Dr. Winstead’s Outline of Blood Pressure

         Blood Pressure is simply the force exerted by your flowing blood against the walls of the arteries. The pumping heart creates the force.

          One drop of blood (representing all the blood) takes less than one minute to travel from the heart through the circulatory system back to the heart again.

          The pressure that occurs during the heart's contraction is called systolic pressure (average of 120 mm mercury pressure). You can feel this surge of pressure as a pulse, and therefore we can measure heart rate. The pressure that occurs between beats when the heart rests is called diastolic pressure (normal of 80 mm mercury pressure). Blood pressure is often written and referred to as a fraction with the systolic pressure in the numerator and diastolic pressure in the denominator, e.g., 120/80.

          Diseases of the heart and blood vessels are the leading cause of death in the U. S. and high blood pressure is the most common disease affecting the circulatory system. Hypertension means high blood pressure. A mild case would be in the range of 140/90, a moderate case in the range of 160/95, and a severe case in the range of 210/145. Hypertension makes the heart pump harder than normal and causes stress on the heart and the rest of the circulatory system. The heart muscles get larger to try to cope with the extra work, however it then weakens and stops pumping effectively. Hypertension speeds up hardening of the arteries, which makes the pressure even higher. This creates a cycle of the pressure causing the arteries to become less elastic and then the pressure continues to get even higher. The high pressure in the circulatory system causes capillaries to break, which in turn damages the tissues where the capillaries are located. For example, high pressure in the eyes may cause blindness, high pressure in the kidneys may cause the kidneys to fail, and high pressure in the brain may cause a stroke.

          Blood pressure is very variable during the day. For example, pressure goes up if the person is excited, under stress, exercising, or very emotional. The pressure would go down some when the person is relaxing or sleeping. A low blood pressure (within reason) may be considered an asset, since less stress is put on the circulatory system.

          Increased blood pressure usually results from the constriction of millions of tiny blood vessels, the arterioles. Important factors that contribute to a case of hypertension are: inherited trait, emotional tendencies, trace metals in the water, smoking, a diet high in fat and salt.

          Hypertension itself is painless, however its effects may still be very damaging over a long period of time.

          Hypertension may be controlled with a change in diet, with mild exercise, by not smoking, or, for more severe cases, with medication.

Also see Dr. Winstead’s  [**Blood Pressure Tracking: Free Templates for Graphing Your Own Blood Pressure, Pulse Rate, and Pulse Pressure in Microsoft Excel**](http://raywinstead.com/bp/)at<http://raywinstead.com/bp/>