring water" may not have come from a spring. However, most companies that sell bottled water willingly list their water source on the label.

Spring water is water that rises naturally to the earth's surface from underground reservoirs. This water is unprocessed, and flavour or carbonation may be added. If you use a water cooler for bottled spring water, you must clean the cooler once a month to destroy bacteria. Run a 50-50 mixture of hydrogen peroxide and baking soda through the reservoir and spigots, then remove the residue by rinsing the cooler with four or more gallons of tap water.

## Sparkling Water

Sparkling water is water that has been carbonated. It can be a healthy alternative to soda and alcoholic beverages, but if it is loaded with fructose and other sweeteners, it may be no better than soda pop. Read labels before you buy. Understanding where the carbonation in sparkling water comes from isn't always easy. A "naturally sparkling water" must get its carbonation from the same source as the water. If water is "a carbonated natural water," that means the carbonation came from a source other than the one that supplied the water. That doesn't mean the water is of poor quality. It can still be called "natural" because its mineral content is the same as when it came from the ground, even though it has been carbonated from a separate source. People suffering from intestinal disorders or ulcers should avoid drinking carbonated water because it may be irritating to the gastrointestinal tract.

## Steam-Distilled water

Distillation involves vaporising water by boiling it. The steam rises, leaving behind most of the bacteria, viruses, chemicals, minerals, and pollutants from the water. The steam is then moved into a condensing chamber, where it is cooled and condensed to become distilled water. Once consumed, steam-distilled water leaches inorganic minerals rejected by the cells and tissues out of the body. We believe that only steam-distilled water should be consumed.

Flavour can be added to distilled water by adding 1-2 tablespoons of raw apple cider vinegar (obtained from a health food store) per gallon of distilled water. Vinegar is an excellent solvent and aids digestion. Lemon juice is another good flavouring agent, and has cleansing properties as well. For added minerals, you can add mineral drops to steam-distilled

water. Concentrace from Trace Minerals Research is a good product for this purpose. Add 2 tablespoons of mineral drops to every 5 gallons of water.

## Water or Coke?

| <b>WATER</b>  | <b>COKE</b>  |
|---|--|
| 75% of Americans are chronically dehydrated   | In many USA states the highway patrol carries two gallons of Coke in the truck to remove blood from a highway after an accident  |
| In 37% of Americans the thirst mechanism is so weak that it is often mistaken for hunger  | You can put a T-bone steak in a bowl of Coke and will be gone in 2 days  |
| Even mild dehydration will slow down one's metabolism as much as 3%   | To clean a toilet: pour a can of Coca-Cola into the toilet bowl and let the "real thing" sit for 1 hour then flush clean. The citric acid in the coke removes stains from vitreous china   |
| One glass of water will shut down midnight hunger pangs for almost 100% of the dieters studied in a University of Washington study  | To remove rust spots from chrome car bumpers: rub the bumper with a rumpled that piece of aluminium foil dipped in Coca-Cola.  |
| Lack of water is the main trigger of daytime fatigue  | To clean corrosion from car battery terminals pour a can of Coca-Cola over the terminals to bubble away the corrosion  |
| Preliminary research indicates that 8-10 glasses of water a day could significantly ease back and joint pain for up to 80% of sufferers   | To loosen a rusted bolt apply a cloth soaked in Coca-Cola to the rusted bolt for several minutes   |
| A mere two per cent drop in body water can trigger first fuzzy short-term memory, trouble with basic maths, and difficulty focusing on the computer screen or on a printed page         | To bake a moist ham empty a can of Coca-Cola into the baking pan, wrap ham in aluminium foil, and bake. 30 minutes before the ham is finished, remove the foil, allowing the drippings to mix with the Coke for sumptuous brown gravy. |
| Drinking five glasses of water a day decreases the risk of colon cancer by 45% plus it can slash the risk of breast cancer by 79%, and one is 50% less likely to develop bladder cancer | To remove grease from clothes: empty a can of Coke into a load of greasy clothes, add detergent, and run through regular cycle. The Coca-Cola will help loosen grease stains.  |
|   | It will also clean road haze from your windshield  |

- The active ingredient in Coke is phosphoric acid. Its pH is 2.8. It will dissolve a nail in about four days. Phosphoric acid also leaches calcium from bones and is a major contributor to the rising increase in osteoporosis.

- To carry Coca-Cola syrup (the concentrate) the commercial truck must use the hazardous material placards reserved for highly corrosive materials.
- The distributors of coke have been using it to clean the engines of their trucks for about 20 years!

**Now the question is would you like a coke or a glass of water?**