

Hypertension, or High Blood Pressure

There are two types of hypertension; primary and secondary. Secondary hypertension is caused by kidney disease, atherosclerosis, or too much aldosterone hormone from the adrenal glands. This type of hypertension accounts for about 15% of sufferers. The others have primary hypertension and *modern medicine can find no organic cause for this*. (Tortora 1984)

The risks associated with hypertension include damage to the heart, kidneys and brain (Tortora 1984) For example if the heart has to work harder due to increased blood pressure it becomes larger, which means it requires more oxygen to function properly. If this need is not met, then the person is more likely to develop angina and the risk of heart attack is greater.

The higher blood pressures may damage the tiny blood vessels in the brain and kidneys. Atherosclerosis or hardening of the arteries that contributes to hypertension is made worse by high blood pressure, thus creating a vicious circle.

High blood pressure or hypertension is a condition that has become almost epidemic in today's world and kills more people than cancer.

Blood flows from the heart where the pressure is highest to other parts of the body where the pressure is lower.

The pressure is the force that the heart exerts on the blood to move it around and is primarily determined by how much blood is pumped each time out of the heart into the main artery, the aorta.

Blood presses against the walls of the blood vessels, which stretch and contract to help push the blood around. If there is an increase in blood volume due to fluid retention, or the blood vessels are narrow and do not stretch properly, then the pressure rises because the heart has to work harder to move the blood around. This is called high blood pressure or hypertension.

Blood pressure is measured by two values, systolic, the maximum pressure when the heart pushes the blood into the aorta and diastolic, the lower pressure. Normally their values are roughly 120/80. High blood pressure may be regarded as over 140/90 for the under 40's and over 160/95 for over 40's.

The following factors regulate or change blood pressure:

- * The kidneys play a primary role by controlling the volume of blood and also by excreting or restoring minerals to the bloodstream.

- * The tension of smooth muscle that is wrapped around blood vessels – spasm, raises blood pressure.

- * The thickness of the blood, for example when blood is thickened it moves more slowly than when it is very fluid and the pressure increases to push it around.

- * Irregularities in the surface of the blood vessels tend to slow down the flow, which increases the pressure.

(Guyton 1982)

Controlling Hypertension

While excessive consumption of salt is claimed to be associated with hypertension, the case for eliminating salt is not certain. A deficiency can mean an increase in the low density lipoproteins that carry cholesterol to the arteries. Calcium channel blockers, which are commonly used to treat hypertension, are ineffective when the person is on a low salt diet (Youngsen 1997) The moderate use of natural unrefined sea salt which contains other trace elements may be the best middle road.

Studies show that by slowing down the breathing rate to ten breaths per minute for fifteen minutes at a time, three or four times a week improves hypertension. (Grossman 2001, Schein 2001) The Buteyko Institute Method is not about deliberately slowing your breathing down in this manner. However many people have experienced great improvement in their control over hypertension simply by practising the Buteyko exercises.

Regular moderate exercise is essential in maintaining good health and it is also a good way to assist in weight loss, which alone may help reduce blood pressure. Further improvements may often be made by consulting a nutritionist to determine a suitable diet that will help you to maintain a healthy weight and also ensure you have a balanced diet.

Because nicotine narrows blood vessels and contributes to the problem of hypertension, this is as good a reason as any to stop smoking and that will do the rest of your body a favour at the same time.

Stress Reduction

Since stress leads to increased breathing and heart rate with consequent increased blood pressure, it follows that the better our control of stress in our lives the healthier we shall be. The Buteyko Method helps reduce stress levels by normalizing your breathing patterns. Stress has been shown to increase cholesterol levels..(Steptoe 2005). Chronic stress and chronic hyperventilation (over-breathing) go hand in hand and feed each other. The physiological effects of hyperventilation include spasm of smooth muscle (increasing blood vessel resistance to flow), reduced oxygen delivered to tissue (' the Bohr Effect', triggering demand for more blood to be pumped around the body, and increased blood pressure) and impaired sleep (see insomnia, snoring & sleep apnoea leaflet) which will generate more daily stress trying to cope.

Peter Nixon , a British cardiologist suggests that 80% of people suffering from angina are primarily suffering from hyperventilation (Perera 1988)