“My eighty-three year old mother called me last week, ‘Brenda!’ her voice sounded alarmed, ‘I just took my blood pressure and I am worried, it is 160/100’”

Brenda, was worried too, but knew something about blood pressure. “Mom, just sit down, drink 3 big glasses of water, and I’ll be over in about 45 minutes and we’ll take your blood pressure again.”

Arriving 45 minutes later, Brenda retook mom’s blood pressure. It was now 130/70.

Americans are chronically dehydrated. People who drink plenty of water have lower blood pressures. Many people suffer from high blood pressure; the cause of which is inadequate consumption of water. Constant dehydration forces the body to tighten the blood vessels and speed up the heart to maintain adequate blood flow to the brain and over time hypertension results. Not all hypertension is the result of not drinking enough water, but more of it arises from this cause than is realized.

Contrast the impact of this “national water shortage” with the National Institute of Health’s (NIH) guidelines for treatment of hypertension. Let’s say your water intake has been disarmingly inadequate and your brain is crying for better blood supply. The body responds with a faster heartbeat and tighter blood vessels to squeeze the blood more effectively up to the top of your head. The doctor takes your blood pressure and (of course) discovers you have blood pressure that is higher than is considered safe. In line with practice guidelines the first line treatment is a diuretic; a “water pill”. You go home, the dehydration is worse (compounded) and on a return trip to the doctor you are again discovered to be not only hypertensive, but your heart rate is up. Guidelines now recommend a beta-blocker. What does a beta-blocker do? Slows yours fast heart rate. With that you go home, your heart is now slow, but the brain is still crying out for blood so all the blood vessels in your body get even tighter to squeeze the remaining blood to the top of your head. Back to the doctor you go for follow up; low and behold the pressure is still up. The next recommended pill to fix the “resistant hypertension” is a calcium channel blocker. What does a calcium channel blocker do? It relaxes all the blood vessel in your body. You mean the ones that tightened up to get the blood to the top of my head? Yes. Now I must hand it to the NIH, the first line therapy is really supposed to be lifestyle modifications, but in my estimation the modifications listed and the extent to which they are applied or encouraged lacks enthusiasm. Okay, so, you can see that I am not “real big” on treating diseases you get from poor lifestyle practices with any other thing than correct lifestyle practices.

Save The Brain

People with normal blood pressure live longer, and what’s more, their thinking is clearer. Studying the brains of people with high blood pressure, also called hypertension, researchers have discovered an association between hypertension, brain white matter defects, and difficulty thinking and remembering. People with high blood pressure develop white matter lesions in their brains at ten (10) times the rate of the normal population. Controlling blood pressure with medications does not stop brain deterioration. Some blood pressure medications make the brain deteriorate even faster. In order to stop brain deterioration, lifestyle habits responsible for both hypertension and dementia need to be addressed.

“Safe” Magic Potions?

Some people are quick to look to alternative medicine for a magic potion to fix their lifestyle related diseases, thinking they will find a safer cure in supplements, herbs, or vitamins. Some of these over-the-counter pills contain agents with pharmacological action just like medications, but does it make any sense to take magic potions to treat disease while continuing to practice the lifestyle habits that cause the illness in the first place? It’s not that people have not found benefit from some of these pills. Agents with some evidence of benefit include coenzyme Q10, fish oil, garlic, vitamin C, L-arginine, grape seed extract, quercetin, rosemary, cranberry, fennel, mistletoe, hawthorn berry and valerian. But none of these supplements changes the reasons or causes as to why your blood pressure went up in the first place.

No Substitution

I am not against pills just because they are pills, but some pills (and supplements) have serious drawbacks. For example, people already on blood pressure pills respond more poorly to lifestyle changes. They are somewhat trapped. What’s more, Parkinson’s disease is a side effect of some blood pressure medications. What about Alzheimer’s? People with low to normal blood pressure are protected from brain diseases like Alzheimer's. Artificial low blood pressure, with medications, does not always avert progression to dementia. People whose good lifestyles give them a healthy blood pressure are much more likely to be mentally acute (sharp/bright) as they get older. I recommend making a healthy lifestyle your defense against dementia, not medications.

While medications are generally prescribed to address some disease from which a patient suffers, hypertension is a side effect many medications. Oral contraceptives rise blood pressure 8 points on average. Antidepressant use doubles the risk for hypertension. Anti-inflammatory drugs cause high blood pressure through kidney dysfunction. Acetaminophen (aka Tylenol) increases blood pressure especially in patients with coronary artery disease (most Americans).

What is Hypertension?

What is Hypertension? The National Institute of Health is clear on the classification of blood pressure. Blood pressure is recorded as systolic pressure over diastolic pressure. Systolic is a measure of the highest pressure the heart develops during its beat and diastolic is the lowest pressure when the heart is refilling with blood for another beat. Normal blood pressure goes no higher than 120/80. To go over 120/80, but no higher than 139/89 is to have pre-hypertension. Blood pressures over 139/89 are classified in two stages. Stage 1 hypertension is from 140-159/90-99. Any pressure of 160/100 or more is considered stage 2 hypertension. The higher your blood pressure the higher your chances of experiencing other life threatening complications of hypertension.

Global Impact

Hypertension affects approximately 50 million people in the United States and 1 billion worldwide. Fully 29% of US adults have hypertension, around 68% are taking antihypertensive medication, but only 64% of those taking medication have their blood pressure controlled. Nine out of ten 55 year olds, in the United States, with normal blood pressure will develop hypertension before they die.

Types of Hypertension

There are two major types of high blood pressure, primary and secondary. Primary blood pressure is generally considered to have an unknown cause, but as you continue to learn the facts about hypertension you will discover that most primary hypertension is lifestyle related—it is caused by our habits relating to eating, drinking and exercising. Secondary hypertension can be linked to other medical conditions.
diseases such as thyroid disease, kidney disease, parathyroid disease, metabolic syndrome (diabetes), etc.

