IT'S NOT WHAT YOU THINK ... WHAT CAUSES HEART ATTACKS?

Acute Coronary Syndrome

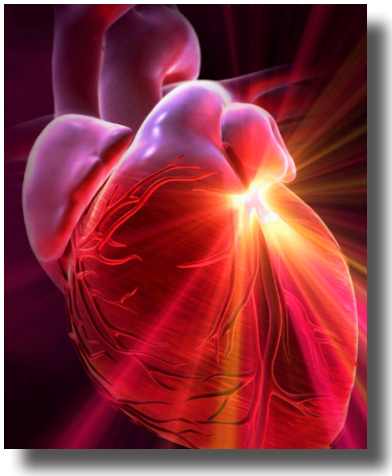
by Dr. Jack Tips (The Health Detective)

In the United States until 1930, heart attacks (myocardial infarctions) were very rare with only 3000 occurring per year, or 0.00019% of the population. By 1950, heart attacks skyrocketed to 500,000, far outpacing the growth of the population; and today in the USA, people are infarcting more than 1,255,000 times a year representing .04% of the population or a 200% increase. Even more alarming, the number of U.S. citizens with diagnosed heart disease is 27 million and growing.

Grim Reaper? Somewhere in that timeline, lurks a vicious serial killer. A critically important clue has been overlooked. Let's play detective and see if we can either confirm today's conventional theory, or uncover another theory that works even better. Throughout the annals of medical publications is a trail of research studies that reveal the primary cause of heart attacks. Is this primary cause being addressed by the multi-billion dollar cardiology industry? Let's find out.

The Conventional Theory – Coronary Obstruction. We all know what we're told about heart disease—and any 5th grader can remind you. The 70-year old, conventional theory is this:

- Arteries become blocked with plaque, a sticky substance that impedes blood flow,
- Cholesterol is blamed for plaque via the "foam cell[1]"
- process where free radicals oxidize LDL cholesterol,
- A blockage or obstruction (clot) occurs – an occluded coronary artery,
- The clot shuts off blood supply causing a heart attack,
- The heart starves for oxygen and cells die.



This is a very simple model. And very profitable. Entire billion-dollar industries are based on this very model including the pharmaceutical war on cholesterol and the lucrative heart bypass surgery industry. Yet, a 25-year study[2] of people who died from acute heart attacks reveals that only 25% of the people had arterial blockage. It seems we have a pervasive and complex industry that's ignoring 75% of the problem. Unfortunately, we've uncovered a serious discrepancy. Despite the fact that the conventional theory can be accurate some of the time, it does not address the leading cause. Perhaps this is why heart disease is a national pandemic in the United States—the primary cause is not being addressed.

Why would we even question the conventional theory when it's preached from every medical and media pulpit in the land? The first gnawing suspicion is the fact that cholesterol-lowering drugs have not lowered the incidence

1 **Foam cells** occur in an atheroma and are derived from macrophageswhich have engulfed low-density lipoproteins by endocytosis. The LDLs have crossed the endothelial barrier becoming oxidized by reactive oxygen species (free radicals). Foam cells form the fatty streaks of the plaques in the arteries. They are not dangerous, but can become a problem when they accumulate and create a necrotic center of atherosclerosis.

2 **The Relationship of Coronary Thrombosis To Coronary Atherosclerosis and Ischemic Heart Disease:** (A Necropsy Study Covering A Period of 25 Years), Spain, Bradess. American J. of the Medical Sciences: 12/1960 - Volume 240 - Issue 6 - pg 69-78

of heart disease[3]. The second gnawing suspicion is that heart bypass surgeries have not lowered heart disease either[4]. Hmmmm. As Bill Shakespeare wrote in *Hamlet: "Something is rotten in the state of Denmark"* except that it's in the USA where citizens are dropping like flies.

