Life Flow One
The Solution For Heart Disease

by
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Heart Disease

What Does A Free Radical Do?

Now, what does a free radical do when it gets inside your body?

Basically, it is probably the single most destructive item that enters your body. One of the original researchers into the action of free radicals is Dr. Denham Harmen who said:

Dietary changes which reduce intake of free radicals "offers the prospect of an increase in the average life expectancy to beyond 85 years and a significant increase in the number of people who will live to well beyond 100 years."

The *free radical* is the most likely source of all cancer and heart disease -- and probably every other form of disease not caused by a bacteria.

How does it do this?

There are six different activities of a free radical -- all of them bad news for you.

Free Radical Activities

1. One of the nasty activities of one free radical is to cause MORE free radicals to be created. What happens is that a single free radical hits some type of material in the body which is very susceptible to this action. Fat happens to be one of those types of substances. So, when a free radical hits some amount of fat, it basically causes the fat to turn rancid inside the body. This is not a pleasant thing to contemplate, but you actually have a fair amount of rancid fat in your body. The whole mass of rancid fat is

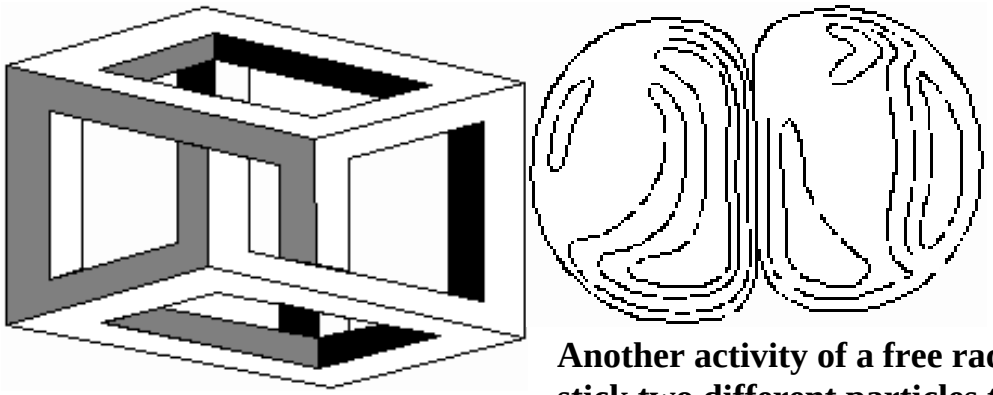
made up of millions and billions of free radicals, going off in all directions at once.

I've described how a free radical can hit some fat and cause many more free radicals.

But, there is something else it can hit that is far, far worse. That's toxic metals you might have in your body -- like lead. You can get lead into your body from auto exhaust fumes, and the lead will stay in your body for years and years.

When a free radical hits this toxic lead the lead itself doesn't change, but there is an immediate creation of millions more free radicals. Thus, of all the things a free radical can hit, hitting some tiny amount of toxic metal inside your body would cause the most harm.

I'll refer to this again because chelation removes that toxic metal and this makes for fantastic improvements in your health because this mechanism for creating billions of free radicals is vanished !



2. Another activity of a free radical is to stick two different particles together -- things that ought not be stuck to one another. For instance, you have the DNA, or blueprint, for every cell. It ought to be a separate particle inside the cell. But, a free radical can cause that DNA molecule to get stuck to some protein substance. This really screws up the DNA action. There wouldn't be a lot more free radicals created when this happens, but some particle in your body, like a DNA molecule, won't be able to function as it originally did.

3. Cells depend a great deal on the membrane, or wall, that keeps the outside stuff outside, and allows the stuff inside the cell to remain separate from the stuff outside. This membrane is largely made of cholesterol, but it has thousands of special parts which allow the outside stuff to go inside, when needed, or allows the inside stuff to go outside when needed. These are all very complex arrangements which allow the cell to take in water and food, as needed, and to push out the toxins and waste products that are not needed in the cell. A free radical can damage the integrity of the membrane of a cell -- damage its ability to pull the good stuff in, or kick the bad stuff out. When cells are threatened they manufacture cholesterol to make the cell membrane thicker -- more protection. Some of the

cholesterol is going to leak out -- causing an increase in the amount of cholesterol in the blood. Can this be the CAUSE of heart disease? There is much of modern medicine that confuses effects with cause. When a free radical attacks a cell, it creates more cholesterol. Doctors see the extra cholesterol and decide that the cholesterol is the source of the problem -- it is not. The cholesterol is nothing more than a symptom of some real cause -- free radicals attacking the cell. Click here to read scientific studies about cholesterol and cell membranes.

