

Hydrogen.... Longevity's Missing Link

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Albert Szent-Gyorgyi, the Nobel laureate who discovered vitamin C, calls water the mother and matrix of all life (6). Water is so much a part of life that we tend to ignore it and look elsewhere for the magic bullet, the secret herb or nutrient that will increase health and vigor and extend life-span.

Recent discoveries about the significance of water and its function in the living system may forever change our view of water. All the symptoms of aging are in one way or another accompanied by a slow dehydration of our vital tissues associated with free-radical oxidative damage (22). No matter how much tap water or mineral water we drink, we cannot seem to slow down the inevitable starvation of vital tissues for the fluid that is everywhere. There is much more to tissue hydration than simply drinking ordinary water. Tissue water is as different from spring water as milk is from apple juice. This is the story of a discovery that may help to slow the dehydration and subsequent tissue damage that accompanies the aging process.

THE BEGINNING OF THE QUEST

When Patrick Flanagan was 17 years old, he had already been a child prodigy in electronics and chemistry since the age of eight (15). He was consulting with a Stamford, Connecticut-based science 'think tank' when he first met Dr. Henri Coanda (1885-1972).

Dr. Coanda was 78 at the time and appeared to be in exceptionally good health. He had the quick mind and bright eyes of a man driven by a vast reservoir of inner energy. Dr. Coanda is known as the "Father of Fluid Dynamics" (10). In 1910, seven years after the first flights by the American inventors Orville and Wilbur Wright, Henri Coanda designed and built a jet-propelled monoplane which took off and flew under its own power with Coanda as pilot. He used an engine that he termed a reaction motor, but, discouraged by the lack of public acceptance of his aircraft, he abandoned his experiments and designed the Bristol Fighter craft for the British in World War 1(10).

While building the world's first jet airplane, Dr. Coanda discovered an effect that has become known in the science of fluid dynamics as the "Coanda effect" (10). Without the Coanda effect, we would not have a space shuttle or a 747 jet today.

During his 78th birthday party at the home of author-scientist G. Harry Stine, Patrick told Dr. Coanda that he hoped that he (Patrick) was in the same excellent health when he was 78 years old. Coanda looked at Patrick and said "Patrick, when you are 78 years old we'll talk about it". Everyone in earshot laughed at Coanda's joke.

A few days later, Dr. Coanda invited Patrick into his office and told Patrick a secret that would change his entire life. He told Patrick that he had spent over 60 years searching for the secret to "the fountain of youth." He said that the human body is over 70 per cent water and that the brain is 90 per cent water. He said that the water contains within its structure the secret to reversing the aging process.

Dr. Coanda had developed testing methods for determining different geometries in the structure of water (10). He travelled at length around the world and found five places that contained what he termed "anomalous water". Two of these places included Hunza land in the Karakoram Mountains of Northern Pakistan, and the Vilcabamba in Ecuador. It has long fascinated anthropologists that

people who live in these areas tend to age more slowly than the rest of us. In fact, people who live in these areas tend to remain healthy and disease-free well after the age of 100. There are documented cases of men fathering children after the age of 100. Dr. Coanda discovered that the secret of longevity in these areas was due to the special physical properties of their water. The people who live in these areas also claim that water is the secret of their long, healthy lives. He found that this 'Hunza-type' water was significantly different from water found anywhere else (7). Dr. Coanda's lifelong ambition was to recreate Hunza water in his laboratory. Since the human body averages 70 per cent water, he was convinced that the secret of the Hunza people's abundance of healthy centenarians was due to the health enhancing properties of their anomalous water. As a result of his studies, he was able to test water all over the Earth and could predict the average age of death in any given locality just by testing the water in that area.

Dr. Coanda originated the expression. "You are what you drink". He said that the water affects our health more than any other nutrient. He told Patrick: "Discover the secret of Hunza-type water and you can extend life indefinitely". It is interesting that Dr. Alexis Carrel, another French scientist, had received the Nobel prize for keeping the cells of a chicken heart alive for 34 years (3,16). Dr. Carrel said: "The cell is immortal. It is merely the fluid (water) in which it floats that degenerates. Renew this fluid at intervals, give the cells what they require for nutrition, and as far as we know, the pulsation of life may go on for ever".

Dr. Coanda revealed the special characteristics of Hunza-type water to Patrick. With these clues in hand, Patrick started his own quest for the secret of Hunza water. After obtaining a sample of Hunza water from Beny Lee Morales, a friend who had been to Hunza land many times, Patrick performed his own analysis. The first thing he discovered was that Hunza water is in many ways just like distilled water. It does not contain the mineral salts we find in mountain springs or in well-water. It is devoid of mineral salts (7).

The next thing Patrick found was that Hunza water contains trace minerals in a special colloidal form. Colloidal minerals are minerals that are insoluble in water. Colloidal minerals are not ionised into anions and cations like mineral salts. Although colloidal minerals are very common types of minerals, the colloids in Hunza water are different from ordinary colloids (4,7). Colloidal minerals are so tiny that they cannot be seen except with the most powerful microscopes. Instead of being ionised, they are suspended in water by a phenomenon known as "zeta potential".

Dr. Thomas Riddick, a pioneer in colloid chemistry, stated: "Zeta potential represents a basic law of Nature, and it plays a vital role in all forms of plant and animal life. It is the force that maintains the discreteness of the billions of circulating cells which nourish the organism". If zeta potential is low, toxins cannot be suspended for elimination, and nutrients cannot be suspended for transportation to the cells. The whole system becomes clogged (7).

Patrick discovered that the colloidal mineral clusters in Hunza water were smaller and had a higher zeta potential than other colloidal minerals. He also found that Hunza water contained a very large quantity of negatively ionised hydrogen atoms. Negatively ionised hydrogen atoms are not found in ordinary water (7).

All water contains hydrogen atoms with a positive charge. The hydrogen protons that are found in ordinary water control the pH or acid-alkaline balance (12,22). The negatively charged hydrogen protons found in Hunza water are the most powerful electron donors known to chemistry. These atoms are extremely powerful free-radical scavengers. These hydrogen ions are normally found in the fluids of healthy living systems.

COLLOIDAL MINERAL CLUSTERS

In 1983, Patrick met and married his wife, Gael Crystal. After returning to their new home in the mountains outside of Sedona, Arizona, they built a new water research laboratory where they continued the quest for the secret of Hunza water. As a result of one year of joint research, they finally succeeded in duplicating the anomalous properties of Hunza water. They created a new type of colloidal mineral cluster that is so small it is only 50 angstroms in diameter. These minerals are so small that 1,600 of them would fit side by side on a red blood cell. These mineral clusters have since been trademarked under the name of Flanagan Microclusters®.