The Silent Killer

High blood pressure is called "the silent killer" because the majority of people with hypertension are unaware of its presence. Nevertheless some people with hypertension do report symptoms, these can include: tiredness, sudden hot flashes, headaches, reduced energy, heart beat palpitations, sudden sweating, reduced physical performance, dizziness, shortness of breath, chest pain, sleepiness, blurred vision, tinnitus (ringing in the ears) and/or muscle tension.38

Be Alert For Signs Of Cardiovascular Danger

Hypertension might not be so bad if it were not for all the other diseases it causes. Of these heart disease tops the list. Achieving normal blood pressure reduces the risk of congestive heart failure by 36%,39 of coronary heart disease by 72%, and of heart attack by 75%.40 Because hypertension is so hard on the heart, if you can reduce the blood pressure by just 20 points, you can cut the risk of heart disease in half.3

Researchers have determined that lowering the average blood pressure in the United States by just 5 points would reduce the number of stroke deaths by 23,000 per year.41 Further, lowering your blood pressure from 140/90 to a more normal 120/75 reduces your risk of stroke by 74%.42 Bleeds are a common cause of stroke and can occur when an aneurysm bursts in the brain. If blood pressure is kept within normal limits, brain aneurysms are much less likely to enlarge and rupture.43

Another study reported that normalizing blood pressure can reduce strokes by 35–40%, myocardial infarctions by 20–25% and heart failure by more than 50%.44

Controlling blood pressure also reduces the risk of peripheral vascular disease: injury to blood vessels in your arms and legs that can lead to and physical disability.45

Adding Insult To Injury

Hypertension can damage any part of your body because every part of your body is dependant upon blood for life. People with normal blood pressure save themselves much grief.

People with normal blood pressure can avoid the second leading cause (behind diabetes) of kidney failure.46

A surprising consequence of high blood pressure is high cancer risk! For example, normal blood pressure decreases the risk of endometrial cancer by 70%.5

Do you remember your last blood pressure numbers? Are you having difficulty thinking and remembering? People with hypertension are more apt to get Alzheimer's in their latter years, a disease of the brain that affects the ability to think and remember. People with normal blood pressure have superior blood flow to their brains improving thought and memory.48,49

Normal blood pressure protects you from brain deterioration especially in the frontal lobes.50 People who do not have hypertension perform better on test of memory, attention and abstract reasoning.51 Normal blood pressure can actually reduce the risk of Alzheimer's by 40%.52

Diabetes and hypertension are often closely related. When combined with low HDL cholesterol, high triglycerides and central obesity they are given a diagnosis of syndrome X.53 Syndrome X is not a good reason. People with normal blood pressure have 1/3 the risk of osteoporosis as those with hypertension.54

Osteoporosis is a thinning of the bones leading to an increased risk of fractures. People with normal blood pressure have 1/3 the risk of osteoporosis as those with hypertension.54

Retinopathy and Macular Degeneration are leading causes of blindness. Keeping blood pressure within normal limits cuts the risk of blindness from retinopathy and/or macular degeneration in half.55

Erectile dysfunction: the pressure in performance anxiety! Having trouble pleasing your wife? Thirty-two percent more men with normal blood pressure "get it up" than men with hypertension.56

Where Are We Headed: Outline

Lets talk about where we are headed with our hypertension discussion. Blood pressure is a product of the pumping of the heart, the blood vessel size, blood thickness and blood volume. If the heart beats faster, more blood is pumped and the pressure goes up. We call this tachycardia. If the blood vessels tighten up, making the space for the passage of blood narrower, it takes greater pressure to get the same amount of blood through to its destination. We refer to this tightening up effect as vasoconstriction. Blood vessels normally expand with each beat of the heart and then relax. If the blood vessels become hard, their stiffness inhibits the free flow of blood with each beat of the heart and the pressure goes up. Atherosclerosis is an example of this process. If the blood becomes thick and sludgy, more pressure is required to push it through the blood vessels and hypertension commences. When blood gets thick we say that the viscosity has increased too much. If the blood vessels are being choked by something pressing on them from their sides, the effect is like putting your thumb over the end of a garden hose; this results in increased blood pressure. We call this external compression. Finally, if the volume of blood increases, this increases the amount of blood entering the heart, this in turn increases the amount of blood the heart pumps with each beat increasing the overall blood pressure. We often refer to this phenomenon as fluid retention.

Volume Overload!

Lets start by talking about the problem of volume overload. Volume overload can be the result of obesity, where it takes more blood to feed an increased mass of fat tissue. Salt causes fluid retention effectively producing volume overload. Volume overload results when the kidneys fail because the kidneys are responsible for dispensing with excess fluid volume. Muscles have many large blood vessels and require lots of blood when exercised. Big muscles left unused become stiff and their blood vessels become stiff resisting blood flow and causing volume overload at the heart. Thus inactivity leads to hypertension. Blood does not like to be cold (you are not cold blooded) and if your legs or arms are cold, the blood vessels in these extremities tighten up sending all of the blood flooding to the heart thereby overloading it and causing hypertension.57

US Sodium Intake Exceeds Dietary Guidelines

It is a well-known fact that dietary salt plays a significant role in the evolution of hypertension. Salt causes your body to hold on to excess fluid; causing volume overload at the heart, and subsequent hypertension. It is estimated that reducing sodium intake in America to 1300mg (about ½ teaspoon of salt) per day would reduce the yearly death rate by 150,000.58 Our recommends are that total salt consumption not exceed 1/4 to 1/8 teaspoon per day, or 600mg to 300mg of sodium total.

Salt is a popular ingredient in fast food restaurant menu items. Salt and hypertension are key ingredients for the occurrence of a brain stroke. A national statistic reveals that the more neighborhood fast food restaurants a community has, the higher will be the stroke rate in that given community.59