4. You've got stuff in your body that finishes the digestion process if it didn't get thoroughly done in the stomach. This stuff has a fancy name and description, included in the Endnote. Free radicals can cause these special digestive juices to invade some cell and basically start eating it from the inside.

5. As you get older you often get "age spots" on your skin. Those are sometimes called *liver spots*. This is nothing more than a pigment, or dye, created by a free radical penetrating into a cell. The pigment is created inside the cell and the cell takes on some color. There may be only a little damage to the function of the cell, but there has been some damage. As more and more cells get colored, and as the color deepens, the damage is greater. It is not only the cells of skin, but any cell, anywhere in the body, that can get colored and damaged in this way.

6. Finally, a free radical inside the cell can damage the blueprint by which that cell creates new cells. That is the cause of cancer and the beginning of heart disease and is worthy of a whole section.

Free Radical Damage Of DNA

DNA means the blueprint inside each cell -- the plan that tells the cell how to divide into new cells, and when to do it. The DNA is a very complex molecule made up of millions of parts. In fact, if all these parts were stretched out in a straight line, the DNA of ONE cell would measure about six feet long! Since there are an amazing 100 trillion cells in our body, each with that six-foot strand of DNA, we actually have billions of miles of DNA structure.

One way a free radical (remember, it is very small -- the size of a single atom in many cases) can damage a cell is that it gets inside a cell and because it is looking for a mate, it attaches to some other atomic particle

inside the cell. The cell, of course, has all sorts of items inside, many of them are combinations of atoms with a few spare electrons circling on the outside rings. All it takes is for the hydrogen atom, for instance, as a free radical, to attach itself to some other particle inside the cell and that could be enough to cause that other particle to malfunction and kill the cell.

That wouldn't be so bad, but there is something else that often happens. It has probably already happened to you!

Every cell has this DNA blueprint inside, a plan for the reproduction of more similar cells. A free radical can alter the blue print -- just by adding this one little electron in some place where it doesn't belong.

Remember, that DNA contains millions of atoms, and any one of them might be exactly the one that causes the DNA blueprint to produce a cancer the next time it divides, instead of a new healthy cell.

When the blueprint is altered, sometimes that cell then reproduces wrong -- it could reproduce into a defective cell that would die quickly, or it could reproduce into a defective cell that would grow and start a cancer!

And, that is how cancers and other strange aberrations are created in the body.

Normal healthy cells, in any part of your body, get invaded by some free radical and the blueprint gets altered. You can consider it just like someone taking the eraser on the end of a pencil and erasing a bit of a blueprint. It could be a little smudge mark, or it could be some lines are erased. But, the eraser alters the blueprint so it can't be used to make the original design any more.

Or, it might be like a stray pencil adding a few extra lines to the blueprint -- so the hot water pipe is connected to the electrical wall switch, or something like that.

You can see the entire picture taking shape now.

Somehow, you get some of those free radicals into your body. They get into the blood stream. More of them are manufactured inside your body.

They can cause damage to the inner lining of the artery, then more of the free radicals can rather easily penetrate into the cells in the muscle layer of the artery. These muscle cells are particularly susceptible to free radical damage. The damage can be changes made in the blueprint for the creation of new cells. When this happens new muscle cell will start being created much too rapidly. This is what we call a tumor.

A tumor is an abnormal growth of cells where the growth is not malignant (poisonous). They are often called *benign tumors,* meaning that they are

"good" tumors." Of course that term is not quite right because there is really nothing good about them except that they are not malignant.

As these muscle cells grow much too rapidly, and create these tumors, the growth has nowhere to go except to intrude out into the space where the blood flows through the artery.

In other words, there is a bulge from the middle layer of the artery, pushing inward, through the inner lining of the artery. If that bulge kept on growing it could choke off the blood flow, all by itself. But that doesn't happen.

These tumors, or bulges, cannot continue to exist without all those abnormal cells continuing to get some fresh blood to keep them alive. It's the nature of these particular growths that all of their blood supply comes from blood seeping through the mass of cells -- the growth doesn't develop its own network of small blood vessels to carry blood into the inside of the growth. So, there is a natural limit to the size of these things.