When these colloidal mineral clusters are added to pure H₂O water, a number of extremely complex physical changes occur, including:

- 1) The high zeta potential attracts water molecules to the vicinity of the colloid where the water molecules are strongly polarised into forming hollow cages that resemble Buckminster Fuller's geodesic dome.
- 2) This ordering of molecules reduces the entropy of water. This means that the Gibbs free energy increases. An increase in free energy in water means that the water can now support chemical reactions more easily and with less energy than before.
- 3) The surface tension or energy required to break the surface of water is greatly reduced. The phenomenon known as "wetting" is dependent on surface tension. The lower the surface tension the wetter the water. This means that the water requires less energy to wet substances.
- 4) The colloidal mineral cluster can act as vast reservoirs of negatively ionised hydrogen atoms. (This final part of the Flanagan's discovery was made ten years after they were first able to duplicate the minerals found in Hunza water).

Hunza-type waters have several things in common: they all come from high altitude mountain valleys and the basic source of water is from ancient ice-blue glaciers. This means that the water is pure and mineral-free like reverse osmosis or distilled water, since glacier water is ancient rainwater. It has no mineral salts like water found in springs and deep wells (7).

Lord Rutherford had discovered that proton nuclei could pick up electrons when they passed through matter. Since 87 per cent of cosmic rays are hydrogen protons, these high altitude glaciers may have trapped an enormous amount of hydrogen. As these cosmic rays passed through the glacial ice, they may have gained electrons in the upper layers of the glacier. In addition, it is well known that hydrogen protons can travel through ice crystals thousands of times faster than any other type of ion.

Dr. Castleman at the University of Pennsylvania has found that hydrogen can be trapped in cage-like water structures similar to geodesic domes (4). These geodesic dome-like cages were first predicted by two-time Nobel Prizewinner, Linus Pauling, in 1959 in his classic book, *The Hydrogen Bond* (17). In addition, these waters contain a small quantity of high zeta-potential colloidal mineral clusters (7). Patrick and Gael Crystal Flanagan discovered that Hunza water has special physical properties different from ordinary water. These properties include surface tension, viscosity, heat capacity and Gibbs free energy. These physical anomalies also contribute to formations in the structure of snow crystals. The Flanagan's task was to create water that was identical to Hunza-type water so that they could share it with the rest of the world. Patrick had spent 20 years trying to duplicate Hunza-type water. He tried to induce anomalous properties by applying energy fields from magnets,



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ionising and non-ionising radiation, crystals and pyramids. He was able to duplicate a few of the anomalous properties of Hunza water, but these changes were only temporary. These altered waters lost their anomalous properties with the passage of time.

In the first year of their joint research, Patrick and Gael discovered the secret of Dr. Coanda's anomalous water, and created the first laboratory analog of Hunza water. After ten years of additional research and development, they opened up a new domain in nanotechnology. They not only duplicated the properties of Hunza water, they also increased the quantity of negatively ionised hydrogen atoms millions of times over that was found in Hunza water. They duplicated a type of colloidal mineral cluster that is only found in Hunza type water. These mineral clusters act like tiny magnets, drawing water molecules to their surface, creating liquid crystals in the process. The electrical charge on these minerals alters the properties of water so that they produce the properties of Hunza water. These minerals are so tiny they are only 10 to 12 atoms in diameter (7).

A new emerging science, known as cluster chemistry, has shown that minerals in this size range have profound, unusual properties not found in any other form of matter (4). When substance is reduced in size to this dimension, electrons travel all over the surface of the mineral instead of being confined to localised areas like electrons found on ordinary colloids. These electron clouds form a zeta potential or negative electrical charge that attracts and organises water molecules, building a liquid crystal structure (4,7).

This water intimately resembles the water found in the living system rather than water that is found in ordinary mineral or tap water. These special minerals are the source of many of the unusual water properties described by Dr. Coanda. When we drink ordinary water, we have to convert it into cellular water before the cells can use it. If we cannot convert tap water into the structure of cellular water, it passes through our bodies and may leave our cells in a partially dehydrated state.

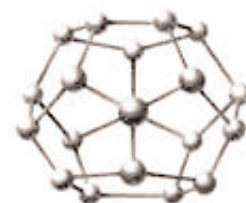
The tiny mineral clusters found in Hunza-type water, and duplicated in the Flanagan's' laboratory, create liquid crystal structures that resemble those found in the living system. These tiny mineral clusters may energise practically all nutrients with which they come in contact.

FUTURE RESEARCH ON THE HYDROGENS.

In addition to the presence of special colloidal mineral clusters, Hunza-type water contains negatively charged hydrogen ions that may be trapped in cage-like structures. It is only in the last year that the Flanagan's have been able to enhance the negatively charged hydrogen ions in water by millions of times. Everyone knows that the body needs oxygen in order to live. Recently, much attention has been focused on oxygen therapies. What many do not know is that we need hydrogen as much as we need oxygen. Oxygen burns hydrogen in the living system, releasing the energy that runs our bodies.

Studies have shown that the human body stores hydrogen in its tissues (12,26). As we age, tissue hydrogen-depletion may lead to many of the symptoms of the aging process. This may cause subclinical dehydration since it appears that hydrogen may play a role in hydrating our cells.

Symptoms of hydrogen depletion may include chronic fatigue, depression, hormone imbalances and indigestion. As our tissues are depleted of hydrogen, they become stiff and lose flexibility. Dehydrated tendons and muscles tear more easily, and dehydrated bones become brittle. Loss of lung flexibility leads to loss of oxygen. By replenishing our hydrogen stores, we may be able to relieve many of these conditions if they are brought about by hydrogen depletion. Hydrogen makes up 90 per cent of the matter in the known Universe: helium makes up 9 per cent.



Example of a molecular cage made up of 20 water molecules. This structure is formed by a phenomenon known as "hydrophobic hydration." It is a liquid crystal structure that may transport hydrogen protons and mineral clusters.

All the other elements in the Universe are found in the remaining 1 percent. Since hydrogen is so abundant, you would think that we know all there is to know about it, but we are just now learning about its importance in the living system. The word "hydrogen" comes from the Greek language and it means "water-former". Indeed, we all know that water, the matrix or mother of life, is made from hydrogen and oxygen. In fact, water is formed when hydrogen is burned by oxygen. We create pure water every day as a product of our metabolism. When we burn hydrogen in our cells, the energy that is released is used to run our bodies (12,26).

