

## Body pH and Health

Body pH is a measurement of the relative acidity of your blood. This measurement is based on the pH scale, which you can use to determine the acidity of all fluids classified as solutions. Your body's pH needs to stay in a certain fairly narrow range, and pH levels above or below this range can kill you.

### Background

In chemical terms, your blood is a solution. This means that it is a liquid that contains its materials in a uniform, or even, distribution. PH readings measure the concentration of electrically charged hydrogen atoms, also known as hydrogen ions, contained within a solution. Solutions that fall between 0 and 7 on the pH scale have acidic properties, while solutions that fall between 7 and 14 on the scale have alkaline, or basic, properties. Solutions that measure precisely 7 on the scale have neutral properties.

### Buffering pH Changes

Under normal circumstances, human blood has a slightly alkaline pH of roughly 7.4. Your body is so sensitive to your blood pH that levels below 6.8 or above 7.8 can kill you. Because of the importance of a stable pH, your body has a number of built-in mechanisms designed to cushion, or buffer, chemical reactions that could potentially cause your blood to exceed its safe pH range. These mechanisms include adjusting your breathing rate upward or downward to control your blood levels of carbon dioxide; using certain internal chemicals, like a substance called bicarbonate, to scoop up any extra hydrogen ions; and increasing or decreasing the amount of acid you excrete in your urine.

### Exercise As An Example

The body changes associated with strenuous exercise provide an excellent example of the body's pH buffering systems, Washington University in St. Louis notes. When you exercise, your blood levels of hydrogen increase; in chemical terms, this means your blood becomes more acidic. Up to a certain point, your body can cope with this increase through chemical reactions that scoop up hydrogen. However, in strenuous exercise, you can produce more hydrogen than your chemical buffers can accommodate. If this occurs, your lungs can accelerate their output of carbon dioxide, and thereby lower your blood's acidity, by increasing your breathing rate.

## Considerations

Some people advocate “alkaline” diets to meet health-related objectives that include increased body energy, weight loss and reduction of cancer and heart disease risks, Brigham and Women’s Hospital reports. However, since your body necessarily keeps its pH within a restricted range, any alteration in your diet will produce only minor, short-term changes in your blood, or body, pH. In addition, some people take pH readings from urine or saliva. However, you can’t measure your blood pH in this manner. Instead, you need to take a blood test. Consult your doctor for more information on body pH and its relationship to your health.