By 1940, cardiologists openly rejected the coronary obstruction hypothesis because it was obvious that it did not fit the facts. This was not that cardiologists were slow to embrace a new advancement: it was a case of the facts not fitting the clinical reality. However, with the decision of pharmacology to drive the research to fit their marketing agenda, coupled with the infiltration of the pharmaceutical agenda into the medical school curriculum, the arterial obstructive theory has been hammered home with a pile driver for over 70 years now, despite the fact that both the research studies and statistics stand opposed.

The reluctant cardiologists cited that coronary arteries were not the only arteries to suffer plaque build up. If arterial obstruction were the sole cause of heart attacks, why didn't other obstructed organs have attacks as well? They were not finding liver and kidney attacks from obstructed blood supply.

Medical researchers, Spain & Bradess, found that when a heart attack is fatal, the longer the time between the infarction and death, the more likely a blockage will occur. Thus, if a person with an infarction dies within an hour, only 16% will show blockage. But if a person with an infarction dies 24 hours later, then 53% will show blockage. Their research demonstrates that many of the so-called 'blockages' occurred after the heart attack—a consequence of the infarction, not a cause[5].

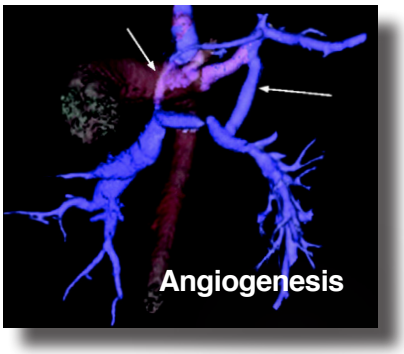
Mr. Peabody, "Set the Way Back Machine for 1940, Sherman."

Since the actual research is not congruent with the "facts," let's go back to the beginning and see if we can find that serial killer and avoid the red herrings[6] along the way. So let's set the "Way Back Machine" for 1940, ten years after heart attacks started going ballistic, and see if we can uncover the real culprit.


Dr. Berthold Kern

History of a Mystery. Between 1930 and 1940, a German physician, Dr. Berthold Kern performed thousands of autopsies and observed that the findings did not corroborate the currently established *coronary obstruction hypothesis*. He reported his findings through many channels, but the obstruction theory was already forming a juggernaut of misinformation. Dr. Kern, through meticulous documentation and observation found that the:

- **Coronary obstruction theory** could not adequately explain the obvious facts,
- **Cause of heart attacks** was a *"chemical destructive process"* caused by **metabolic acidosis**. This means that he found that lactic acid was accumulating in the heart muscle, particularly the left ventricle, depriving the heart of oxygen and ATP [Adenosine triphosphate, discovered in 1929]. The lack of oxygen was causing heart muscle cells to die from a shortage of ATP.
- **Heart infarction** was fundamentally unrelated to coronary artery disease. He did hundreds of autopsies of "death by coronary obstruction" that revealed that the heart damage occurred where there was no obstruction.
- **Peer-reviewed publications** in the United States corroborated his findings, specifically *"Circulation"* a Journal of the American Heart Association, 1980; *"These data support the concept that an occlusive coronary thrombus has no primary role in the pathogenesis of a myocardial infarct."*



- **Anastomoses.** In cases of obstructed blood supply, the heart uses its existing finely meshed network of blood vessels (called

3 Zhou Z, Rahme E, Pilote L (2006). "Are statins created equal? Evidence from randomized trials of pravastatin, simvastatin, and atorvastatin for cardiovascular disease prevention". *Am. Heart J.* **151** (2): 273–81.

4 Killip, T. New England Journal of Medicine, 1988, Aug 11;319(6):366-8.Twenty Years of Coronary Bypass Surgery.

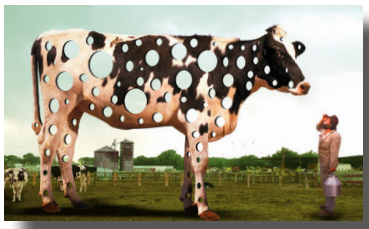
5 **Post Mortem Studies on Coronary Atherosclerosis in One Population Group**, *Chest*, J of AmCollege of Physicians, 1959.