The living system contains numerous chemical messengers that carry information and trigger events in metabolism. New messengers are being discovered all the time. The most recently discovered chemical messenger is nitric oxide. It is known as the fifth messenger. What very few people know is that hydrogen is the final messenger in the living system.

Albert Szent-Gyorgyi, the Nobel laureate who discovered vitamin C, found that the tissues of the animal body store hydrogen in vast quantities (25). Different organ tissues 'pool' hydrogen in different amounts. For example, he found that the order of hydrogen-pooling is the following:

Liver> Intestine> Kidney> Heart> Lung > Spleen

Liver tissues store the most hydrogen, while the spleen stores the least. This is interesting in view of the fact that the liver is the body's first line of defence and needs a supply of the most antioxidants in order to do its work of detoxification.

Transport of hydrogen may be the missing factor in the search for the cause of the aging process and the secret to age reversal (22). As we grow older, our cells become dehydrated and our 'hydrogen pool' becomes depleted. The hydrogen pool protects our cells from free-radical damage. Virtually all longevity researchers agree that free radicals are responsible for the aging process.

There has long been an unsolved paradox in medicine, and that is the fact that oxygen is the source of all life and is also the major cause of aging (5). A tremendous effort is being extended to find a combination of powerful antioxidants that may control or reverse cell damage by oxidative free-radicals. Hydrogen may be the missing half of the life equation. It is hydrogen that protects our cells from oxidative free-radical damage and provides energy to the cells when it is burned by oxygen, which is the other half of the equation (22,26).

The single factor that is common to all antioxidants is that they are sources of hydrogen. Hydrogen is the ultimate antioxidant. Hydrogen is also the source of protons for ATP production. (Note: ATP or adenosine triphosphate is a biochemical energy battery that supplies almost all the energy needs of the human body (12,13,22). Our purpose of eating food is to ultimately create ATP which could be called the 'currency of life'.)

Hydrogen is the lightest and smallest element known to science. We now know that we each use about one-half pound of pure hydrogen every day just for the production of ATP. We have all heard of the carbon cycle in biology. The carbon cycle is the process by which plants use sunlight and water to create carbohydrates and other food stuffs. These are then used as food by animals who burn the food created by plants. Animals exhale carbon dioxide gas which is then taken up by plants. The plants then use the carbon to make more carbohydrates, proteins and lipids (fats) which then serve as animal food (12).

The carbon cycle could actually be renamed the 'hydrogen cycle'. Several patents have been issued lately that take advantage of the fact that plants are able to use infrared light from the sun to break down water H_2O into hydrogen and oxygen. The plants exhale oxygen into the atmosphere and add the hydrogen to carbon in order to make carbohydrates, proteins and lipids. Recently, scientists have succeeded in intercepting the hydrogen before it is made into food. The gas thus released can then

be used to run cars!

Plants create carbohydrates, proteins and lipids by attaching hydrogen to carbon atoms like hats on a hat-rack. Carbohydrates contain an equal amount of carbon, hydrogen and oxygen. We can say that all the foods that nourish us are primarily sources of hydrogen. We can see that the life cycle is really a hydrogen cycle. The 'burning of the hydrogen' is a secret of life. Free hydrogens that are released from the carbohydrates, proteins and lipids are carried into the mitochondria by a process known as the 'hydrogen shuttle' where they are used to make ATP. In this process, hydrogen is burned by oxygen, releasing energy. The final product from the burning of hydrogen is water.

This extra water is eliminated from the body and is eventually taken up by plants and split by photosynthesis to make more carbohydrates, proteins and lipids (12). While the above biological processes have been overly simplified in an effort to reveal the basis of the hydrogen cycle, we can see that life energy is controlled by burning hydrogen.

Albert Szent-Gyorgyi says in his book, *The Living State*: "Attaching hydrogen to a molecule means lending energy to it. Since in hydrogen the electron and proton are loosely coupled, by attaching a hydrogen we essentially attach an electron". In biological systems, hydrogen and electrons travel together in pairs. When this combination meets up with a positively charged cell-damaging free radical, the hydrogen may react with the free radical and neutralise it so that no further cell damage may occur (22). It is possible that hydrogen is the ultimate antioxidant. As a result of their discovery, Patrick and Gael Crystal Flanagan have been consuming large quantities of negatively charged hydrogen ions every day. Their new transport system may make hydrogen available to the cells without first having to be attached to food. These hydrogen ions may act as free-radical scavengers, and may also be used for the production of ATP. Since hydrogen bonds are the 'glue' that holds together the molecules in the DNA double helix, the Flanagan's believe these bonds can be activated and energised. It is well known that as we age, the DNA helix coils tighter and tighter, losing flexibility. It has been hypothesised that this contraction of the DNA coil may reduce the number of times that our cells can divide (22,26). Presently, our cells can only divide about 50 times before they cease reproduction.

If we are able to loosen the DNA helix by activating the DNA hydrogen bonds, it may have a profound effect on our ability to increase the regeneration of our cells. The DNA helix floats in water and is therefore hydrated. The tightening of the helix with aging may be a reflection of the 1055 of the hydrogen pool with aging. By restoring a plentiful supply of the hydrogen pool, these spirals may naturally unwind and regain their ability to stimulate cellular reproduction (22,26).

Authors: Working primarily in the field of bio-physics, Patrick Flanagan began his life long career as a research scientist at an early age. At 14 he invented the patented Neurophone® which has enabled many deaf people to hear. At 17 he was recognised by Life Magazine as one of the most important young scientists in America. As a primarily self-taught student, bypassing his teachers, he chose to work with prominent scientists as mentors, often as a consultant to the government, instead of following the traditional academic path to advanced degrees. In recognition of his more than 200 inventions and the significant advances in health care made by Patrick and his wife Gael Crystal Flanagan, he and Gael were granted Medical Degrees by the University Medicina Alternativa (M.A.) personally presented by the President of Sri Lanka at the World Medical Congress. The Flanagan's consider Microhydrin™ as their most significant discovery in a life time of developing life enhancing inventions for mankind. On March 14, 1994, Professor Anton Jayasuriya, Chairperson of the Medicina Alternativa Institute of Sri Lanka, in a letter to Patrick and Gael Flanagan congratulated them on their work, which he described as "their great discovery". He said he had proposed that their research on water be sent to the Nobel Committee in Sweden. *Dr. Henri Coanda, age 78, 'Father of fluid dynamics', and inventor of the first jet airplane, worked with Patrick Flanagan, age 18, at Huyck Research Laboratories, Stamford Connecticut, as consultants to the US Government. In addition to his many projects, resulting in over 600 patents, Dr Coanda, studied the properties of water consumed by the people of Hunza, to learn the secret of their longevity and low incidence of disease. He offered to turn over to Patrick all his findings, which enabled Patrick to continue the search, and later with Gael, to discover the negatively charged nanocolloids that make Hunza water unique.*



How to Use Flanagan Microclusters® Colloids

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WHAT ARE MICROCLUSTER® COLLOIDS?

