

HEART DISEASE – #1 HEALTH ISSUE WORLD WIDE

By

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The 2017 statistics are staggering! According to the American Heart Association, close to a 100 million Americans are living with some form of cardiovascular disease.

Around the world, 1 of 3 persons is DYING, every 40 seconds of a heart attack, stroke, heart failure, a disease of the arteries or some other definition of cardiovascular disease. It's hard to think that anyone doesn't know someone who has dealt with the nations, the WORLD'S, #1 killer. They may say that cardiovascular disease is on the decline and our funding is to the tune of \$30 billions per year, but doesn't look like much progress is going on. Maybe it's because we're looking at the wrong root of the problem.

Before we jump into the real root of this important and significant health issue, let's first make sure we understand what the problem is and all its parts.

”Cardio” and “Vascular” – Means the Heart

So what is cardiovascular disease? Well, let's first break down the words. Cardio and Vascular. Cardio references the heart. Actually, in some circles, it's actually called Heart Disease. Something about the heart has gone wrong. Either it's not working properly, it's clogged with something, it stopped working, it's too slow, too fast, whatever, but it's a heart problem.

However, we often forget about the “other “ word, the Vascular. Which is, is the real root of the problem, vascular is the general term used for the arteries and veins that lead to and away from the heart. Actually it's the entire network of pipes, tunnels, plumbing, whatever you want to call it, that life giving blood flows through. And these networks are incredibly important because they flow around every organ, tissue, and system in the body. Without these networks, nothing from oxygen to nutrients could get into our body.

So cardiovascular disease, commonly referred to as heart disease, is basically a range of conditions that all relate to the functioning of your heart. Most of these conditions affect the tiny blood vessels that either line the heart or the vascular networks that feed blood into the

heart. The disease also includes heart beat, or rhythm problems (arrhythmias), heart defects, and age related issues like stiffening of certain valves.

You have heard of the symptoms. The biggest one being a heart attack. The saying “don’t give me a heart attack” is probably one we’ve all heard our parents or, if we are a parent, have said to our children. It’s pretty well known a heart attack is not a good thing to have and most of them are fatal. But the heart attack, chest pain, or stroke, is actually a result of the disease, the symptom, the cause is usually a narrowing or blockage of one or more of the vascular systems that lead to and around the heart.

Your heart is basically a pump and just like any pump, it pushes stuff out and sucks things in. The “stuff” and “thing” is blood. It’s size is about the size of your fist and it’s dividing in half, the right and left. This divide is very important because it keeps the blood filled with oxygen on one side and the blood that’s been depleted of oxygen on the other. The right side will pump blood to the lungs so it can get a fresh supply of oxygen, it then goes into the left side where now the oxygenated blood can get pumped to the rest of the body. After the blood goes around the body and “drops” off it’s oxygen it returns to the right side to get pumped to the lungs to get re-oxygenated and the whole song and beat plays again!

Although there are some more intricacies to the heart, the main thing I am trying to demonstrate is that all this pumping is important but the health of the pipes and tubes, arteries and veins, that is transporting this blood is critical. If there is any deterioration, breakage, or dysfunction in these channels, the heart won’t be able to do its work properly.

Your Vascular system is HUGE – 2 trillion cells, 9 Tennis courts laid out

However, the most common cause of heart disease is due to a narrowing, blocking, or stiffening of blood vessels that prevent your heart from getting enough blood.

And now, this comes to the “who done it” of the cardiovascular disease story. The true culprit of this terrible, killer of a disease and robber of the quality of life of so many is the dysfunction of an “area” of your body called the endothelium.

The endothelium is a thin single sheet of cells that line the inside of every artery and vein in the body. The area they cover is huge, close to 9 tennis courts if laid out and consists of over 2 trillion cells. This layer is actually called an organ and is one of the largest organs of

the body. When you think of your veins and arteries think of them as tubes, just like the water hose outside your house. The layer on the outside is connective tissue, it holds everything together the very inside is smooth muscle, because the “hose” needs to contract and relax, and the very inside the “coating” inside the hose is the endothelium, made up of trillions of cells all linked together. Endothelial cells line every area in the body that comes into contact with blood, it is present in the thickest of arteries to the thinnest of capillaries.

Arteries and Veins- Gatekeepers to heart, brain, kidney health & More!

The endothelium is the single layer that stands between your blood and every tissue, organ, muscle, and system in the body. It controls how much, what, and the pace at which nutrients get from the blood into every system in the body. This vital interaction is why it's implicated in end organ disease such as neurological, renal, hepatic, vascular, dermatologic, immunologic, and the obvious, cardiac. It's pretty simple to understand why its linked to all these health issues when you understand that if the gatekeeper to the health of every system in the body is in dysfunction then so is all the places it feeds.

Another critical function besides keeping toxic nutrients out of the organs and regulating the good ones in, is the endothelium role in stimulating the smooth muscles inside the “tubes”. The endothelium regulates vascular tone, causing the vascular system to contract, vasoconstriction, and relax, vasodilate, providing certain rates of blood flow and perfusion pressure to organs. This is particularly important under states of stress, increasing blood flow by constricting the blood vessels can get healthy blood flow to areas to enhance wound healing, healthy inflammation, and recovery. Dilating or relaxing the blood vessels can cause excess heat elimination or body temperature cooling and also help with transporting a greater amount of nutrients to certain areas of the body like muscles, “feeling the pump”.

So why is the endothelium so important to cardiovascular disease?

As we mentioned earlier, cardiovascular disease is defined as the narrowing, blocking, or stiffening of the vascular network, the arteries and veins in particular. Whatever is narrowing or blocking the “canal” is growing or sticking on the endothelium. The “whatever” is called plaque. And it can either make the vascular area very stiff or get caked up so bad it narrows or blocks the flow of blood.

Plaque is made up a mixture of fats, cholesterol, calcium, cellular waste, and fibrin, a material involved in blood clotting. Plaque begins to coat certain areas of the endothelium and begins to thicken, as it does, it narrows the passages and can even start to break off and cause a “blood jam”, also called a clot. Depending on where the clot or blockage is it can either be called a heart attack or a stroke, which is in the brain.

So how does all this tie together? Well, plaque is one of the major contributors of causing the endothelium to not be able to work properly, endothelium dysfunction. There are many things that cause the formation of plaque, but that doesn't mean it will form on these endothelium cells if they are healthy. What traditional medicine calls the cause of heart disease, plaque, what it really is, is the result of poor endothelium health. If these cells are healthy and resistant to injury and stress, then no plaque would form, therefore causing little blockage, narrowing, or stiffness.

The true cause of cardiovascular disease or more appropriately vascular disease, because it's all about the vascular system, is related to the health of the endothelium, the delicate, thin layer of cells that line every blood vessel. Every day toxic materials get transported by the blood, it's an inevitable evil. We breath in, absorb, breakdown, and create toxins in our body, they have to be transported by our vascular system to be neutralized and eliminated. But these toxins can cause destruction on the “way out”. They damage the endothelium and create cuts and nicks that result in toxins, inflammatory elements, and oxidized fats through the barrier and into organs and tissue. The once protective and impenetrable “wall” is now porous and poor health becomes systemic or in other words, uncontrollable.

In the case of cardiovascular health, all the damage caused by oxidized fats, toxins, and metabolites penetrating through the endothelial layer results in the oxidative and inflammatory responses that cause the development of plaque deposits. Ironically, the plaque that is trying to keep your heart from becoming filled with toxins ends up suffocating it.