6 **Red Herring** – an idiomatic expression referring to diverting attention away from an item of significance, e.g. misdirection or misleading information.

anastomoses or *collaterals*) to act as natural bypass channels to deliver blood and oxygen to the heart muscle. He saw the process of angiogenesis where the body Increases the size of the collateral blood vessels to allow blood to reach the heart muscle, despite arterial obstructions. [Nature already has a plan to protect the heart from blood supply obstruction]. Thus heart bypasses, stints, and angioplasties are mostly deemed unnecessary by savvy doctors.

Has anyone tested and corroborated Dr. Kern's findings? Of course. Published in the *American Journal of Cardiology*, April, 1988, the Renthrop Study proved that Dr. Kern's findings were accurate. In an accompanying editorial, Dr. Stephen Epstein of the National Heart, Lung, and Blood Institute, stated: *"…in an advanced state of narrowing of the coronary arteries, the supply of blood to the heart muscles is fully assured via collaterals that enlarge naturally in response to the blockage."* Further, they observed that the more the coronary arteries narrow, the less danger there is of heart infarction.

Holy Cow! That is diametrically opposite to what our proverbial 5th grader, and the rest of us, are being spoon-fed as the conventional theory. Why would there be such a blatant discrepancy? Could it be as simple as a dietary issue, and that changing the diet does not support the cholesterol lowering drugs or heart bypass industry?



Dr. Kern found that heart disease is based on heart-tissue destruction due to **metabolic acidosis**. Why has this clue been ignored for the past 70 years? The huge dietary shift toward acidic foods (sodas) and synthetic fats (partially hydrogenated margarine that became accepted by1930 after 20 years of government restrictions) was clearly evident by 1940. Diet may not be pharma-related, but it looms as large as life regarding cardiovascular disease.

In his clinical career (1947 – 1968), Dr. Kern worked with over 15,000 patients. Under his care they experienced no fatal heart attacks whatsoever, and only 20 patients experienced mild heart attacks. Government statistics during those same years cite that a comparable percentage of the general population experienced 520 heart attacks with 120 deaths. Dr. Kern's patients came to him because they already had heart issues, so his statistics are even more impressive. Dr. Kern used a low-dose herbal preparation, Oubain[7], (*Strophanthus gratusin*, subject of rigorous double blind studies) to support the heart with zero side effects.

The Perpetual Heart. Before we pursue our detective work further, it would help to understand some things about heart function. Let's first examine Nature's great design. By understanding the machine, we can understand its functional processes. Just how good is the machinery and how did humanity figure out a way to drop a monkey wrench into its gears?

Remember the French scientist and 1912 Nobel Prize recipient, Dr. Alexis Carrel? He kept an embryonic chicken heart alive and beating for over 27 years in a seawater solution. Dr. Carrel voluntarily ended the experiment (or the lab assistant forgot to replenish the saline solution), having proven that living cells can regenerate and have something akin to physical immortality. Of course such an idea has been challenged, but the facts remain that a chicken's lifespan is normally 3-5 years, but Carrel kept the heart tickin' in a beaker virtually indefinitely.

We might generally assume that the human heart is designed to beat far longer than our current human lifespans. So why is heart disease the *numero uno* cause of death?

We know that the heart runs on ATP energy. ATP is a *nanomachine* that delivers packets of energy to fund the heartbeat. A single heart cell has some 4000 organelles called *mitochondria* that generate ATP. The heart's mitochondrial mtDNA is unique and separate from the heart's nuclear nDNA.The specialized mtDNA communicates with nDNA, and together they run the show of the heart's contracting and expanding activity, generation and reclamation of energy, and tissue repair that must occur between every beat because the heart can never stop working.

7 **Oubain**, from Somali *waabaayo* – a medication extracted from *Strophantus gratusin*, the poison arrow plant.