Microcluster® colloids are to silica as Buckyballs are to carbon. Buckyballs are a new form of carbon discovered only recently. Previously, it was known that carbon came in only two forms: amorphous which is carbon black and crystalline which is the diamond. Then a new form was discovered, a geodesic form that makes tiny hollow spheres. In the same way, silica was previously found in amorphous and also in crystalline quartz form. Dr. Patrick Flanagan developed a Buckyball form of silica which is known as Microcluster® silica. Microcluster® colloids are tiny silica spherical balls that are about 5 nanometers in diameter. They group together to form larger, more complex spheres according to the mathematics of close spherical packing.

These colloidal particles have multiple charge sites and easily bond with water and lipid soluble substances. They have physical properties not previously found in other forms of silica (7).

MICROCLUSTER® COLLOIDS AND NUTRITIONAL FORMULATIONS

All nutrients must be wetted before they can be utilised by the body. Nutrients can be broken down into two types: lipid soluble and water soluble. Lipid or oil soluble nutrients are known as lipophilic or "oil loving" and water soluble ingredients are known as hydrophilic or "water loving" substances. All substances have a property known as Critical Surface Tension or CST. CST is the critical surface tension above which the substance cannot be wetted. The water soluble nutrients have a higher CST than the oil soluble nutrients. CST is based on the number of electrical charges on the surface of a substance. Water wets a surface by means of an electrical charge known as hydrogen bonding. The hydrogen atoms of the water molecule are positively charged. In order to wet a surface there must be free negative electrical charges on the surface. The greater the number of charges, the more easily the surface is wetted. Oil has no electrical charge, and as a result it cannot be wetted by water. Quartz crystal is highly charged and can easily be 100% wetted by ordinary tap water at 73 dynes per centimetre (7). So called water soluble organic nutrients are only soluble in water that has a surface tension below the CST of the substance. For example, a starch like dried mashed potatoes has a CST of 37 dynes per centimetre. Pure water has a surface tension of 73 dynes per centimetre. If we want to make mashed potatoes from dried instant potatoes, we have to heat the water to the boiling point thereby lowering the surface tension below the CST. If we lightly coat the potato surfaces with Flanagan Microcluster® colloids, we create a bridge for hydrogen bonds. If we add one gram of Microcluster® colloid to one litre of pure water, the surface tension of the entire bulk fluid is reduced to about 28 dynes per centimetre. Microcluster® colloids have an extremely high surface area, in fact, one teaspoon of Microcluster® colloids has a surface area of over 100 acres. In colloidal systems, all activity is a result of surface electrical charge. A simple illustration will suggest the immense powers that are being unsealed when we add our Microcluster® colloids to a nutrient system. Suppose we have a cube of silica measuring an inch on an edge. The total surface would be six square inches. The electrical charge is on the surface. Therefore, the greater the surface the greater the charge. If we divide the cube of silica into smaller pieces we increase the surface areas. By Microcluster® colloidal chemistry that silica cube can be divided into particles so minute that they are invisible, hence, instead of six square inches of surface emanating electrical energy, we have something like 127 acres. The charge on the colloids is much greater than the charge on the hydrogen bond. So what happens when we add Microcluster® colloids to a formulation is that these minerals bind to the surface of the nutrient. This increases the surface area of the nutrient and provides a huge number of binding sites for the hydrogen bonds in the bulk fluid (7). This ensures 100% wetting of the nutrient formulation. This ensures complete absorption of the vital nutrients into the body.

OIL SOLUBLE NUTRIENTS

Since oil soluble nutrients cannot be wetted by water, we encapsulate the oil particles inside a capsule of Flanagan Microcluster® colloids. We can do this because our colloids have a very special property, they are hydrophilic and lipophilic in nature. When we encapsulate the oil particles inside the colloidal structure we are creating a tiny ball that is bound to water on the outside and to oil on the inside. We have created an artificial "chylomicron" which is very similar to chylomicrons that are produced by the body when it digests oil. Chylomicrons are tiny spheres of oil that are surrounded by a covering of bile and other biological substances. Like the Microcluster® sphere, chylomicrons have a negative surface charge or zeta potential. It is this negative electrical charge that causes the chylomicron or Microcluster® sphere to be absorbed by the lymphatic system from the intestines.

These particles essentially by-pass the liver on their first entrance into the body. Dr. E.M. Carlisle of the University of California reported in Trace Elements in Human Nutrition that silica is "absorbed through the intact intestinal mucosa, pass through lymphatic and circulatory systems, and reach other tissues supplied by arterial blood via the alveolar region of the lung" (2). This means that nutrients that are closely bound to Microcluster® silica colloids are easily carried to every cell in the body.

HOW MUCH MICROCLUSTER® POWDER TO USE?

The amount of Microcluster® powder to use in a formulation is determined by the surface area and CST of the original nutrient. If the nutrient particles are water soluble and relatively large in size, the surface area is then relatively small. This means that a small quantity of Microcluster® colloids will coat the surfaces and ensure complete wetting by water. If the water soluble nutrient can be destroyed by the liver and it is desirable to by-pass the portal vein from the intestines, the nutrient must be completely encapsulated by Microcluster® colloids. Encapsulation requires a larger amount of product. If the nutrient is a lipid soluble substance it must be completely encapsulated by Microcluster® colloids to ensure the absorption via the lymphatic pathway. Particles as large as 5 microns in diameter can be absorbed into the lymphatic pathway. This means that very large, high molecular weight nutrients can be easily distributed into the lymphatic pathway, bypassing destruction by the liver.

As a side note, as much as 25% pure oil can be mixed into the dry Microcluster® powder while maintaining easy mechanical flow properties. In addition, the high zeta potential causes the stabilisation of other colloidal solutions when our product is added to colloidal solutions that were previously unstable.

