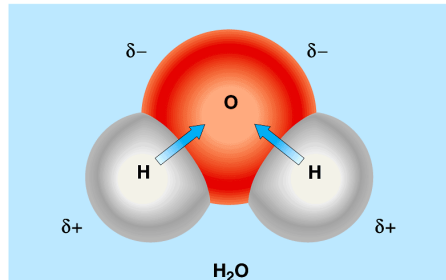


# pH - what is it?

The combination of two Hydrogen atoms with one Oxygen atom forms the “miracle” substance of life on this planet – WATER. Water not only makes up 70% of the planet, it also makes up about 70% of the human body. A large majority of all we are physically is simply hydrogen and oxygen.

2 ATOMS OF HYDROGEN



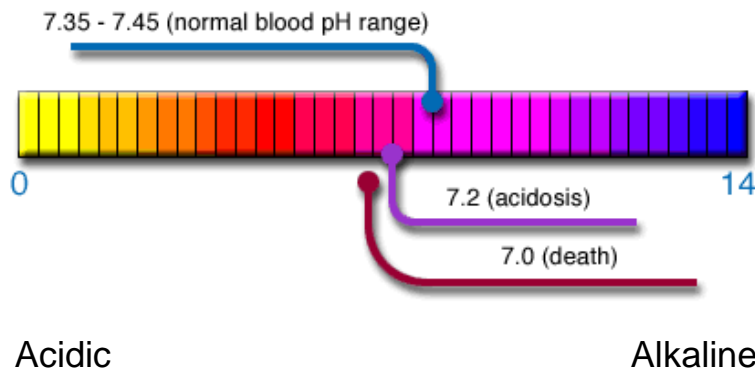
1 ATOM OF OXYGEN

As it turns out, the function of these two atoms are essential to our body's ability to live. Without oxygen, the complex human cell will not operate. The hydrogen atom is a major player in the metabolic and chemical reactions of body as well. The combination of these two atoms (water) plays a major role in all the processes of physical life.

A certain number of molecules of water (H<sub>2</sub>O) naturally dissociate into the hydrogen H<sup>+</sup> ion and into the OH<sup>-</sup> ion. The relationship between the concentrations of these two dissociated ions is expression with what is called the pH scale. **The term pH stands for “potential” of “Hydrogen”.** The more hydrogen ions, the more acidic the solution is. The fewer hydrogen ions the more alkaline (base) the solution is.

Just as the kilometer is a measure of distance, and the hour a measure of time, **the pH unit measures the degree of acidity or basicity of a solution.** pH is measured on a scale of zero to fourteen, with zero being most acid, fourteen being most alkaline and seven being mid-range.

The pH level of blood is **the most important balance systems of the body.** Look at the importance of blood pH as shown below.



Normal blood pH has a very small window of acid/alkaline pH balance and must range between 7.35 and 7.45. This means that there is an **adequate amount of oxygen in the blood.** **Any slight decrease in pH will result in lower oxygen levels in the blood and, therefore, in the cells.**

Any drop in pH, no matter how slight, is **the beginning of a disease state and affects when and how we age.** All other organs and fluids will fluctuate in their range in order to keep the blood at a strict pH between 7.35 and 7.45 (slightly alkaline). This process is called homeostasis. The body makes constant adjustments in tissue and fluid pH to maintain this very narrow pH range in the blood.

**A normal pH of all tissues and fluids of the body (except the stomach) is slightly alkaline.** The stomach pH is much more acid than the intestinal pH because the stomach needs an acid environment (hydrochloric acid) to break down food for digestion. Whereas, the flora (good bacteria) of the intestine need a more alkaline environment to assimilate and process the nutrients from the foods digested by the stomach.

**Most living things depend on a proper pH level to sustain life.**

**Commodities** such as wheat and corn, not to mention other plants and food products, **will grow best** if the soil they are planted in is maintained at an optimal pH. To attain high crop yields, farmers must condition their fields to the correct pH value.

Rainwater is naturally acidic (below 7.0 pH). Rain is typically around 5.6 pH but, in some areas, it increases to harmful levels between 4.0 and 5.0 pH due to atmospheric pollutants. Heavily industrialized areas of the US, such as the Midwest, have been targeted by various environmental agencies to **minimize the pollutants that cause acid rain.**

**The burning of fossil fuels**, such as coal, releases gases into the upper atmosphere that, when combined with rain water, change composition and **cause the rain water to become more acidic.** Proper pH control keeps milk from turning sour, makes strawberry jelly gel, and prevents shampoo from stinging your eyes. In plating plants, pH control is used to ensure the luster of chrome on various products from nuts and bolts to toasters and automobile bumpers.

The pH of wastewater leaving manufacturing plants and wastewater purification plants, as well as potable water from municipal drinking water plants, must be within a specific pH "window" as set forth by local, state or federal regulatory agencies.

***PH IS THE THERMOMETER OF LIFE FOR BODY WATER  
THAT REGISTERS EITHER ACIDITY – THE POLLUTION OF OUR “INNER OCEAN”  
OR PH BALANCE – THE INNER ENVIRONMENT OF HEALTH***