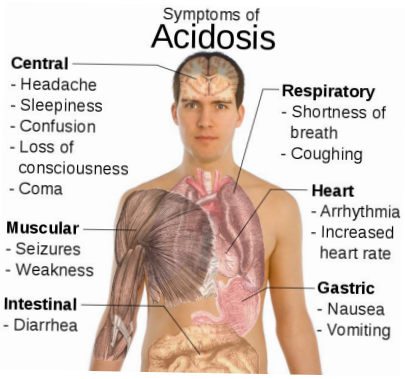
Some Food Nutrients Necessary For Mitochondrial ATP Production

- **Vitamins:** B-1, B-2, B-3, B-5, C, D, E
- **Proteins:** Carnitine, Cysteine, Glutamine, Histadine, Glutamic acid, Isoleucine, Methionine, Phenylalanine, Proline, Tyrosine, Valine
- **Minerals:** Iron, Magnesium, Zinc, Phosphorus, Sulfur, Manganese
- **Nutrients:** Lipoic acid, Co-enzyme Q-10

Some Food Nutrients Necessary For Electron Chain Transport Production of ATP

- **Vitamins:** B-2, B-3, C, K
- **Protein:** Carnitine
- **Minerals:** Magnesium, Zinc
- **Nutrients:** CoQ-10

Hearts are simple machines that must have a ready supply of nutrients and oxygen to perform. Nutrients are primarily used by the mitochondria to make energy. Such nutrients include basic Krebs Cycle nutrition just like any eukaryote[8] cell in the body. But these nutrients are so very important to the heart because it is the body's high performance engine.The heart has a unique process of quick repair and regeneration, and that process must be funded by considerable amounts of ATP.



The heart is the largest user of ATP in the human body.

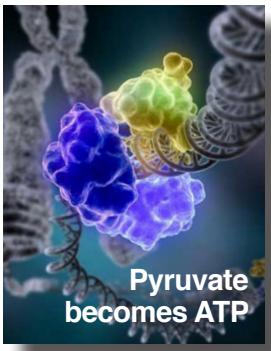
Whereas other organs can take a bit more nutritional abuse, this is not the case when we enter the heart's high performance world.The heart is vulnerable to deterioration if its simple, basic requirements are not met including:

- A ready supply of nutrients (natural diet)
- A ready supply of oxygen (exercise, alkaline blood)
- A range of activity (e.g. exercise and rest)
- Ability to remove or convert metabolic wastes and acquired toxins.

From that simple list, we can see where the breakdown occurs. Poor dietary habits, unnatural (processed) food-molecules, and lack of exercise are all contributors, but let's take a closer look at that last basic requirement. Dr. Kern found that inability to detoxify metabolic wastes and the resulting lack of ATP is the primary cause of heart attacks. And guess what? It's fundamentally a nutritional issue and not arterial obstruction, not a lack of statin or blood thinning drugs.

Metabolic Acidosis. With the inclusion of two highly acidic, dietary shifts—margarine (partially-hydrogenated "trans" fats), and soda beverages (phosphoric acid)—users shift their pH from a healthy, slightly alkaline environment to an acidic environment that causes many problems such as bone loss, and a terrain that favors infectious diseases. Acidosis reduces the oxygen available to make the ATP that is necessary for heart energy and detoxification of myocardial metabolic wastes.

ATP—Nature's Law of Economy. The primary metabolic waste product of muscle performance is lactic acid. If there is adequate oxygen, ATP, and nutrition, the cell can convert lactic acid into pyruvate and then use pyruvate to make more ATP. So Nature has a terrific plan. One molecule of glucose makes 36 molecules of ATP. In optimal function even more molecules of ATP are generated from metabolic by-products.



This is an amazing return on the dietary investment and also the basis that the human being does not need to eat so many refined carbohydrates. When children eat a high sugar diet, they overload their systems with glucose, and their bodies must store the glucose energy as fat[9]. This continues

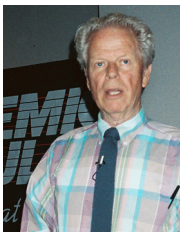
8 **Eukaryote** – an organism whose cells contain complex structures enclosed within membranes. The defining membrane-bound structure that sets eukaryotic cells apart from cells without a nucleus (prokaryote) is the nuclear envelope containing DNA. Most eukaryotic cells also contain other membrane-bound organelles such as mitochondria, chloroplasts, and Golgi bodies.