SUMMARY

Dry Flanagan Microcluster® colloidal powder is a new form of silica that has properties not found in any other form of silica. These particles average 5 nanometers in diameter and are spherical in shape. They present a very high stable zeta potential or electrically charged surface acting as electrical magnets for water and oil molecules. Dr. Bruce Marlow, Professor of Colloidal Chemistry at the University of Massachusetts, Amherst thoroughly studies our product and said: "The silica particles in the Flanagan Microcluster® colloidal mineral concentrate are unique and exhibit properties that are distinctly different from the properties of other silica surfaces".

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Microhydrin[®] in Dental Care

LEONARD C. MILLER, D.M.D.

Microhydrin[®] when used as a dentifrice has been found to aid in maintaining good oral health and reducing periodontal pocketing in gingivitis and mild periodontitis. This is directly related to dental plaque and the action Microhydrin has on plaque removal.

Chronic periodontal disease is responsible for the majority of tooth loss in people over 35 years. The primary factor in the development of dental caries and periodontal disease is the establishment of microorganisms in the form of plaque (9,18). These bacteria produce toxins, which are capable of causing tissue destruction. Acid buildup in dental plaque is responsible for initiating tooth caries. If untreated, gingivitis leads to periodontitis and can eventually lead to tooth loss (9,18). The most effective way to prevent gingivitis is plaque control. The most dependable way of controlling plaque is by mechanical cleansing with a toothbrush (or equivalent device), dentifrice and other cleansing aids, especially dental floss (9). Tooth brushing removes plaque and materia alba and reduces the onset and prevalence of gingivitis and retards the formation of calculus. Removal of plaque leads to resolution of gingival inflammation in its early stages (9). For best results, toothbrushing requires the cleansing action of a dentifrice.

Preliminary observations have shown that brushing with Microhydrin[®] can reduce periodontal pocketing by 2-3mm in persons with 4-6 mm pockets. These results were obtained by emptying a capsule of Microhydrin[®] in a half inch of Crystal Energy[®] water in a 5 oz. dixie cup, dipping the brush in the water, and brushing as usual over a period of time.

Microhydrin[™] in Dental Care

Another benefit of brushing with Microhydrin[®] is that continued use seems to "whiten" teeth considerably. It is more effective than any other "whitening toothpaste" that is presently on the market. It is also less invasive than the whitening procedures used in the dental office. Dental plaque consists principally of proliferating microorganisms, and a scattering of epithelial cells, leukocytes and macrophages in an adherent intercellular matrix (9,18). Organic and inorganic solids form about 20 percent of the plaque. The other 80 percent of plaque is composed of water (9). When a capsule of Microhydrin[®] is added to water it reduces the surface tension of the water from 73 dynes to 45 dynes. This lowered surface tension allows the water to adhere and increase the solubility of the plaque particles for more effective removal from the tooth surface. This fact seems to be the most significant reason for the effectiveness of Microhydrin[®] as a dentifrice. When plaque accumulation is retarded gingival health can be restored.

Author: Dr. Leonard C. Miller received his B.A. degree from Boston University in 1966. He received his D.M.D. in 1976 from Tufts School of Dental Medicine, Boston, Mass. Dr. Miller served for 2 years in the United States Air Force Dental Corps. He is a member of the American Dental Association, the Massachusetts Dental Society and the Academy of General Dentistry. For 20 years he has treated patients in his private Family Dental practice in North Grafton, Mass.

Microbrite[®] has been created to be used as a dedicated tooth cleaning powder, the bottle last up to three months and contains Microhydrin[®] in a balanced dose.

'The Elixir of Life'

This extract is from 'Towards a New Alchemy' By Dr N. Begich. pages 86 to 103

Most people think that water is the same everywhere. Not so, say Patrick and Gael Crystal Flanagan. There are significant differences in water throughout the world beyond just the factors which most of us think about - taste, appearance and hardness {mineral content}. The flow of moisture through the world is as important as the flow of blood through the human body. Blood consists of 92% water. The right kind of water is critical to optimum blood flow through the body. It is through the blood circulatory system that toxins are removed and important nutrients delivered to the various parts of our bodies.

Blood carries nutrients to the very fine vessels called capillaries. These in turn release the nutrients into a water-based fluid between the cells called lymph. This fluid surrounds and bathes each cell of our body and keeps each cell from coming into direct contact with others. The capillaries drop oxygen and food into the lymph where it can then be transferred to the cells of our bodies for use. The lymph system requires the right kind of water for it to achieve a maximum level of efficiency.

Dr. Roy Walford of UCLA suggests that our bodies should last 120 years. It has also been suggested that many of the symptoms of the aging process may be due to accumulations of toxins and free-radicals in the cells of the body. These toxins are created by combinations of the food we eat, liquids we drink and air we breathe. The overload of toxins we take into our bodies keeps us from being able to absorb the levels of nutrients we truly need. If the blood we use to transport toxins and nutrients is polluted and thickened, it does not flow as required for optimum health. Research shows that most people have extremely polluted blood streams.

The Search for The Ultimate Water. The story of how the Flanagans discovered Crystal Energy® Pure water has a structure which resembles the water found in vegetables and fruits. When the Flanagans observed the juices of freshly picked fruits under high power microscopes, they found "somatids," - thought to life-energy mediators. "Crystal Energy® " water is uniquely structured to mirror the structure of the water in fruits and vegetables. begins several years ago when Patrick was still working for Huyck Research Laboratories in Connecticut. There he met Dr. Henri Coanda [1885-1972] the father of fluid dynamics. In the 1920's a Rumanian scientist, Dr. Coanda, discovered that water tends to cling to any surface. This discovery was considered so significant by physicists that they called it the "Coanda Effect".

Dr. Coanda was always intrigued by the stories from various parts of the world where people were known to live for extraordinary life spans. He had always thought that it might be connected to the water that they drank. In Hunza people maintain their vitality beyond 100 years.

He was convinced that the structure of the water held the key to its uniqueness. He began considering the molecular structure of the water and measuring samples against ordinary water samples. He studied the crystalline form of water by observing snowflakes manufactured in his laboratory. He found that in the centre of each frozen snowflake a small network of tubes of water circulated like blood in the veins of humans or like sap in plants. It was as if the water were alive!

