The Wrath of Scurvy

By Donald Yates

Vitamin C – also known as Ascorbic Acid, is a vital nutrient and is water soluble. Humans cannot synthesize Vitamin C and must obtain it through our diet. It is required for the synthesis of collagen, a vital structural component of blood vessels, tendons, ligaments and bones.

Vitamin C also provides an important function in the synthesis of the neurotransmitter, norepinephrine. These are critical to brain activity and our known moods. Vitamin C is also required for the synthesis of carnitine, a small molecule which is essential for the transport of fat to cellular organelles called mitochondria, for the conversion to energy.

Vitamin C is also a highly efficient antioxidant. Even in small amounts, it can protect vital molecules in the body, such as proteins, lipids and nucleic acids from damage by free radicals.

Scurvy

Scurvy is a severe Vitamin C deficiency and is fatal if unattended. Unfortunately, many of the early treatments were not effective and death followed. By the late 1700s the British Navy was aware that scurvy could be cured and prevented by eating oranges and lemons. Vitamin C was not identified and synthesized until 1932.

Naval warfare during the sixteenth and seventeenth centuries was conducive to specific diseases. Ship's rations often resulted in starvation and dysentery from eating spoiled food. Any ship's captain could not count on the good health of his crew. The officer's rations were of high quality and often promoted good health.

If your ship sailed to tropical waters, many of the crew would become seriously ill, and young sailors would die without knowing why.

It is hard to visualize a time when a diet deficiency could change the outcome of a naval campaign or destroy a whole fleet without ever firing a cannon. Yet, scurvy, which is caused by the deficiency of Vitamin C, accomplished just that, and thousands of times over.

Many thousands of your seamen died; hundreds of ships never returned to their home ports; because their crews were severely weakened by this disease. Scurvy was called "The Scourge of the Sea." The cure had been discovered then lost, then found, and lost again many years ago.

Most astonishing, the ignorance of real causes of scurvy persisted as recently as the beginning of the twentieth century. In 1900, a paper was read to the British Royal Society which stated that "Neither lime juice nor fresh vegetables could cure scurvy because it was caused by tainted food."

Sir Frederick Gowland Hopkins wrote a book on vitamins in 1912 that explained the effects of diet on diseases. The anti-scorbutic compound, Ascorbic Acid, was finally isolated in 1932.

The symptoms of scurvy are different, but, usually begin with a general weakness and depression. Others include a sallow complexion, swollen legs, aching muscles and tender swollen gums. The teeth may fall out in a few weeks. Flesh boils and swollen yellow flesh are common.

Often, those who escape death from scurvy fall easy victim to other diseases. Scurvy is correctly treated with a diet of fruit and fresh vegetables and can be completely cured.

Lemon juice could be concentrated and preserved and used to present scurvy. The art of canning and preserving meats and vegetables, and finally refrigeration, has eliminated scurvy from shipboard.

During the fifteenth century long sea voyages to the West Indies and the Americas resulted in major episodes of scurvy. Vasco de Gama had a crew of 160 men and lost over 100 sailors to scurvy alone. Almost all of Magellan's sailors died of scurvy. He had five ships and only eighteen weakened sailors returned home.

Explorer Jacques Cartier landed in Canada in 1534 with a crew of 106 men. One hundred of them had scurvy. Native Indians cured them with sassafras tea.

Sir Richard Hawkins stated in 1593 that in his twenty years at sea, ten thousand British sailors had died of this disease. It is estimated that scurvy has killed at least one million English sailors. Their officers were still reluctant to believe that oranges could prevent scurvy.

The first book on Naval Medicine, "The Surgeons Mate," was published by John Woodall in 1617. He highly recommended lemon juice to prevent scurvy. One hundred years later Commodore George Anson made a trip around the world, in 1740 and ending in 1744. He had a crew of 1,935 men and 1,051 died from scurvy. What a waste of human life.

In 1747, James Lind, a surgeon in the British Royal Navy, gave world proof that lemon juice was the best remedy for this terrible disease. While serving aboard his HMS Salisbury, he conducted a scientific experiment on crew members with similar scurvy symptoms.

He used twelve seamen and divided them into six groups. He gave those in the first group a quart of cider each day. In the second group, he gave them twenty-five drops of elixir of sulphuric acid (oil of vitriol), three times a day. The third group was given vinegar three times a day. The fourth group was given a quart of sea water each day. Group five was given a pill containing garlic, mustard seed, radish, balsam of Peru and gum myrrh. The sixth group was given two oranges and one lemon a day.