Okay, so test your salt savvy: which has more sodium Rice Chex cereal or potato chips per one ounce serving each? The Rice Chex cereal at 249 mg has nearly twice as much as potato chips at 147 mg. How did you do? Lets compare tortilla chips and canned tomato sauce: The tomato sauce tops the chips at 147 mg / oz, the chips contain 118mg of sodium per ounce. What about Kraft Valvetea processed cheese or a hot dog sandwich? Ounce for ounce the Valvetea has nearly twice as much sodium at 420 mg compared to the hot dog's 221 mg.60 Read your labels! Don't get caught off guard. Or, better yet, buy food without labels, like corn on the cob, which has one-tenth the sodium as canned corn.61 In Japan, soy sauce is a significant source of excess sodium. In
that caffeine acutely raises blood pressure by raising circulating or-death, stressful, flight-or-fight situation. What actually happens is caffeine makes the heart react as if you were in a real life-pressure to get the same amount of blood through to its destination. Making the space for the passage of blood narrower, it takes greater vascular resistance to blood flow, 98 decreased blood flow to large muscles, 99 and increased blood pressure. 100 Regular use of your muscles keeps them supple and well supplied with blood, this in turn increases vitamin D of which also has been shown to lower blood pressure. 94,95 and sunshine relaxes blood vessels lowering blood pressure 94,95 and on the brighter side, don't underestimate the benefits of sunshine! Sunshine relaxes blood vessels lowering blood pressure 101,102 and increases vitamin D of which also has been shown to lower blood pressure. 101,102 The benefits of exercise in the treatment of hypertension are often overlooked. Exercise is important for all aspects of health. If you keep wiggling, they won't put you in a box! As a mode of exercise, walking is hard to beat. In fact, walking 10,000 steps or more per day can lower your blood pressure by 10 points. 103 That would be about 4 miles. Weight lifting or resistance training can provide additional benefit. Indeed, 20 minutes per day in the gym can lower your blood pressure by as much as 10-12 points. 104

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Relaxation

Feel the need of a massage? A back massage brings relaxation and lowers blood pressure. 105 A nice soothing warm bath is also beneficial. 106

External Compression

External compression, the choking off of the blood flow by something pushing on the blood vessel from it’s outside, causes hypertension. The effect is like putting your thumb over the end of a garden hose, the result is increased blood pressure. If some one grabs your neck and chokes off your air and carotid arteries, not only will your
eyes bulge, but also your blood pressure will probably go up. Physical things which produce an external compression of the blood vessels include swelling or edema, inflammation, sugar coating of the vessel walls called glycation, tight clothing and obesity.

**Tight Clothing**

Tight clothing, like belts and elastic, compress blood vessels and raise blood pressure. Clothing that hangs from your shoulders leaves your waist free of compression and aids in lowering blood pressure. Wearing loose clothes allow for more free blood flow and more normal blood pressure. Instead of wearing a belt to hold up pants, suspenders are helpful to avoid the tightness.

**Blood Viscosity, Thick Blood**

If the blood becomes thick and sludgy, more pressure is required to carry it through the blood vessels and hypertension commences. When blood thickens we say that the viscosity has increased too much. What actually happens is that the red blood cells stick together in a series or chain. We call this phenomenon rouleaux. Factors known to influence blood toward increased viscosity and rouleaux include stress, dehydration, consuming refined foods, high blood cholesterol, high fat diet, overeating, and the accumulation of waste products in the intestines.

Refined foods, such as oils and sugars, make red blood cells stick together in clusters or chains called rouleaux that can be seen under a microscope. Higher blood pressure is required to circulate this thickened blood.

**Fats**

Because eating a high amount of fat causes rouleaux, food with saturated fat, (i.e. animal products, butter, margarine, shortening, and/or coconut oil, etc) significantly increases the risk of hypertension. In turn, consumption of these products also raise the blood cholesterol, thickening the blood further and raising blood pressure. Even God has weighed in on the fat question, “Speak unto the children of Israel, saying, Ye shall eat no manner of fat, …” Compared to natural occurring vegetable fats, lard significantly increases blood pressure. Instead of wearing a belt to hold up pants, suspenders are helpful to avoid the tightness.

**Breathe Correctly**

Deep abdominal breathing, in contrast to shallow chest/neck breathing, brings blood pressure down.

**The Deadly Mix: Fat and Sugar**

Speaking of sugar, (and refined carbohydrates, like white flour, white pasta, white rice, and refined breakfast cereals, which turn immediately to sugar in your blood stream), twenty (20) teaspoons of sugar raises your blood pressure by 2 mmHg, forty (40) teaspoons raises it by 5 mmHg. The average American consumes 47 tsp of sugar each day of their lives. The danger of sugar in the diet is that it ends up in the blood stream. As the blood sugar rises so does the blood pressure.

Not all carbohydrates are created equal. Sugar and complex carbohydrates may carry the same theoretical calories per gram, but the impact on the blood sugar, the risk of hypertension and diabetes complications are very different. Complex carbohydrates from an unrefined plant based diet are much better tolerated, decrease the risk of complications are very different. Complex carbohydrates from an unrefined plant based diet are much better tolerated, decrease the risk of hypertension and provide a nutrient dense diet that improves health.

So how do sugar and other refined carbohydrates cause hypertension? Refined carbohydrates cause hypertension by increased production of norepinephrine, dopamine and epinephrine, and by causing blood vessel wall thickening. The secret is to quit consuming sugar. It works and blood pressure comes down.

Sugar is an accumulative poison. Refined carbohydrates create a sticky coating of sugar all over your blood cells, blood vessels and other body tissues. The more refined processed foods you eat, the higher your blood sugar goes and the more this sticky sweet substance coats the tissues of your body. This coating is called glycation and accumulates over time, leading to vascular and heart muscle stiffness, atherosclerotic plaque and hypertension. The more refined food you eat in your lifetime the greater your chance of having high blood pressure as you age. People on an unrefined plant based diet enjoy a cleaner cardiovascular system and may avoid high blood pressure all together as they get older.

Eating refined carbohydrates has a downside of leading to a condition called insulin resistance, where the cells of the body no longer take sugar out of the blood stream in response to normal insulin levels. Examples of refined carbohydrates shown to increase insulin resistance include: white rice, white flour (as found in pastries and white bread) and processed sugar.
refined carbohydrates is fructose, its ability to create insulin resistance and hypertension surpasses table sugar. Additional causes of insulin resistance include a high fat diet, eating between meals or snacking and obesity. The results of insulin resistance are high cholesterol values and of course, hypertension. People who never provoke their insulin to overproduction by eating refined carbohydrates also never experience insulin driven hypertension. Eating only as much refined carbohydrates as you would like to see your blood pressure go high. Speaking of fructose, drinking one fructose-sweetened soda per day can increase the risk of hypertension by 77%. In case you were thinking artificial sweeteners were a good alternative, think again. Artificial sweeteners like aspartame give some people very high blood pressure. Stopping these sweeteners can be the secret to lowering some people’s blood pressure. On the other hand there is a non-sugar sweetener, which has been shown to improve blood pressure and that is stevia. It does this by acting as calcium channel blocker (the mechanism of action of some pharmaceutical blood pressure drugs).