9 **Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis."** Ludwig, Peterson, Gortmaker,The Lancet • Vol 357 • February 17, 2001.

into *Metabolic Syndrome X* as the cells reject the excessive glucose and cause insulin production to increase. Today, over 58 million people in the USA are overweight; 40 million are obese; and 3 million are morbidly obese, and that's a lot of fat being schlepped around every day.

Each ATP packet renders two ADP (Adenosine DiPhosphate) energy bursts. The cell actually gets 72 bangs for every glucose buck.

Lactic Acid. We've all engaged in overly strenuous exertions, or "found" seldom-used muscles and experienced muscular soreness. When muscle cells are overwhelmed with lactic acid (occurs from strenuously exercising unused muscles), the result is muscle soreness that lasts until the liver and kidneys pitch in to get rid of the acidic metabolic wastes. The muscles generate more lactic acid than the cells can detoxify or convert, and this causes soreness. This is the basis of the "no pain, no gain" philosophy largely abandoned by exercise physiologists today.



A.S. Wheelwright, circa 1988

Remember that the heart is a high performance pump and it does not often complain of soreness from functioning within the wide range of human life—running, jumping, day to day movement—because it is well equipped to handle its job of circulating oxygen throughout the body. But Nature's plan changes when the diet and environment become adversarial to the heart's internal processes.

If the body pH is tipped toward the acidic pH range for an extended time, there is a lack of oxygen available to the cells. Doc Wheelwright used to say that one reason some people wake frequently during sleep is because they were too acidic and deprived of oxygen. The body has to wake up and move around to get more oxygen flowing to the heart and brain.

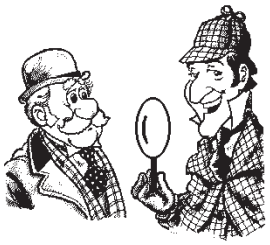
The Heart is Particularly Vulnerable to Acidosis. In an oxygen-deficient environment (acidic pH), the heart won't be able to make adequate ATP for its high performance activity. Nature provides a back-up system and the heart can use the temporary stop gap function called *glycolysis* (anaerobic fermentation) to make ATP. It is inefficient as it only renders two molecules of ATP energy per glucose molecule, but because it can produce energy so quickly, it's a short-term way to respond to emergency situations. Unfortunately if continued too long, the fermentation process creates even more acidic wastes, and this leads directly to cellular death.

Autopsies reveal that cell death often precedes heart attacks[10]. **Thus cell death is often a *cause* of heart attacks** and not just the result of a cardiac artery occlusion that cuts off blood supply.

The heart's left ventricle is particularly susceptible to acidosis. It serves the whole body whereas the right ventricle sends blood to the lungs. The left ventricle uses the most ATP and skates a fine line between the production and reclamation of ATP. This makes it the most vulnerable area of the heart, and so it's the area where most heart attacks occur.

Having heart cells die from metabolic acidosis means that the heart becomes weak and is less able to perform. That poor performance is diagnosed by medicine as the various symptoms of heart disease. This is why Dr. Kern stated that heart attacks were actually a *"chemical destructive process."* The chemical destruction is acidic muscular waste products coupled with environmental and lifestyle indiscretions. In today's massively polluted environment, xenobiotic toxins from the air, water, food, and skin-contact add to the acidic, molecular chemical destructive process.

If the acidic wastes accumulate to a point where the heart's environment is too acidic, the muscle can develop a "charley horse"[11] and this is synonymous with a heart attack. Because of the low oxygen and low ATP production, the heart can spasm resulting in damage. Further, the nerves such as the *bundle branch plexi* are also greatly dependent upon ATP, and so in the same oxygen depleted environment, the heart nerves also suffer.