In six days, the last group was cured. One man returned to duty and the second nursed the other victims. As usual, not all of the Royal Navy was convinced with Lind's work. In 1789, a British fleet in the Channel Islands, after a ten week cruise, brought 2,400

scurvy cases to Portsmouth. Out of 12,000 men of the British Navy in the West Indies, 1,750 died of scurvy.

Lemonade was used extensively as an anti-scurvy compound by French and Italian physicians in the seventeenth century. Pharmacists were encouraged to supply it. A Florentine pharmacist in 1660 considered freezing the lemonade to make it more appealing. The frozen lemon ice water was called sherbet, and quickly became very popular.

Imagine a medicine that tasted good. In 1676 the Lemonadiers of France formed a company under government authority.

To Be At Sea

Scurvy! Many history books mention that while being on a long voyage at sea, the sailors would suffer from scurvy. Did anyone understand what that meant? Their quarters were filthy, clothing and bedding were infested with lice, mice, and rats. There was no ventilation and a terrible stench. Salt beer and salt pork were thrown to the seamen in the galley for weeks and months until their stomachs heaved at the greasy slop. Their tongues were swollen and parched with the terrible thirst it created.

The use of stale drinking water developed nausea. Their contaminated food consisted of rancid fat and butter, stale beer, hard baking powder biscuits and cheese full of maggots. They had no fresh fruit or vegetables. Scurvy was simply caused by lack of green vegetables.

The sailors living on such poor food still had to perform their tasks at sea. They had to reef in the sails during a gale, hauling on ropes and hawsers until their hands were blistered and raw. They also had to pull at the halyards and the braces and had to heave the old barrel windlass.

Other duties included caulking leaking seams with oakum and pitch and pulling on the pumps to clean the bilge. These seamen were usually bullied by their officers. Whipping was a common but brutal event. It was common for one third of the crew to perish on a voyage. And these were young men.

Scurvy was an unnecessary but deadly disease. It afflicted young, healthy sailors in a short time, say four weeks. In the second four weeks, they faced a rapid horrible death. As we know today, it could have been prevented with either fresh or canned vegetables or fruit juice. They did not have ice boxes or refrigerators. Captains later carried lime juice for their crews and the rewards were remarkable.

The insidious sea disease, scorbutus or scurvy, haunted mankind throughout his early history. It was traced to 500 BC and the prominent Arabian physician, Rhazes (850 – 932 AD) said that scurvy is a disease of the teeth and jaws, beginning in the mouth and ending in the intestines. It was a very serious disease.

It was not until the sixteenth century and the beginning of the Great Age of Exploration in Europe that scurvy first appeared out of control. It continued rudely as the principal nemesis of sailors until 1795, when Sir Gilbert Blane, consultant to the British Navy on the health of sailors, convinced the Government to pass an ordinance which required that lime juice be provided for all men of the Navy.

Scurvy then vanished from the British Navy almost immediately. Other nations quickly followed suite. The man responsible for providing Gilbert Blane with proof on the great value of lime juice was James Lind through his valuable book, "A Treatise on the Scurvy."

James Lind's book holds the unique distinction of being both a Dental and Medical classic because, in early times, both professions treated the disease. Both fields are concerned with conditions brought on by vitamin or diet deficiency.

James Lind was a serious scientist who carefully made observations on treating scurvy. He also tested other known methods to determine their effectiveness. James was born in Edinburgh and his family could be traced back to 1200. He was born in 1716, and his parents were John and Margaret Lind.

At age fifteen, he was an apprentice to George Langlands, a member of the Incorporation of Surgeons. He served his apprenticeship in Edinburgh.

In 1739, James Lind was twenty-three, his medical training ended in the Royal Infirmary. He entered the Royal Navy as a Surgeon's Mate. During the subsequent ten years, he sailed on various ships to the Mediterranean, to West Africa, and the West Indies, carefully observing and recording everything he saw.

By 1747, James had been promoted to Surgeon on the HMS Salisbury. It was during her cruise in the English Channel that year that Lind conducted his classic experiments on scurvy.

In 1748, James Lind had retired from the Royal Navy and returned home to Edinburgh to obtain his Medical Degree. He obtained his license from the Royal College of Physicians. In 1750, he was appointed a Fellow of the Royal College of Physicians of Edinburgh. In 1757, he became Treasurer of the Royal College. James was also a member of the Philosophical and Medical Society of Edinburgh.

He published two papers in London in 1763 on Fevers and Infections. During these years in Edinburgh, he researched all of the known works on scurvy and put together his own observations on the disease. In 1753, he published his famous Treatise in Edinburgh. His treatise was dedicated to George Anson.