Hardening of The Arteries

Hardening of the arteries causes resistance to free flow of the blood. Blood vessels normally expand and relax with each beat of the heart. If the blood vessels become hard, their stiffness inhibits the free flow of blood with each beat of the heart and the pressure goes up. Atherosclerotic plaque is an example of this process. If a plaque narrows the diameter of a blood vessel, more pressure is required to get the same amount of blood through the smaller opening.

Other conditions leading to this mechanism of blood pressure elevation include: increased body inflammation (also known as oxidative stress), physical inactivity, and endothelial dysfunction. Endothelial dysfunction is a thickening of the blood vessel wall so that it no longer responds to the bodies relaxing signals. Endothelial dysfunction leads to unresponsive arteries and veins. Unresponsive arteries and veins resist free flow of blood to the tissues raising the blood pressure required to move the same volume of blood. Things that cause endothelial dysfunction include high blood sugars with sugar coating of the endothelium, uric acid with deadening of the endothelium, and high fat which also deadens the endothelium so that it will not relax and allow blood to pass freely.

Inflammation and Endothelial Dysfunction

The role of inflammation in the development of hypertension is multifaceted. Besides causing endothelial dysfunction, it thickens blood vessel walls making blood flow more difficult and raising the pressure required for normal circulation. As a consequence, blood pressure goes up with increasing inflammation. People with more inflammation have a 40% higher risk of hypertension. Many people realize that there is an association between salt intake and a rise in blood pressure. In fact, even though arterial hypertension is a major cause of disease-related morbidity and mortality worldwide, it is nearly absent in populations that consume natural foods containing little or no salt. This is partly due to fluid retention, but it is also due to inflammation. Excessive salt intake causes hypertension and kidney injury, in part, by oxidative stress that inflames the blood vessel walls and kidneys.

Toxins in the Environment

Lead and arsenic are environmental poisons that raise whole body inflammation and have been shown to cause hypertension. Lead is a common contaminant in old paint, dust around old houses and can even be found in supplements such as calcium. Arsenic often contaminates public drinking water and bottled water. Arsenic is used in chicken and hog feed as a growth promoter and is present in the meats of these animals. Arsenic is an approved feed supplement that farmers use to control intestinal parasites in chickens. As a consequence, eggs and chicken meat prove to be dietary sources of arsenic. Seafood (because fish swim in polluted waters) has been found to be a significant source of arsenic in those that consume seafood. Avoid arsenic and avoid hypertension.

How Much Antioxidant Do I Need?

The secret to inflammation management is having a good offense. Antioxidants and phytochemicals from plant foods provide this; they lower the inflammation in your body and normalize your blood pressure. You may be asking how much antioxidant do I need? Can I get too much? You may be interested to find out that lifestyle measures are not easily overdosed, they have more marked results in more difficult cases and they do not cause dangerous side effects. Antioxidants only lower blood pressure in people with hypertension, not in normal healthy people.

Diet is not the only way to have a positive impact on your antioxidant defense system. Exercise helps reduce the body’s inflammation resulting in lower blood pressure.

Since periodontal disease increases inflammation and hypertension, good oral hygiene can also be a key to good blood pressure control.

Beauty Rest Prescription

One of your bodies’ own defenses against elevated inflammation is the hormone produced by the pineal gland in your brain called melatonin. Melatonin is a natural antioxidant that reduces blood pressure. Late evening artificial lighting impacts sleep, disrupts melatonin production, and raises blood pressure. People who take regular hours for adequate sleep in total darkness have a healthier supply of melatonin and lower blood pressures. Consequently, people who subject themselves to the irregularities in schedule afforded by shift work are at higher risk of hypertension. That extra night’s pay may not be worth the risk high blood pressure. Regular day jobs are friendlier to blood pressure. We recommend a 9:30 p.m. bedtime for adequate melatonin production and healthier blood pressure.

People who go to sleep easily and get plenty of rest experience less hypertension. People who breathe freely at night, without sleep apnea or snoring, have lower blood pressures.

Meat and Endothelial Dysfunction

So what raises inflammation increasing blood vessel wall thickness and causes endothelial dysfunction? Animal product consumption. Three or more servings of meat, poultry, eggs, fish, and/or seafood per day increase the risk of hypertension by 67%. Of particular concern are pork products. The American Heart Journal notes: “A complete elimination of pork in all forms is a good dietary therapeutic rule in the management of arterial hypertension in all patients.” The elimination of all forms of pork from the diet of all people may be a good practice for the prevention and the control of hypertension, one of the most common and important illnesses of man.” “Salted pork is even more hazardous to the health of man.” Maybe this is why it was not considered a food item in God’s book, for Leviticus notes, “And the swine...is unclean to you.” Even eggs won’t help you lower your blood pressure. Eggs play a significant role in people 40 years old and older in their risk of hypertension. Animal products lack solution oriented antioxidants and if they’re not a part of the solution then they are a part of the problem. This is definitely the case in eating animal products.

Animal Products Face Acid Test

Acid is no friend of your body’s sensitive tissues. Acid increases endothelial dysfunction leading to hypertension. As a consequence, acid forming foods, particularly cheese and animal protein, significantly increase hypertension. Studying acid in the urine to identify acid forming foods, fruit and vegetables actually lower the amount of acid produced by comparison. One of the offending acids produced is uric acid. Anything that raises uric acid in the blood raises the risk of hypertension. Foods that raise uric acid include: meat (particularly...
organ meats), seafood, fructose (often as high fructose corn syrup or agave sweetener), beer and alcoholic beverages. As a consequence, the same diet helpful in lowering the risk of gout from uric acid elevations can simultaneously lower the risk of hypertension.

Foods known to help lower uric acid levels include fruits such as lemons and other citrus, cherries, strawberries, grapes, apples, tomatoes, bananas, and pomegranates; vegetables such as celery, potatoes, beets, and endive; and most tree nuts, especially chestnuts. For that matter, any food with diuretic properties has the potential to relieve high blood pressure that is being caused by high uric acid levels. Foods valued for their enhanced urine production properties (diuretic) include: artichoke, celery, eggplant, cauliflower, green beans, grape, apple, peach, pear, melon and watermelon. When you increase the amount of urine you produce, you potentially increase the amount of uric acid lost in the urine, thus lowering the levels in your blood.