"Exactly, my dear Watson." – Sherlock Holmes. A summary of our detective work so far is this: the primary cause of heart attacks is not blockage of the blood supply though of course, sudden blockages

10 *Molecule Involved in Heart Failure Now Implicated in Heart Attack Damage*, Science Daily (Sep. 16, 2010)

11 **Charley Horse** – a popular North American colloquialism for painful muscle spasms.

can certainly cause heart attacks. Most heart attacks are the result of acidic metabolic wastes that disrupt the production of ATP by choking off the oxygen supply.

Basic Biochemistry. An acidic environment is oxygen deprived.

- As pH drops, acidity increases.
- As acidity increases, oxygen decreases.
- Angina pains and heart attacks occur when the heart is deprived of oxygen.

Metabolic Syndrome X. In acidosis, there is defective oxidation of organic acids in the heart cells. This is typical of diabetes and the basis of why Metabolic Syndrome X is associated with heart disease—metabolic acidosis.

When the cell membranes become inflamed, as happens when metabolic and environmental wastes accumulate, they become resistant to insulin (as well as other hormones).

Inside the cells, the mitochondria are crying for oxygen and glucose to make ATP, but those nutrients are blocked at the membrane and can't enter. In a low ATP environment, both the cell and the mitochondrial DNA can suffer free-radical damage that alters the cell's ability to perform. So free radical oxidative damage to the cell membrane results in poor availability of glucose and oxygen for ATP production, and reciprocally, low ATP production means that the cell is subject to free radical damage from the inside and thus unable to made adequate ATP. Just one example that *"energy is everything."* Metabolic syndrome and acidosis work hand in hand to destroy the heart, unless there is dietary and supplemental intervention via antioxidants and a diet that supports the body's alkaline reserve.

Systemic's Meta-Oxy test is a quick, easy, and inexpensive way to measure the amount of cell membrane lipid peroxidation, and serves as a wake up call to return the body to it's proper operating environment.

Systemic Formula's Meta-Oxy Lab Kit

When blood glucose does not enter the cells, the pancreas must secret more and more insulin to override the inflamed membranes to get the sugar out of the blood and into the cells. Insulin causes arteries to thicken and causes blood glucose to be stored as fat. This becomes the Metabolic Syndrome's excessive blood pressure and belly fat. It's the underlying process associated with the obesity and heart disease pandemic occurring now with children and adults.

By reducing cell inflammation, many clinicians use anti-oxidants and phyto anti-inflammatories to help patients with insulin-resistance. The ROX (Super Antioxidant with Resveratrol) formula is designed to help the body quench the cellular inflammatory fires and particularly supports the heart. Its Resveratrol ingredient helps the heart genetics behave as if the heart were still a teenager[12]. [See Research Report #1: *Free Radicals and Mitochondrial Dysfunction*.]

Also, nutrients that help increase ATP production provide the energy for the body to effect repair of damaged cells—a process that includes cellular detoxification. Providing heart-specific nutrients is the primary role for the HQ (Heart Energy) formula.

Heart Energy. Let's look at how key nutrients help address what we now know to be the primary cause of heart attacks – heart muscle acidosis that inhibits heart energy (ATP) production.

Co-Enzyme Q-10. Systemic converts this enzyme to a water-soluble form for enhanced assimilation. Works in concert with L-carnitine to help normalize myocardial

12 **Reserveratrol helps cells mimic a calorie restricted diet.** Howitz, Bitterman, Cohen, Lamming, Lavu, Wood, Zipkin, Chung, Kisielewski, Zhang, Scherer, Sinclair. Small molecule activators of sirtuins extend Saccharomyces cerevisiae lifespan. Nature. 2003 Sep 11;425(6954):191-6. Epub 2003 Aug 24.

adenine nucleotide concentrations. CoQ10 is an electron carrier in the mitochondria, and is necessary for myocardial ATP production. It helps prevent low-density lipoproteins (LDL) from becoming oxidized, so it helps protect the arteries and plays a role in reducing vascular disease.