In 1740, Commodore Anson had sailed from Portsmouth with six men of war and two victuallers (supply ships) to confront the Spanish Navy in the Pacific. Over two thousand men left home and only two hundred came back. The rest died from scurvy – 90% fatalities.

The survivors, of whom about thirty were just boys, lived in just one ship: HMS Centurion against the Spanish treasure ship, Cavadonga. This was one of the most prominent battles in the long history of the British Navy. The British Navy went around the world and returned after four years at sea.

This voyage persuaded Lind to write his Treatise on Scurvy.

James Lind started a practice in Halsar Hospital in Portsmouth. In his first two years there, he saw 5,734 admissions including 1,146 cases of scurvy. The English Channel fleet could bring in 2,000 cases at one time. During the seven year war with Spain, he had as many as 1,000 cases at one time. He was satisfied with his own intellectual efforts and he did more than any man before or since to point the way for making safe the life of the sailor at sea.

James died on July 13, 1794, and was buried at Porchester Church. He married Isobel Dickie and they lived in Edinburgh. She died on March 6, 1796, at the age of seventy-six. Their son, John, also became a physician.

James Lind was the first of the modern clinical researchers to have faith in his own observations, even though they usually did not agree with the established ideas of his time. He got nearer the truth about the nature of scurvy, malaria and typhus than anyone before him.

This is very shocking and sad. The Dutch experts believed that scurvy was a proteus like mischief, sneaking under various and unusual appearances and sent by divine permission as a punishment for the sins of the world. Eugelenus described scurvy as a universal pathological process that would explain any clinical disorder under the most diverse conditions. The idea of a universal disease and a universal panacea to cure it, was quite common in the seventeenth century.

Lind had to destroy most of the previous theories, such as acid scurvy and alkaline scurvy; that sea scurvy was different than land scurvy; that scurvy was caused by breathing sea air; and that it was contagious from bacteria.

His Treatise holds the simple account of his classic experiment, which appears to have been the first intentionally planned controlled experiment ever conducted on human beings. His respect for the British sailor persuaded him to a precise experiment, conducted with the full cooperation of his patients and carried out in the manner that has later been observed in all proper trials of new drugs and new procedures of treatment.

His greatest accomplishment was that by one precise clinical experiment, he established for all time the clear superiority of citrus fruits above all other invalid anti-scorbutic remedies.

Having shown that scurvy could be cured with orange juice and having proposed an excellent method of concentrating and preserving the extract used at sea, Lind might well have been satisfied to conclude that scurvy was caused solely by some specific chemical substance contained in orange juice; he might even have used the name, Ascorbic Acid.

But Lind did not make this current mistake. He emphasized that the cause of scurvy at sea was related to the life of the sailor in which cold, damp, infection, alcohol and discontent were all part of the story. Today we call these factor "stress." It was only recently that their action in depleting the suprarenal glands of ascorbic acid has been recognized.

In reviewing what has been demonstrated of the virtues of oranges and lemons in this disease, Lind states that in the most severe cases, the most rapid and sensible relief was obtained from lemon juice by which he treated hundreds of patients with severe pain.

He strongly recommended adding wine, which has positive attributes. Other substances are invaluable anti-scorbutics; scurvy grass, coconut tree sap, orange peel, chamomile flowers; fir or pine tree tips, and Peruvian bark. An infusion of malt is also beneficial.

During the Irish Potato Famine of 1845, 30,000 people died of scurvy. Hunger was a major complicating factor.

Malnutrition was serious among the armed forces in the Crimea; there was a shortage of food, which included no fruit or vegetables. When scurvy broke out, Lord Raglan asked for lime juice and received ten tons, but not enough. It remained at the base at Balaclava.

By the time that the Commission of Enquiry commented on the "unaccountable and still more unfortunate" occurrence, scurvy had claimed its 3,250 victims - imagine trying to bury 3,000 victims.

One of the early treatments of both scurvy and syphilis was the use of mercury. This tragedy resulted in the mass murder of thousands of patients at a time. Physician Kramer was responsible for a great slaughter of mankind.

Young doctors in Physic being furnished with such a generic name as that of scurvy, comprehending almost all diseases, think of themselves at once acquainted with the whole art of medicine.

They own pharmacopeias of prescriptions, hence a variety of cases are every vulgarly deemed and erroneously treated as scorbutic. A combination of moisture with cold is often a major cause of this disease.