**Strong Drink**

The impact of alcohol on the rise in blood pressure is not limited to its propensity to elevate blood uric acid levels. There is a linear relationship between the amount of alcohol consumed and the rise in blood pressure (the more alcohol you drink the higher your blood pressure goes). A two drink a day person can lower their risk of hypertension by one third simply by abstaining. The wise man says “Wine is a mocker, strong drink is raging: and whosoever is deceived thereby is not wise.”

**Choosing A Blood Pressure Sensitive Dietary Lifestyle**

Diet plays a significant role in hypertension, after all you are what you eat! In a study comparing common diets, it was discovered that non-vegetarians (consumers of animal products like meat, eggs and dairy) eat 50% more fat, have 30% higher total cholesterol, have 32% higher blood sugars and are six (6) times more likely to develop hypertension. Indeed, in rural populations still practicing their traditional largely vegetable based lifestyle, free from the effects of the western diet, hypertension is unheard of and there is no age related rise in blood pressure. Their average blood pressure is around 110/60 mmHg, average cholesterol 129 mg/dl, blood sugars 55 mg/dl and body mass index is 20 (kg/cm2).

Really, blood pressure is not supposed to go up with age! In choosing a dietary lifestyle you will be interested to know that people adopting total plant based nutrition only have a 5% incidence of hypertension, those vegetarians including dairy and eggs with their meals a 10% incidence, fish eating vegetarians a 12% incidence, and meat eaters a 21% incidence. Studied from another angle, people on total plant based nutrition have one fourth the risk of developing hypertension by one third simply by abstaining.

In considering adopting a health promoting lifestyle, the vegan (plant based nutrition) diet has many blood pressure lowering advantages. In one study hypertensive patients, on blood pressure medications for 8 years, were given a vegan diet for one year. Blood pressures came down and the majority were able to stop or drastically reduce their medications. Just eating more fruits and vegetables is helpful, compared to those who do not eat many fruits or vegetables; those who eat largely of fruits and vegetables have a 77% lower risk of hypertension.

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Vegetables known to be helpful in lowering blood pressure include: green leafy because they are high in magnesium and potassium, spinach, because it is rich in folate, celery, carrots, ginger and broccoli because they relax blood vessels, beets, basil, garlic (supplement or whole), onions (eaten raw, but not cooked) significantly reduce hypertension.

Not to be left out, fruit also lowers blood pressure. Fruits especially shown to have a positive impact on blood pressure include eggplant, tomatoes, pumpkin or squash, (which are high in potassium and low in sodium), cranberry (which has ACE inhibitory activity mimicking a popular blood pressure pill), apple a day.
Why Eat So Much?

“…and put a knife to thy throat, if thou be a man given to appetite.”

Hypertension increases with overeating.307, 308 Don’t overeat! “…eat in due season, for strength, and not for drunkenness!”309 Eating less food (caloric restriction) reduces blood vessel stiffness, improves vascular relaxation and lowers blood pressure.310

Taking it a step farther, fasting has been shown to be an effective modality is lowering blood pressure. You can jump start your blood pressure reduction with a water only fast.302 Fasting effectively reduces stubborn hypertension.303 Fasting one or two days a week may be more effective than pills.304

Have Some Lemon In Your Water!

With dehydration as one of the causes of hypertension,305 what is the best way to get my water? Adding fresh squeezed lemon to water maximizes its impact on hypertension.306 We recommend that you squeeze the juice of one lemon into your first quart of water for the day and drink it at least 30 minutes before breakfast to lower blood pressure. We recommend that the water be lukewarm; not hot or cold.

Tachycardia: Increased Heart Rate

If the heart beats faster, a higher volume of blood is pumped and the blood pressure rises.307 We call this tachycardia. Anything that causes the resting heart rate to increase accelerates the risk of hypertension. In fact for every 10 beats/min increase in heart rate the risk of hypertension increases by 42%.308 You see, athletes have very low heart rates. People who have not been exercising have a high heart rate, and a high risk of hypertension. Stress also raises the heart (pulse) rate.

Does Stress Run In Your Blood?

Are you easily startled? This is part of your response to stress and is an early sign you may be headed for hypertension.309 Besides raising the heart rate and tightening the blood vessels, another way stress causes hypertension and blood clots is that it thickens the blood so that it requires more pressure to pump it through the blood vessels.310 People who never get anxious have a significantly lower incidence of hypertension.311 “Take therefore no thought for the morrow: for the things of itself. Sufficient unto the day is the evil thereof.”312

Another way to look at it is that people who handle stressful life events more effectively have greater success maintaining healthy blood pressure.313 This may have something to do with personality. The easy-going type B personalities go easier on blood pressure than their type A counterparts.314 Easy-going, laid-back, calm, relaxed responses to life’s challenges predict normal blood pressures.315 People with cool tempers experience calmer blood pressures and fewer heart attacks.316 “He that is slow to anger is better than the mighty; and he that ruleth his spirit rather seek ye the kingdom of God; and all these things shall be added unto you.”317

People who put the past behind them, not ruminating about past anger-provoking events are at lower risk for hypertension and its complications.325 “Brethren, I count not myself to have apprehended: but this one thing I do, forgetting those things which are behind, and reaching forth unto those things which are before, I press toward the mark for the prize of the high calling of God in Christ Jesus.”318

Stressful Life Events

One way to increase your stress is to subject your mind to the impressions being made on television. Two (2) hours a day of television watching increases the risk of hypertension by 40%.326 As I am sure you are well aware (if you think about it), the main character of the television show plot is either in trouble, getting into trouble or getting out of trouble: life just isn’t that bad.