Dr. Coanda observed that when the flow of water slowed and solidified the life of the snowflake ended. It was also observed that when people regularly drank the water which was "alive" it seemed to add life to them. Dr. Coanda continued his research, including analysis of water from several locations where human life spans were extraordinarily long. The same characteristics were observed in the water from these other locations. Dr. Coanda returned to his native country to become the president of the Rumanian Academy of Sciences. Just prior to leaving he passed on his 60 years of

accumulated research to his young colleague and collaborator at Huyck Laboratories, Patrick Flanagan. Coanda told Patrick, "I think you are the only one I know who can eventually come up with a system to make Hunza water available anywhere in the world."³² [Secrets of the Soil, Vortex of Life, by Peter Tompkins & Christopher Bird, 1989, pages 99-115] Water has a number of unusual attributes. It is considered a universal solvent. It has 36 distinct isotopes, each possessing different properties. It is capable of dissolving any element, even gold. It grows lighter rather than heavier when it freezes. It also has surface tension, a force that causes it to stick to itself, forming a sphere, the shape with the least surface tension and requiring the minimum amount of energy to maintain its shape. The potential strength of water is significant. If all of the gas bubbles in water were removed a column one inch thick would have the strength of steel.

Water is composed of liquid crystals surrounded by large numbers of chaotically random molecules. It has been theorised that water, even when boiling, contains some crystalline forms which maintain their shape and structure even though the rest of the water is vibrating vigorously at random. As water cools it forms increasing numbers of crystal forms until the entire mass of ice is virtually all crystalline.

When animals, plants and humans drink water they structure the water to form crystals with a smaller number of unorganised molecules. This happens as a result of tiny high-energy particles being suspended in the water. These particles are referred to as colloids and are so small that even powerful microscopes miss them. These small particles act as "energy seeds" which carry a charge causing free molecules of water to become attracted to them thus forming the nuclei of liquid crystals. In order to take this form the colloids must maintain a high electric charge which is possible because of the organic coating they gain in the living system.

Another observation which Flanagan made was that certain crystalline minerals reduce surface tension merely by making contact with these mineral crystals. The reduced surface tension means that the water is "wetter" and more readily absorbed. The observation led to more questions. Where did these mineral crystals gather the energy to change the surface tension of water?

Flanagan found that the surface tension of ordinary tap water was 73 dynes per centimetre while the Hunza water's surface tension was 68 dynes. The Hunza water also maintained a negative net electrical charge which means the rotation of the molecule was to the left rather than the right. The negative charge is one of the key factors in the healthful effects of the water. The negative charge is an important attribute of the water which causes it to bond with positively charged molecules.

The cloudy Hunza water contained virtually every known mineral element including a high concentration of silver. These elements were all in the super-microscopic colloidal form. The water did not contain mineral salts. These tiny particles, the colloids, do not dissolve but remain negatively charged and suspended in the solution as self repelling particles. They are self repelling because the charges are the same and, like the negative poles of two bar magnets, they push away from one another.

The glaciers of Hunza land with their tremendous weight against the surrounding rock formations grind the rock into super-fine powder. This glacial silt is caught up with the melting outflowing water and tumble down the sides of the mountains. The water becomes murky with these suspended solids and even after the movement stops the colloidal minerals remain in the water. These colloidal minerals are coated with some kind of organic substance which he believed came from some ancient strata that the glaciers had also cut through. In his laboratory, the search for the means to create these same properties in water was attempted. However, he was not able to replicate the characteristics in these early experiments.

Flanagan contemplated the nature of the water and what was happening with it as it flowed down the mountains. He realised that the motion the water experienced might be contributing to the effect.

As water travels it flows at different rates of speed causing small spirals or vortices to form. These flows cause an electric current to be generated. This observation made it possible to duplicate this important property in the water. The water vortices shrink in diameter and extend in length and then contract and enlarge in diameter. The oscillation continues periodically and rhythmically.

The curvature of these vortices mirror a universal matrix observed by other researchers. T.J.J. See, a professor of mathematics, showed that the entire universe revolved around a geometric figure known as a rectangular hyperbola which is the same as a water vortex. This discovery of the basic curve apply to many phenomena according to See, including the laws of magnetism, gravity, planetary motion and, most importantly to the surface-to-volume relationships and the structuring forces which grind all matter. The idea that cosmic energies could be captured and held by the water was pursued by Flanagan in his experiments.

A significant electrical charge is generated by these vortices of water. Flanagan demonstrated the electrical potentials by placing a specially prepared wire down the centre of a vortex of water, being careful to not contact the water sides. The water was spinning at about 1,000 revolutions per minute and using another electrode touching the water he was able to record a charge of 10.000 volts.

In the 1930's a German physicist named Paul E. Dobler demonstrated that water flowing in underground passages radiated an unknown energy. This energy radiation he called an X-band because the equipment did not exist at the time to measure it. He designed a device which could record the effect on x-ray film. Other physicists replicating the experiments showed the same results but could not explain their observations. The idea that the movement of water underground could create a radiant energy did not fit the mould which physics had been pushed into in the 1930's. Flanagan continued his research in vortices and developed a device capable of creating the "perfect vortex." He called the device the "vortex tangential amplifier." Using this device he was able to lower the surface tension of water to an all time low of 26 dynes per centimetre, which is the same as ethyl alcohol. When water tension was lowered to the extreme was that it would revert to its normal surface tension rather than remain stable. It was found that at 38 dynes the surface tension could be maintained and last for years.

The basis of Flanagan's understanding dealt with the unique characteristics of the tiniest colloids. Large colloidal materials would lose their charge whereas the smallest particles would retain their charge, which made them optimally long lasting. The ability to retain the electrical charge is known as Zeta-potential. Thomas Riddick, a colloidal chemist, says that Zeta-potential is what is responsible for the billions of circulating cells in the body maintaining their discreteness. He found that blood cells are kept in circulation by this Zeta-potential or negative electric charge. The entire living organism is made up of colloids which flow according to electrical attractions. Blood cells are coated with albumen a substance that allows them to maintain their charge and separateness from other blood cells. Unhealthy foods or high toxic levels in the blood, poor oxygen intake and other factors cause the blood to clump together, losing discrete form. This impairs the transfer of energy and the flow of nutrients through the system. Conversely, if you eat and drink highly charged colloids from fresh vegetables and fruit, or from the right forms of water, increased negative electric charges will be found on blood cells. This increases human health and energy.