For drink, the British Government allowed good small beer, spruce or ginger beer. Beer has been shown to have an anti-scorbutic property.

In 1720, the Government troupes in Hungary acquired a severe outbreak of scurvy. It also afflicted land dwellers in the beginning of spring. Four hundred of the troupes in Belgrade were given mercury as a medicine. Every soldier died a terrible death. Mercury poisoning was prescribed by the best pharmacopeias endorsed by Hypocrites, Galen, Doctor Doleus and Doctor Helmont.

A copy of this disaster was given to the College of Physicians in Vienna: "The medicinal use of mercury should be called destroyers of the human race."

It is quite sad that the first Northern colonies in American were extremely vulnerable to scurvy. Of the first colony sent over to New England, over one-half perished from scurvy in the year 1621.

When the French first settled in Canada, they too suffered severe losses from scurvy. They contemplated sailing back home to France and abandoning their new homes. Even the native Indians were afflicted with this cruel disease.

As an early experiment, a group of sailors were left at Greenland and Spitzbergen in 1633. They were left there for two years and they all died of scurvy. All of the medicines were detrimental and hastened their demise. Their food consisted of sea rations: Brandy, course hard biscuits and salted beef.

Our Civil War 1862 – 1865

The Civil War was a major unfortunate set of circumstances that got out of hand. How could we fight our own countrymen?

The Confederate prisoner of war camps were a disgrace. One of the early, prominent Confederate prisoner of war camps was at Cahaba, Alabama. The prison was taken by the South and was formally a warehouse designed for agricultural produce. Alabama's first capital was located at Cahaba. One of the major prisons was at Andersonville, Georgia. Inmates were treated like animals and were given ground corn cobs. Any salted beer would often be rancid and many of the inmates that survived weighed only half of what they weighed on capture.

Many inmates got scurvy and the early prisoners died of scurvy. Scurvy is a preventable disease. More soldiers died in prison than on the battlefield.

American's greatest maritime disaster was at the end of the Civil War, in 1865, when 1800 Union prisoners were on their way home on the Steamboat Sultana. She was overloaded with seven times her capacity with prisoners from Andersonville,

The Sultana was fighting her way upstream near Memphis when three of her four boilers exploded. She was only two years old and her boilers were of the fire tube design, which are subjected to explosions. The Sultana caught fire after the explosion, and, to make matters worse, any survivors had to jump into the Mississippi River to avoid being burned to death.

Our political and military leaders during the Civil War should have prevented scurvy and the mass starvation in the prisoner of war camps. Scurvy is preventable and their diet should have included healthy fruits and vegetables. Every prisoner had a home and a family and wanted to go back home after the war. Who was responsible for all of the terrible diseases and deaths in the camps?

Chronic Scurvy Today

The Suppression of the Real Nature & Outright Cure of Heart Disease by Owen Foronow – The Vitamin C Foundation – 2005.

Heart disease or occlusive cardiovascular disease is the top killer in the United States. It is actually a low grade form of scurvy. It will probably be recognized in the future by today's medical doctors.

Heart disease is a wrong description. The disease is shown by scab-like accumulations that slowly build up on the interior of blood vessels. The progressive disease process diminishes the blood supply to the heart and other organs resulting in angina or heart cramp heart attack and stroke. The precise classification of this disease process is chronic scurvy, a sub-clinical form of the classic Vitamin C deficiency disease.

The real characteristics of this disease were identified in the early 1950s by a Canadian research team led by G. C. Willis, MD. This result was confirmed in the late 1980s by the world's leading scientist, Linus Pauling, Ph.D.

Doctor Pauling warned the world in lectures, in writing and in movies after he and his associates conducted experiments that proved the Willis findings. To date, this warning has never entered the mainstream media outlets. Unfortunately, cardiologists are taught, and often tell their patients that there is no relationship between Vitamin C and heart disease, and there is no value in Vitamin C in amounts much higher than the small RDA amount.

It is interesting that the RDA value of 60 mg of Vitamin C was established 40 years ago and was based on the Ascorbic Acid in one orange – no scientific basis.

Following scientific protocol, if a medical doctor or research scientist tries to challenge the true nature of cardiovascular disease, they must be able to identify experiments that refute the Pauling – Willis Chronic Scurvy Hypothesis. Such experiments have never been published.

Doctor Pauling issued his warning over twelve years ago. Pharmacology Professors Steven Hickey and Hilary Roberts in their recent book, Ascorbate: The Science of Vitamin C" – 2004 document, shockingly, that there have been no independent experiments published that were designed to test the Dr. Pauling hypothesis.