Difficulty paying medical expenses is associated with increased hypertension.327 It is also the number one reason for bankruptcy in the United States.328

Work Pleasure

The rewards of gainful, meaningful employment bear mentioning. People happy with their jobs and their income are more likely to experience happy, healthy blood pressure.330, 331 People who enjoy their jobs and are not overworked or depressed have lower blood pressures.332 Having purpose in life helps moderate blood pressure.333

Social Pleasure

Looking at the social aspects of blood pressure control: people with close supportive friends have lower blood pressures.334 Indeed, sharing a negative life experience with an ambivalent friend raises blood pressure and heart rate. Alternatively sharing the same event with a caring, supportive friend lowers blood pressure and heart rate. Similarly, blood pressure levels are lowest when people are with family and highest when amongst strangers.335
Pet Power
Does keeping an animal help blood pressure? Yes, loving pets have a blood pressure lowering effect for people with hypertension.336

Music Magic
Do you enjoy listening to music? Music can help blood pressure.337 Blood pressures respond positively to classical music, but not jazz or pop.338

Emerging Urban Danger
Environment plays a significant role in stress. Moving to the city? Expect a 23-point rise in your systolic blood pressure and a 9-point rise in your diastolic blood pressure.359 There are hazards in just commuting to a city. Traffic related air pollution and noise significantly increases the risk of hypertension.340 People living in small rural towns have half the risk of hypertension as people living in large industrialized cities.341

Rural Relief
Quietness, solitude and silence soothe the nerves and lower your blood pressure.342,343 The stillness is remedial, “Be still, and know that I am God.”344 People living where the din of busy roads never reaches their ears have a 37% lower risk of hypertension.345 Outdoor walks, enjoying trees, flowers, and other wonders of God’s great nature, lower blood pressure and stress.346 Even bringing the outdoors into the home through houseplants has been shown to improve blood pressure.347,348

Life’s Pleasure: Helping Others
If you have some extra time and want to do something beneficial for your blood pressure, volunteering is a wonderful aid in keeping blood pressures normal.349 Find someone else who could use your help and give of yourself to the needs of the world. “It is more blessed to give than to receive.”350

Freedom From Guilt and Resentment
Guilt and resentment cause hypertension. Freedom from guilt351 and resentment352 lowers blood pressure. Okay, how do I do that? Easier said than done! Well, it’s not really something you can do on your own. You’re going to need help. Only God can accomplish this, with your cooperation. Are you ready?
Guilt comes from sin. “Sin is the transgression of the law.”354 Being out of harmony with the loving God of nature and the universe; of this you must first be conscious. You probably already have a sense that something isn’t right, that you could use some more peace in your life?
How do I know if I have guilt? One of two ways: 1. Compare your life to the standard of God’s holy law355 and see if there is a disparity between what you are and what it enjoins, “for by the law is the knowledge of sin.”356 Go to the law, read the first commandment355 and ask God to reveal to you if you are in harmony with it. Then proceed to the following commandments and ask the same questions. 2. Compare your life with that of Jesus Christ, “Who did no sin.”357 meaning that His life was an example of what it is like to be at complete peace with God and keep His law free of guilt. Read His biographies at the beginning of the new testament (Mathew, Mark, Luke, John) of the Bible and ask God to reveal to you the differences between what you are studying and what your life could have been like if you had been like Jesus. This is another way of comparing your life to what the law enjoins and discovering where you may have sinned.
If, after trying this, you find yourself believing that you are problem free, it may only indicate that you have undertaken this comparison too superficially and need to spend a little more time with it. A thorough investigation will reveal that, “all have sinned, and come short of the glory of God.”358 And, “If we say that we have no sin, we deceive ourselves, and the truth is not in us.”359

God’s Holy Spirit will help you and your conscience will be awakened to see the evil of sin, its power and guilt. Sin separates you from God and peace, and brings you into bondage. It brings feelings of guilt that result in physical symptoms like hypertension. The more you struggle on your own to escape, “the more you realize your helplessness. Your motives are impure; your heart is unclean. You see that your life has been filled with selfishness and sin. You long to be forgiven, to be cleansed and to be set free. Harmony with God, likeness to Him, what can you do to obtain it?”360

“It is peace that you need: heaven’s forgiveness, peace and love in the soul. Money cannot buy it, intellect cannot procure it, wisdom cannot attain to it; you can never hope by your own efforts to secure it. But God offers it to you as a gift, “without money and without price.” Isaiah 55:1. It is yours if you will but reach out your hand and grasp it. The Lord says, “Though your sins be as scarlet, they shall be as white as snow; though they be red like crimson, they shall be as wool.” Isaiah 1:18. “A new heart also will I give you, and a new spirit will I put within you.” Ezekiel 36:26.
Confess your sins, and in heart put them away. Say, “Dear God, I have sinned and have suffered the results of a sense of guilt and have the disease of high blood pressure. Please forgive me and give me a new heart to know you and live free from offence toward you and others.” Resolve to give yourself to God. “Now go to Him, and ask that He will wash away your sins and give you a new heart. Then believe that He does this because He has promised. This is the lesson which Jesus taught while He was on earth, that the gift which God promises us, we must believe we do receive, and it is ours. Jesus healed the people of their diseases when they had faith in His power; He helped them in the things which they could see, thus inspiring them with confidence in Him concerning things which they could not see--leading them to believe in His power to forgive sins. This He plainly stated in the healing of the man sick with palsy: ‘That ye may know that the Son of man hath power on earth to forgive sins, (then saith He to the sick of the palsy,) Arise, take up thy bed, and go unto thine house.’ Matthew 9:6. So also John the evangelist says, speaking of the miracles of Christ, ‘These are written, that ye might believe that Jesus is the Christ, the Son of God; and that believing ye might have life through His name.’ John 20:31.
To maintain peace; freedom from blood pressure raising guilt, “Fight the good fight of faith,”361 believe that God has taken care of your past sin(s), read daily His word to learn new things that will help keep blood (pressure raising) guilt away and “press toward the mark for the prize of the high calling of God in Christ Jesus.”362 “To them who by patient continuance in well doing seek for glory and honor and immortality, eternal life:”363 Rest in the assurance of eternal life and a good afterlife.
Resentment and Bitterness: Resentment and bitterness arises out of misunderstanding between people. It comes from not forgiving someone else. It is a form of anger. Resentment and bitterness grow if not checked. Do not allow the wound to fester and break out in poisoned words, which taint the minds of those who hear. Do not allow bitter thoughts to continue to fill your mind. “Thou shalt not avenge, nor bear any grudge against the children of thy people, but thou shalt love thy neighbour as thyself: I am the LORD.”364
Go to your brother, and in humility and sincerity talk with him about the matter. “Moreover if thy brother shall trespass against thee, go and tell him his fault between thee and him alone: if he shall hear thee, thou hast gained thy brother. But if he will not hear thee, then take with thee one or two more, that in the mouth of two or three witnesses every word may be established. And if he shall neglect to hear them, tell it unto the church: but if he neglect to hear the church, let him be unto thee as an heathen man and a publican.”365 At this point you have done your part, no matter what the outcome, choose to let God have the feelings of resentment and bitterness and fill your mind with glad saying like from the Bible books of Psalms or Proverbs.