The water Flanagan invented duplicated the key properties of Hunza water. He found that by adding only one teaspoon of the concentrated 38 dynes per centimetre water to a gallon of distilled water the surface tension would be between 55-65 dynes, This water when taken into the living organism changes the state of the cells within a few minutes. The cells of blood when observed under the microscope change from being clumped together to being separate and discrete.

The idea that this water's altered structure might have other beneficial uses was also explored. In one instance this newly engineered water was used in cement where the strength of the solidified

concrete was increased from 8,400 pounds per square inch to 12,300 pounds per square inch. In another test on cement the air content of partially liquid cement was measured. It was found that the air content, which makes cement weaker, was only 30 per cent versus 70 per cent with ordinary water. In addition, the treated cement required less water and demonstrated greater flow and plasticity.

Flanagan found that reversing a vortical flow's direction caused increased potentialising of the water. This was the same mysterious energy found by earlier researchers and yet unexplained. What happens when the fluid is turning is that an amount of energy is present in the whirling flow of the water. When the flow is abruptly reversed the energy must go somewhere and, in this case, it has to be absorbed into the hydrogen bonds of the water. This increases the Zeta-potential, making the water more ingestible by living things. The change in direction causes the vortex to collapse by imploding or falling into itself. In so doing, what appears to be total chaos is, in reality, the formation of many vortices of water and exchanges of energy.

Flanagan worked to develop the highest energy potentials of the water he created with his newly discovered 33 step process. He knew that the higher the Zeta-potential achieved, the better in terms of removing toxins from the body and carrying nutrients throughout the living organism. The Microclusters[®] he created energise everything they come in contact with. When the University of Minnesota studied his invention they found that the size of the colloids was as small as five nanometres [five billionth of a metre]. They are so small that 240,000 of them can be placed side by side on the head of a pin while at the same time they have an incredible surface area of 240,000 square feet per ounce.

Another way to illustrate this is to take a cube measuring one inch on each side. The total surface area is six square inches. The electrical charge is held on the surface of the substance. Therefore, the greater the surface area the greater the electrical charge. If we slice the cube into the thinnest possible slices we get an increase in surface area. For instance, if you just sliced the cube into one hundred slices you would have a surface area, front and back, of 200 square inches. Think of this illustration in terms of Microclusters[®] five billionth of a metre in size and the surface area they can cover. When various nutrients are combined with Microclusters[®] they are enclosed in a geodesic sphere structure composed of a form of silica. These structures then carry the nutrients to the parts of the body where the cells can use them. These tiny nutrient and mineral combinations have unusual energy and catalytic abilities making them much more effective when they reach the cells.

Living Water

Another early researcher into the anomalies of water, Viktor Schauberger, concluded that life was based on explosions. He believed from his observations in nature and experimentation that this was the case. In his laboratory he built an egg shaped "vortex reaction chamber" which he also referred to as an "implosion chamber." These chambers caused the energy releases to flow to the centre rather than toward the outer edges like an explosion. He believed that to optimise life things should flow with nature rather than act against natural flows.³³[Secrets of the Soil, Vortex of Life, by Peter Tompkins & Christopher Bird 1989, pages 99-115]

Viktor Schauberger observed that energy entering matter like water and air did so with inwardly spiralling energy. He observed that these inward spirals were the building forces of nature, imploding towards the centre, the energy flows in life giving funnels of power. The energy of decaying forces on the other hand were always outflowing explosive energies. Based on these observations in nature he believed this principle should be applied to technology.

Schauberger believed that the prevailing technology was using the wrong form of motion. These forces always scattered energy whereas nature uses a different kind of energy in creating order and

growth by focusing inward. He warned that the system that men had adapted of burning fossil fuels and splitting atoms filled the world with heat-generating motion which flowed in the wrong direction. He believed that modern technology would use the principles of implosion, or inward flowing motion, in its future developments.

The Energy Exchange

The Microcluster[®] colloids produced by the Flanagans exhibit a property which is known as hydrophobic [hydra= water & phobic is a dislike of] hydration. Hydrophobic refers to particles which have little or no affinity towards water. It was once thought that these kinds of particles would be suspended in an "iceberg quasi-crystalline" structure. What is now known is that these particles actually become suspended within cage-like structures formed by the water molecules. This increases the structured order of the water where the molecules then pack more closely together decreasing in volume and decreasing the surface tension of the water.

Entropy is a measure of the amount of unavailable energy which is also reflected as the amount of disorder or chaos in a system. The lower the entropy, the more energy is available and the more organised the system. Energy of entropy is directly related to the organisation of structure. A system with low entropy is a system in chaos showing only random motion. By use of Micro-cluster[®] the organisational structure of the water is increased and entropy decreased, creating higher levels of "free energy" - energy available for other work.

When Microclusters[®] are added to the water the idea of hydrophobic hydration discussed earlier comes into play. What happens is that the water-disliking particles become trapped within a geodesic structure formed by the water molecules. As a result, the organisation of the structure of the water changes and becomes increasingly more uniform. This can be thought of as a liquid crystalline structure. This causes the water molecules to pack more tightly resulting in a reduction of the water.³⁴["Flanagan Microcluster[®] Colloids and Negative Entropy" by Patrick and Gael Crystal Flanagan, 1994] These structures, formed around the minute particles, do not bind to the particles themselves. The particles are trapped in suspension within their cages. These particles are then free to vibrate and rotate in suspension. The vibrational and rotational energies create patterns of energy throughout the newly structured water which form patterns that are similar to holograms.
35Ibid

These observations might be applied to explaining homeopathy. Homeopathic treatments are used throughout Europe and Asia and have been for years. These remedies are based on the idea that water can act as a carrier of the "memory" of various elements and compounds which can then create reactions in the body causing healing. Homeopathy comes under attack from time to time because mainstream science, until recently, has had difficulty explaining why this system of healing works. In other words, what is observed does not line up with the current view of the science. The science has advanced and now is more clear in describing why some of these effects may occur.

In the process of preparing Homeopathic remedies, hydrophobic hydration "cages" are formed around the remedy particles. These particles are then free to vibrate their own unique frequency in these cages thereby producing energy waves which most likely produce holographic information patterns in the water structure. These information patterns may be picked up by the cells which then alter cellular processes. The use of Microcluster[®] colloids in the production of Homeopathic remedies makes this process easier and more efficient. A few European Homeopathic manufacturers are now using Flanagan Microcluster colloids as carriers in their medications. The use of this technology increases the potency of the remedies.