Only one clinical study in humans was conducted to test the Pauling high dose hypothesis. This experiment was conducted in England with 200 men, over a period of three years, and the date confirmed Pauling's theory and therapy. Yet, Dr. Kale Kenton's research has not appeared in a medical journal.

Will the giant pharmaceutical factories facing these facts survive? The end of the suppression of Vitamin C will reveal the CODEX control for what they really are – a means to support an industry that has little reason to exist in its current form. The people are beginning to realize that the world's most lucrative industry is really a tinder box. Its most profitable products are, at best, useless and, at worst, dangerous. Prescription drugs beget more drugs. Real doses of Vitamin C could be highly beneficial, while avoiding toxic prescription medications, as if your life depended on it.

The 700,000 people who die needlessly every year act on their cardiologist's direction. The American Heart Association estimates that sixty-three million Americans suffer cardiovascular disease. More than one million undergo some form of heart operation, and over fifteen million are taking statin cholesterol lowering drugs on the advice of their doctor. These popular statin drugs are known to deplete ascorbic acid in the blood and probably cause heart failure.

The Year 1932

Ascorbic Acid was identified and isolated in 1932. The pioneering research into the connection between Vitamin C and heart disease started in the late 1940s, not long after the structure of Vitamin C was determined. Canadian doctors proved that a Vitamin C deficiency caused the condition, commonly called atherosclerosis. These doctors found that the disease will arise in 100 percent of Vitamin C deprived animal test subjects that don't make their own Vitamin C. Also, these Canadian scientists demonstrated that Vitamin C alone reverses atherosclerosis in laboratory animals.

This same research team performed similar studies in humans. The results showed reversals of atherosclerotic plaques in one-third of the human subjects. These studies were of low doses of no more than 1,500 mg per day.

The knowledge that heart disease is a form of scurvy has been suppressed from the period that the first series of Willis articles were published in the Canadian Medical Journal in the early 1950s. Inexplicably, since this experimentation, no articles favorable to Vitamin C and its connection with atherosclerosis have shown up in a reputable medical journal that is widely read by medical doctors.

Cardiologists in training are taught that there is no connection between Vitamin C intake and heart disease, and that it is quackery to suggest otherwise. These assertions seem justified because reports of such studies are unheard of. But, as Vitamin C expert and Pharmacological Professor Steven Hickey states, every cardiologist could have performed these studies on his own.

Time has moved forward and the medical profession has failed over the past 50 years to produce the simple experiments. The annual budge of the NIH alone is over 27 billion dollars, but, over the past 50 years, no one has duplicated the early Vitamin C and heart disease experiments, which could be performed by almost any cardiologist from petty cash.

Since Doctor Linus Pauling and other top scientists have promoted ascorbate as a cure for heart disease, it seems very sad that a potential cure for the worst killer in the developed nations, atherosclerosis has not been refuted. To a casual scientist from any other discipline, this lack of interest would be shocking.

It is a fact that the experiments have been done on animals and the results show that ascorbate protects against atherosclerosis and may reverse it. There is some additional significant evidence from human studies that is consistent with this evaluation. So why have the human studies not been performed? Or we may ask, if they have been performed, was the data withheld? The enemies of Doctor Pauling, as well as the drug companies, would love to see the Pauling hypothesis discredited. Why have the experiments not been reported? Doctor Steven Hickey, December 2004.

There is no doubt that the discovery of this cure has been suppressed, otherwise most of the public would have learned that twice Nobel Prize Winner, Doctor Linus Pauling, had suggested it. Millions are dying needlessly for lack of disseminated knowledge of the Pauling discovery, which amounts to the suppression of it.

Dr. Pauling and his former research scientist, Dr. Matthias Rath, did their part by conducting the experiments and attempting to publicize these discoveries. Now it is up to other researchers in the medical community. If there is even the mere chance that Doctors Willis, Pauling and Rath are correct, it is truly criminal to fail to run experiments under fair conditions.

For the past ten years, a series of popular high protein diets have been responsible for modern scurvy. Even one of the main promoters had died fifteen years early, over weight.

One of the primary reasons for drinking mineral water was because many city wells had become contaminated with bacteria. This bacteria caused many diseases like diarrhea and intestinal diseases – Summer Complaint, etc. The mineral water was usually pure, but, did not do much good after the patient just ate some beef contaminated with cow manure and e-coli bacteria. Cholera was also caused by contaminated food and many people died in their thirties. If the mineral water was sparkling and had a high carbon dioxide concentration, that could kill some of the bacteria.

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