Patience and Forgiveness Lower Blood Pressure
People who cultivate the characteristic of patience enjoy much more normal blood pressures.366 This reminds me of a very important passage
in the last book of the Bible, “Here is the patience of the saints: here are they that keep the commandments of God, and the faith of Jesus.”

A spirit of forgiveness has been shown to bring blood pressure down. Forgive one another, even as God for Christ's sake hath forgiven you.

Religion, Bible Study and Prayer Lower Blood Pressure

In stressful situations, prayer has been shown to lower blood pressure. Further, people who attend religious services, and pray or study the Bible frequently, have a 40% lower risk of hypertension. People who substituted religious media (TV or Radio) for personal experience and social contact with other believers suffered elevated blood pressures.

Most people find wars and natural disasters like hurricanes and earthquakes stressful. In the wake of earthquakes and other stress raising natural disasters more people come down with high blood pressure. I would advise you to avoid this source of stress, but I would be misleading you if I asserted that these situations were going to become less frequent. “For nation shall rise against nation, and kingdom against kingdom: and there shall be earthquakes in divers places, and there shall be famines and troubles: these are the beginnings of sorrows.” In other words, you have not seen anything yet. And as we get closer to the second coming of Jesus Christ these things will be come more and more common. Stress management needs to be God derived to meet such impending devastation.

Does Love Last Forever?

We have already discussed the impact of major stressful life events on the development of high blood pressure. One such major stressful life event is the loss of a loved one. A study out of the University of Michigan (Ann Arbor), revealed that older adults who lost a loved one to death, but who believe in a good afterlife were much less likely to develop hypertension. This raises an important question; do we have reason to believe in a good afterlife? If not, we’re all headed for high blood pressure. If God is, as many religions teach, just waiting to roast sinners in the fires of hell for eternity, stage II hypertension here we come! But what is the truth about the afterlife?

Jesus was right up front in telling us, that after He left this earth, He would be preparing to have us join Him. “Let not your heart be troubled: ye believe in God, believe also in me. In my Father's house are many mansions: if it were not so, I would have told you. I go to prepare a place for you. And if I go and prepare a place for you, I will come again, and receive you unto myself; that where I am, there ye may be also.” When are we going to join Him? When do we get this reward? “For the Son of man shall come in the glory of his Father with his angels; and then he shall reward every man according to his works.” He will be rewarding everyone at His second coming. How will He know who to give the good rewards to and who to exclude? “I charge thee therefore before God, and the Lord Jesus Christ, who shall judge the quick and the dead at his appearing and his kingdom;” “Henceforth there is laid up for me a crown of righteousness, which the Lord, the righteous judge, shall give me at that day: and not to me only, but unto all them also that love his appearing.” God makes a decision on that in a court setting called the judgment. Clearly no judgment has been made or reward given at this point in history; it does not occur until His second coming. Even Paul waits for that day to receive his “crown of righteousness”. So all, dead or alive, good or evil, are still awaiting for the judgment and their reward.

What about those who have already died? Jesus said, “Marvel not at this: for the hour is coming, in the which all that are in the graves shall hear his voice, And shall come forth; they that have done good, unto the resurrection of life; and they that have done evil, unto the resurrection of damnation.” Jesus has yet to raise the dead so that they can receive their reward. No one is currently burning in hell or enjoying heaven. What are the dead doing right now? Can I talk to one of them? Will any of them remember me? What says the Scriptures concerning these things? The beloved David declares that man is not conscious in death. “His breath goeth forth, he returneth to his earth; in that very day his thoughts perish.” In death there is no remembrance of thee; in the grave who shall give thee thanks?” The dead praise not the Lord, neither any that go down into silence.” Solomon bears the same testimony: “The living know that they shall die; but the dead know not anything.” Their love, and their hatred, and their envy, is now perished; neither have they any more a portion forever in anything that is done under the sun.” “There is no work, nor device, nor knowledge, nor wisdom, in the grave, whither thou goest.”

When will this resurrection take place? “For this we say unto you by the word of the Lord, that we which are alive [and] remain unto the coming of the Lord shall not prevent them which are asleep. For the Lord himself shall descend from heaven with a shout, with the voice of the archangel, and with the trump of God: and the dead in Christ shall rise first: Then we which are alive [and] remain shall be caught up together with them in the clouds, to meet the Lord in the air: and so shall we ever be with the Lord. Wherefore comfort one another with these words.” That is really comforting and helps produce good blood pressure.

Even the Old Testament character Job was aware of this future resurrection: “If a man die, shall he live again? all the days of my appointed time will I wait, till my change come. Thou shalt call, and I will answer thee: thou wilt have a desire to the work of thine hands.” What change was Job anticipating at the ressurection? Paul answers this for us, “In a moment, in the twinkling of an eye, at the last trump: for the trumpet shall sound, and the dead shall be raised incorruptible, and we shall be changed. For this corruptible must put on incorruption, and this mortal must put on immortality. So when this corruptible shall have put on incorruption, and this mortal shall have put on immortality, then shall be brought to pass the saying that is written, Death is swallowed up in victory. O death, where is thy sting? O grave, where is thy victory? The sting of death is sin; and the strength of sin is the law.” But thanks be to God, which giveth us the victory through our Lord Jesus Christ. Therefore, my beloved brethren, be ye stedfast, unmoveable, always abounding in the work of the Lord, forasmuch as ye know that your labor is not in vain in the Lord.” If you are faithful to God, you have the promise of a new body at Jesus’ return, free from diseases such as hypertension.