But, there is another action of the body. When that tumor grows out into the area where the blood flows, and breaks through more of that inner lining, the body sees this as something dangerous to the body. The body has many systems for defending itself. One of those kicks in here. The body starts depositing a protective layer over the damaged area in the artery.

That protective layer includes cholesterol as one of the most important defensive substances the body has. Cholesterol is so important to the body that every cell in the body can manufacture it. Cells will make cholesterol whenever the cell is under attack of some sort. So, as the tumor in the muscle layer of the artery grows out into the blood stream, that area is coated with this protective layer of cholesterol.

It is not actually the bulge which causes a heart attack. If that bulge were to grow out enough to stop the entire flow of blood, it would cause a heart attack, but it doesn't grow that much. One of the direct causes of heart attacks is the *hardening* of the arteries.

As the arteries become harder the more useful term would be they become less elastic -- they are less able to get smaller and larger as the body needs less or more blood. These arteries we have can increase in size when the body needs more blood, and get smaller when we don't need the blood. As that ability to tighten and loosen is lost, there can be a time when the body needs more blood, the arteries don't expand, and you have a heart attack.

But, the real cause of hardening of the arteries is NOT that this coating of cholesterol attracts calcium. That is false data which even I believed for many years until I reviewed more recent data.

The real reason for hardening of the arteries is that the growth gets large enough that the center portion of the mass doesn't get a blood supply so it dies! The process of death is that the cell gradually loses its ability get rid of toxins, including calcium, and turns into a rock of calcium.

So, my earlier descriptions were almost accurate -- it's a matter of timing. The calcification process is there, but it starts quite a bit after the abnormal growth is caused by free radicals.

Some doctors believe that the high cholesterol in the blood stream allows that cholesterol to be affected by other substances, and free radicals created. Thus, these doctors believe that the cholesterol, oxidized, does cause heart disease. I haven't studied this concept much, but it appears that it is a different way of looking at the free radical concept.

Heart Disease?

Thirty years ago your parents would use the phrase, *calcification of the arteries*, or *hardening of the arteries* to describe heart disease.

It is part of the terrible campaign to convince you of the lies about cholesterol that the part calcium plays in heart disease has been deliberately suppressed. You don't hear that term any more -- calcification.

When *Time Magazine* and other false information sources talk about heart disease they refer to it as a disease caused by a build-up of cholesterol in the arteries. This is only partly true and omits the real villain which is calcium. The arteries don't get hard until the calcium starts to build up, and it actually builds up INSIDE the cells. Prior to that time, even though there is a large tumor formed from free radical damage, the arteries are flexible enough so that the blood supply continues to get through. The triggering event for heart disease is the build-up of calcium inside the individual cells within the tumor, causing that area to become rigid -- not flexible.

Cholesterol is a soft, buttery substance. If the only build-up on the inside of the arteries were cholesterol, it would not get hard and the flow of blood would wash away the stuff. But, when that cholesterol gets mixed up with calcium the combination becomes hard. That is why the honest term, used before the drug companies started fiddling with the facts, was hardening of the arteries.

You have almost the whole picture now.

There is some damage to the inner lining of the artery. That damage exposes the middle layer to the flow of blood going through the artery. That blood usually carries along with it lots of free radicals.

Some of those free radicals penetrate into the muscle layer, into the cells of that muscle layer. Some of those free radicals damage the blueprint of those cells. With the damaged blueprint, when that cell comes to its time to divide into TWO new cells, the new cells grow more rapidly than they should. In fact, the cells with damaged blueprints just start growing abnormally, causing a tumor or bulge in that section of the artery.

The only place that bulge can go is inward -- into the stream of blood flowing through the artery. That, alone, could cause a blockage of the blood flow.

But, it gets worse.

The body tries to heal this abnormality in the artery by coating the area with a layer of cholesterol. Then, that bulge gets so large that the center portion of it dies from lack of a blood supply. That dead portion attracts calcium and cholesterol. This process causes the inside of that tumor to become hard, like a rock of calcium, glued together with cholesterol.

After this has gone on for many years that hardening can be so serious that the arteries can't expand to carry blood when needed. That area of the artery will be narrow. It would actually look blocked because the bulge is there and the artery is not expanded to provide more space for blood flow. So, in this sense, the bulge could actually be big enough to close the area off from blood flow, but remember that if the walls of the artery were flexible and healthy, they would expand outwards and the blockage would, suddenly, not be a blockage.