D-Ribose. A saccharide essential for DNA/RNA production. Improves the heart's energy recovery (resynthesizes ATP) after each systolic activity. Ribose is a necessary substrate for nucleotide synthesis and is part of the DNA/RNA building blocks. Ribose helps reduce congestive heart failure processes. It's an antioxidant. It helps the body overcome Chronic Fatigue Syndrome and Fibromyalgias that are based on chronic free radical activity that inhibits production of ATP.

Vitamin E. An antioxidant that protects the heart. Increases the expression of two enzymes that suppress arachidonic acid metabolism, thereby increasing the release of prostacyclin from the endothelium, which dilates blood vessels and inhibits platelet aggregation. Supports the endothelial cells that line the interior surface of blood vessels so they are better able to resist blood-cell components adhering to the surface. It protects cell membranes and supports the induction of oxygen and nutrients into the cell. Vitamin E reduces cellular aging, inhibits the damaging peroxynitrite radical associated with the NO/ONOO cascade of self-perpetuating free radical damage to the heart's mtDNA. [See Research Report #2: *Mitochondrial Dysfunction and the NO/ONOO Cycle*.]

Nattokinase enzyme generated by soybeans.

Nattokinase. An enzyme that maintains blood viscosity and helps correct thick blood. Heart attack survivors with thickened blood are more likely to have repeat infarctions. Nattokinase is an excellent blood thinner and helps maintain the heart through the blood supply. Nattokinase dissolves existing thrombus (clotting) by dissolving the fibrin that binds platelets together. As we age, our plasmin production decreases. Nattokinase also enhances the body's own production of plasmin and other blood clotting agents.[13] It lowers blood pressure by inhibiting angiotensin-converting enzyme (ACE). ACE causes blood vessels to narrow and blood pressure to rise[14]. It prevents the hardening and narrowing of arteries[15].

Magnesium. Deficiencies result in higher probability of heart disease. Magnesium protects the heart rhythm and aids recovery from heart attacks. Long known for its role in muscle metabolism and function, magnesium specifically addresses the heart muscle and the production of ATP. It helps prevent muscle cramps. Doctors use magnesium to treat irregular heart rhythms.

Hawthorne. Used worldwide to promote healthy circulatory systems, hawthorn helps prevent angina, high blood pressure, congestive heart failure, and arrhythmia. It strengthens the heart. It is widely regarded in Europe as an effective treatment for heart disease and is used for angina, myocarditis, arteriosclerosis, and nervous conditions. It is also indicated for strengthening blood vessels, correcting vascular insufficiency and blood clots, restoring the heart muscle wall, and for lowering excessive cholesterol. Hawthorne also helps repair damaged heart muscles[16].

L-Carnitine. Provides direct support for the mitochondrial energy processes within every cell. Also helps with cellular detoxification of metabolic wastes. In the strictest sense L-carnitine is not an amino acid, but a substance related to the B vitamins. Its primary role is to help transport fatty acids into the mitochondria, where they can be converted to energy. As such, carnitine increases the use of fat as an energy source. Carnitine is useful for angina pectoris, congestive heart failure, and elevated cholesterol and triglyceride levels.

13 *Sumi et al. "A novel fibrinolytic enzyme (Nattokinase) in the vegetable cheese Natto," Experientia, 1987*

14 Maruyama M, Sumi H. Effect of Nattō Diet on Blood Pressure. JTTAS, 1995.

15 Sumi H. Healthy Microbe "Bacillus Nattō". Japan Bio Science Laboratory Co. Ltd.

16 **Hawthorne** – German clinical trial with 78 patients with congestive heart failure, hawthorn increased heart working capacity, lowered blood pressure and improved fatigue and endurance while relieving difficult breathing (Schmidt, et. al. 1994).