The outcome of the judgment at the second coming of Jesus is that the righteous go to heaven and the wicked to hell. For some people the resurrection is the beginning of a happy afterlife, these are the ones we discussed earlier who believe in a good afterlife and experience lower blood pressure now. “And many of them that sleep in the dust of the earth shall awake, some to everlasting life, and some to shame and everlasting contempt.”

And what is the punishment of those who choose to reject God’s offer of forgiveness and mercy? Is hell forever? Contemplating hell is daunting, and the thought of being condemned to go there could certainly raise blood pressure. Why should there even be a hell? “Then shall he say also unto them on the left hand, Depart from me, ye cursed, into everlasting fire, prepared for the devil and his angels.” Hell was never intended for you or I. It is for the devil and his angels who oppose God. But, if we join the devil in sin, in fighting the righteous law of God, then we are choosing to join the devil in his plight. Really, God would rather we repent and choose His way of life: “The Lord said, The soul that sinneth it shall die.”

Do the wicked suffer in the fires of hell through all eternity? “For, behold, the day cometh, that shall burn as an oven; and all the proud, yea, and all that do wickedly, shall be stubble: and the day that shall burn them up, saith the LORD of hosts, that it shall leave them neither root nor branch. And ye shall tread down the wicked; for they shall be ashes under the soles of your feet in the day that I shall do this, saith the LORD of hosts.” So really, although it is a fearful ordeal, it is self-limited, it comes to an end, all that is left is ashes. Matthew speaks of this, “Whose fan is in his hand, and he will throughly purge his floor, and gather his wheat into the garner; but he will burn up the chaff with unquenchable fire.” Burned Up!

Has this ever happened before? It has: “Even as Sodom and Gomorrah, and the cities about them in like manner, giving themselves over to excess, to do whatever their hearts desired, even as Lot’s wife.” They thought they were going to escape, but they were still destroyed. What is the punishment of those who choose to reject God’s offer of forgiveness and mercy? Is hell forever? Contemplating hell is daunting, and the thought of being condemned to go there could certainly raise blood pressure. Why should there even be a hell? “Then shall he say also unto them on the left hand, Depart from me, ye cursed, into everlasting fire, prepared for the devil and his angels.” Hell was never intended for you or I. It is for the devil and his angels who oppose God. But, if we join the devil in sin, in fighting the righteous law of God, then we are choosing to join the devil in his plight. Really, God would rather we repent and choose His way of life: “The Lord said, The soul that sinneth it shall die.”

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over to fornication, and going after strange flesh, are set forth for an example, suffering the vengeance of eternal fire.”

Failure.

Obesity, a sedentary lifestyle, poorly clad chilled extremities and kidney failure. A sedentary lifestyle causing volume overload include eating too much salt, stress, having poor cardiovascular fitness (being out of shape), caffeine, alcohol, drugs, fried foods, fructose, sodium, MSG and overeating.

Sedentary lifestyle causing volume overload include eating too much salt, stress, having poor cardiovascular fitness (being out of shape), caffeine, alcohol, drugs, fried foods, fructose, sodium, MSG and overeating.

Finally, if the volume of blood increases, this increases the amount of blood entering the heart, which in turn increases the amount of blood leaving the heart and with each beat this increases the overall blood pressure. We often refer to this phenomenon as fluid retention.

Lifestyle habits causing volume overload include eating too much salt, obesity, a sedentary lifestyle, poorly clad chilled extremities and kidney failure.

Summary: Letting Hypertension Go!

- Keep well hydrated with pure vitalizing water; add a little fresh lemon juice too.
- Take regular time for enjoyable exercise in the great outdoors, far from traffic, pollution, cities and stressful crowds.
- Get plenty of warm sunshine and invigorating fresh air.
- Eat a delicious unrefined whole plant based diet, high in fiber, minerals, vitamins and antioxidants; low in salt, with no refined carbohydrates, processed fats, or hypertension causing animal products.
- Avoid the pitfalls of tobacco, caffeine, alcohol, drugs, fried foods, fructose, sodium, MSG and overeating.
- Make weight control a habit.
- Guard your sleep and evaluate its quality for effectiveness.
- Let God know you need Him to release you from stress, guilt, fear and hypertension. Rely on Him for guidance as you come more into line with His original plan for diet and lifestyle.

Review and Recap

Let’s review: Blood pressure is a produce of the pumpung of the heart, the size of the blood vessel through which the blood must flow, the thickness of the blood, and the volume of blood to be pumped.

A fast heart rate pumps more blood than normal and increases blood pressure. We call this tachycardia. Common causes of tachycardia are: stress, having poor cardiovascular fitness (being out of shape), caffeine, tobacco and dehydration.

If the blood vessels tighten up or constict, making the blood vessel smaller, higher blood pressure is required to get the required amount of blood to its destination. We refer to this tightening up effect as vasoconstriction. Vasoconstriction is caused by: psychological and physical stress, thermal stress from cold exposure, caffeine, tobacco, and dehydration.

Blood vessels normally expand and relax with each heartbeat. If the blood vessels become hard, their stiffness resists the free flow of blood and up goes the blood pressure. Atherosclerosis is an example of this process, so are sugar glycation, endothelial dysfunction, and stiffness of the blood vessels running through muscles from a sedentary lifestyle.

If the blood becomes thick and sluggish, more pressure is required to carry it through the blood vessels and hypertension results. When blood gets thick we say that the viscosity has increased too much. Examples of the blood thickening threats include: dehydration, overheating, psychological stress, a diet too rich in fat and refined carbohydrates, and high cholesterol or triglycerides.

If the blood vessels are being choked by something pressing on them from their sides, the effect is like putting your thumb over the end of a garden hose, the result is increased blood pressure. We call this mechanical compression. Things that press on the blood vessels include tissue swelling, atherosclerotic plaque, sugar coating called glycation (usually from diabetes), inflammation, and especially tight clothing like belts and elastic bands.

Finally, if the volume of blood increases, this increases the amount of blood entering the heart, which in turn increases the amount of blood leaving the heart and with each beat this increases the overall blood pressure. We often refer to this phenomenon as fluid retention.

Lifestyle habits causing volume overload include eating too much salt, obesity, a sedentary lifestyle, poorly clad chilled extremities and kidney failure.

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