That's when you start having strokes -- when a small hunk of clotted blood breaks loose, floats along until it hits this obstruction and completely plugs the artery. You get a stoppage of blood and when that blood was supposed to nourish the heart, itself, you get a stroke. Many people die from these things!

I've glossed over the method by which that inner lining can be damaged in the first place. It is free radical damage, of course, but there are other ways too.

One of those ways is by your drinking homogenized milk!

Dr. Kurt Oster was the first to write about how homogenized milk is the original cause of heart disease. His book is hard to find. There is another author, Dr. William Douglass, whose book is more easily available and much more complete. See the bibliography page.

I'm not going to take the space here to explain how homogenized milk can cause damage to the inner lining of the artery -- get that data from Dr. Oster's or Dr. Douglass's books.

Endnotes

***Lysosome*: One of the minute bodies seen with the electron microscope in many types of cells, containing various hydrolytic enzymes and normally involved in the process of localized intracellular digestion. Injury to a lysosome is followed by release into the cell of the enzymes, which may damage the cell and give rise to wasting and other pathologic aspects of certain disease, as in muscular dystrophy. *Medical Dictionary*.**

***Lipofuscin*: any one of a class of fatty pigments formed by the solution of a pigment in fat. These are generally regarded as the coloring agents which are caused by free radicals and cause problems within the cell. *Medical Dictionary*.**

***Lipochrome*: any one of a group of fat-soluble hydrocarbon pigments, such as carotin, xanthophyll, lutein, chromophane, and the natural coloring material of butter, egg yolk, and yellow corn. They are also known as carotenoids. These are free radical fighters and good colors. *Medical Dictionary*.**

***DNA*: Deoxyribonucleic acid. "Normally, cells capable of reproducing themselves are in the resting state (i.e., 1 unit of DNA) most of the time. When they reproduce, they do so by rapidly doubling their DNA, dividing, and returning to the resting state. Thus at any instant 100 such normal cells may contain 101 units of DNA (99 cells with 1 unit each - plus 1 cell which is about to divide and has rapidly doubled its DNA to do so)." *Cecil Medical Textbook*, page 1723.**

The blueprint for a cell is the *DNA*. The DNA is a very complex molecule and has many, many atoms within it. Any one of these atoms might serve as a connecting point for a stray free radical. All it takes to change the blueprint, the DNA, is to alter one small part of it. That alteration is often in the form of a mutation -- a change in the new cell when it reproduces. A mutated cell can turn into a harmless tumor, or a malignant cancer. It is the growth of a harmless tumor, inside a cell in the muscle layer of the artery, which starts the growth which starts the bulge into the blood flow. That tumor growth bulges out into the blood stream and eventually can cause the blockage that we experience as heart attack.

Probably first theorized by Dr. Earl Benditt, of the University of Washington, led *The Origin of Atherosclerosis* in *Scientific American*, Feb. 1977, pp 74-85.

Incidentally, I'll be writing about shark cartilage in another book or newsletter some day, but there is a substance within shark cartilage which

inhibits the formation of these tiny blood capillaries which grow into a cancer and which feed that cancer and allow it to grow large. In the case of the tumors inside the artery, they don't grow large because these tumors don't allow the capillaries to build within them. But, some cancer growths do and this is how shark cartilage prevents cancer from growing -- it cuts off the blood supply within a cancer.

***Calcification*: derived from *calcium* plus the Latin word, *facere* = to make. This is the process by which organic tissue becomes hardened by a deposit of calcium salts within its substance. Also, there is the term *Monckeberg's arteriosclerosis*, meaning *arteriosclerosis* (thickening of the walls of the artery, and reduction of their elasticity) which takes place in the middle layer of the artery, called the *media*. This is a disease in which there are extensive deposits of calcium within this middle layer. It is also called Monckeberg's calcification, degeneration, sclerosis, or medial calcific sclerosis. Dr. Johann Georg Monckeberg was a pathologist at Bonn, lived from 1877 - 1925. He is credited with discovering the condition of calcification of the arteries.**

A report in the *New England Journal of Medicine*, 1987, shows that arteries increase in size when blockages occur. *N. Eng. J. Med.* 1987; 316 (22):1371-1375. The authors are S. Glagov, E. Weisenberg and C. K. Zarins. Obviously, if the artery is "hardened" from calcium, it would not be able to increase in size.