It is used for **recovery from a heart attack**. In studies, *"Subjects taking carnitine showed significant improvements in heart rate, blood pressure, angina attacks, rhythm disturbances, and clinical signs of impaired heart function."*

Gamma Oryzanol. An antioxidant from rice bran oil containing ferulic acid. Helpful to prevent oxidative damage within the cells. Also helpful to normalize elevated cholesterol.[17] It may contribute an additional cholesterol-lowering benefit beyond the effects of the fatty acids.[18]

Taurine. An amino acid associated with cell membranes and electrical impulses. Taurine enhances the contractile strength of heart muscle and helps prevent heart failure.[19] In a 1984 animal study, taurine protected against heart failure, reducing mortality by 80 percent in the taurine-treated group.[20] In a later study, taurine was shown to lower blood pressure.[21] Taurine has also been shown to prevent atherosclerosis in animals with elevated cholesterol levels.[22]

Pimiento. Doc Wheelwright favored pimiento for its bioenergetic match up with the heart's bioenergy. He also cited that the *doctrine of signatures* of the heart-shaped pimiento pepper to the heart's structure. Part of Doc's research was measuring the bioenergy of thousands of plants and nutrients as well as human tissues. He often cited that pimiento had one the highest energetic signatures he'd ever found and that it was supportive of the heart.

View the webinar, "The Pulse of Life" and download protocols and product discounts at www.systemicformulas.com.
Call Systemic for the password at 800-445-4647.

17 Lichtenstein AH, Ausman LM, Carrasco W, et al. Rice bran oil consumption and plasma lipid levels in moderately hypercholesterolemic humans. *ArterioscIerThromb*. 1994;14:549-556.

18 Cicero AF, Gaddi A. Rice bran oil and gamma-oryzanol in the treatment of hyperlipoproteinaemias and other conditions. *Phytother Res.* 2001;15:277-289. And, Tulley R, Morales S, et al. Rice bran oil, not fiber, lowers cholesterol in humans. *Am J ClinNutr*. 2005;81:64-68.

19 Azuma J, Sawamura A, Awata. "Usefulness of taurine in chronic congestive heart failure and its prospective application." JpnCirc J1992 Jan;56(1):95-9.

20 Azuma, J., et al. "Beneficial effect of taurine on congestive heart failure induced by chronic aortic regurgitation in rabbits." *Res CommunChemPatholPharmacol* 45(2): 261-70, August, 1984.

21 Fujita, T., Sato, Y. "Hypotensive effect of taurine. Possible involvement of the sympathetic nervous system and endogenous opiates." *J Clin Invest* 82(3): 993-97. September 1988.

22 Azuma J, Sawamura A, Awata. "Usefulness of taurine in chronic congestive heart failure and its prospective application." *JpnCirc J* 1992 Jan;56(1):95-9.

A good sleuth will find that all the above ingredients and benefits are included in Systemic's HQ (Heart Energy) formula. Not only does it have a wide array of heart and cardiovascular system benefits, it specifically focuses on increasing the heart's mitochondrial production of ATP. This formula is at the cutting edge of nutrition where it's most needed—inside the cell. Most of all, it addresses the primary cause of heart disease — the metabolic acidosis associated with both Metabolic Syndrome as well as lack of ATP recovery within the cells and their mitochondria.

Basic Protocol for Heart Energy Support

With each meal take:
- 1 HQ (Heart Energy)
- 1 ROX (Super Anti-Oxidant with Resveratrol)

Comprehensive Protocol for Heart Energy Suport

With each meal take:
- 1 HQ (Heart Energy)
- 1 ROX (Super Antioxidant with Resveratrol)
- 1/2 dropper OMGA LQ (Omega 3, 6 & 9)
- 1 H (Heart)

HQ (Heart Energy) is a critically important product that addresses both the specific need of the heart to produce ATP, and the general need of the heart to have the nutrition to function optimally. – Dr. Jack Tips

Disclaimer: This Research Report does not propose a method for diagnosing or treating any disease whatsoever—a process exclusive to the practice of medicine by licensed individuals. This information refers only to whole body nutrition to support the body in caring for itself. It features insights from one individual's clinical perspective and does not constitute labeling for any product.

Learn about Doc Wheelwright's research on the optimal diet for human nutrition– a diet that protects the heart and builds the alkaline reserve.

Call Systemic at 800-445-4647.

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