Nutritional Formulas

All nutrients must be wetted before they can be used by the body. Nutrients can be divided into two general categories - those which are water soluble and those which are lipid or "oil" soluble. Lipid soluble nutrients are known as lipophilic or "oil loving" and water soluble nutrients are known as hydrophilic or "water loving." All substances have a property referred to as Critical Surface Tension [CST]. Critical Surface Tension is used to describe the level above which a substance can not be wetted. Water soluble nutrients have a higher CST than oil soluble substances.

Critical Surface Tension is based on the number of electrical charges on the surface of a substance. Water wets a substance by means of an electrical charge called hydrogen bonding. The hydrogen atoms in the water molecules are positively charged. In order to wet the surface of a substance the surface has to have free negative electrical charges on the surface. The greater the number of charges the more readily wetted. Oil has no electrical charge and as a result can not be wetted by water. Quartz crystal [silica] is highly charged and can be easily wetted by water.

Water soluble organic nutrients are only soluble in water which has a surface tension below the surface tension of the substance. If the water is ordinary tap water with high surface tension the nutrients will not be absorbed into the solution. If it is not absorbed into solution, the nutrients will not be efficiently transferred to the cells in the body. With Microclusters the surface tension of the water is so significantly reduced that nutrients can be moved into the cells with great efficiency. The interaction resulting from the use of Microclusters[®] is that the nutrients become wetted to the point where they can be easily absorbed into the body and used.

Oil soluble nutrients can not be wetted by water. It is important to remember that Microclusters are hydrophilic ["water loving"] and lipophilic ["oil loving"]. Oil particles can be trapped within a Microcluster colloid. When oil particles are encapsulated in this way a tiny ball is created which is bound to water on the outside surfaces and to the oil on the inside surfaces.

These oil containing "cages" are very similar to what the body naturally produces when it digests oils. The body produces what are called chylomicrons which can be visualised as tiny spheres of oil which are coated with a covering of bile or other biological substances. Like the body's chylomicrons, Microclusters have a negative surface charge or Zeta potential. It is the negative electrical charge which allows either a chylomicron or a Microcluster sphere to be absorbed into the body. The absorption occurs through the lymphatic system from the intestines. These particles by-pass the liver on their first entrance into the body. 36[Dr. E. M. Carlisle of the University of California, reported in "Trace Elements in Animal and Human Nutrition", that silica is "absorbed through the intact intestinal mucosa, pass through the lymphatic and circulatory system, and reach other tissues supplied by arterial blood via the alveolar region of the lung."]

The amount of Microcluster powder used in formulating the solution is dependent on the surface area to be covered and the CST of the original nutrient. Remember that the particle size has a relationship to surface area: the amount needed to cover the surface is relatively small. The smaller the size, the higher the surface area of a similar mass of the nutrient. The key is making sure that enough of the Microcluster solution is present to ensure complete wetting so that the nutrient can be absorbed by the body.

some nutrients can be destroyed by the liver. The use of Microclusters for encapsulating these nutrients in the geodesic cages described earlier allow for these to by-pass the liver and be absorbed by the lymphatic system. Particles as large as five microns in diameter can be absorbed whole into the lymphatic system if they can get by the liver. What this means is that very large nutrients with high molecular weights can be easily distributed into the lymphatic pathway by-passing the destruction by the liver.37[Earthstar, VolXIV No. 88, "Drs, Gael Crystal and Patrick Flanagan, Putting the 'Physics' Back in Metaphysics" October/November 1992]

According to Dr. Patrick Flanagan, "In the digestive system, nutrient absorption depends on the wetting of nutrients by water. The wetting process depends on surface tension: the lower the surface tension of the digestive fluids, the more effective will be the nutrient absorption. There are three sites of absorption in the digestive system. Alcohol is the only nutrient absorbed by the stomach. Carbohydrates, amino acids and other nutrients that are water soluble are absorbed through the 'hepatic' pathway from the small intestine. The portal vein carries these nutrients to the liver where they are further processed before being used by the body."³⁸[Ibid] Microclusters lower the surface tension in water which allows for the increase in efficiency in nutrient transfers into the body.

Looking at the Microcluster®

Dr. Alex Carrel won the Nobel Prize in medicine for demonstrating that living cells can be kept alive indefinitely. Dr. Carrel said, "The cell is immortal. It is merely the fluid in which it floats that degenerates. Renew this fluid at intervals, give the cells what they require for nutrition, and as far as we know, the pulsation of life may go on forever."

The fluid that this researcher was referring to is cellular water. Cellular water has unique form because it is structured out of liquid crystals as opposed to ordinary water which lacks liquid crystal form. Many attempts to duplicate Dr. Carrel's work have met with failure because other researchers were unable to duplicate his secret solution used in vitalising the cells. The secret of long cell life is in the energy mediator which is found in the fluids of all living things. The mediator may have been discovered by Dr. Gaston Naessens of Canada. He called the cellular energy transformer a "somatid" which means "tiny body". The discovery made by Dr. Naessens could not have been made without the invention of a new and powerful microscope. Dr. Naessens microscope allowed him to see objects never visible to the human eye and which could not be seen using ordinary microscopes or electron microscopes. In his early research [1940's] as a microbiologist, he observed something in the blood which could barely be seen under the best microscopes of that time. He knew that the ability to see an object under a microscope was dependent on the ability to illuminate the object. He discovered a way to create a much more powerful microscope. He was successful in inventing the Naessens Microscope, now available to researchers. This is one of the tools which Dr. Patrick and Gael Crystal Flanagan have used in their research into water and other areas.

Patrick and Gael Flanagan have made good use of this invention, using it to observe these ultra-small energy mediators - somatids. These somatids look like tiny flickering points of pure light which appear to dance around live human blood cells. These super small points of light are in the body fluids of all living things from plants to animals. In fresh vegetables these somatids are found in abundance. As fresh food ages the number of somatids decreases, as does the vitality of the food.

What Dr. Gael Crystal Flanagan noted was that, "In foods, we have found that live, organic raw fruits and vegetables as well as their juices quickly affect the blood in a positive way. The discreteness and mobility of blood cells and somatids are rapidly enhanced. The microscope has enabled us to rapidly see the difference between organic vital food and devitalised and processed foods."³⁹[Earthstar, VolXIV No. 88, "Drs. Gael Crystal and Patrick Flanagan, Putting the 'Physics' Back in Metaphysics" October/November 1992.] The Flanagans observed that poisons and pollutants destroy the energy or Zeta-potential of foods. The research conducted by the Flanagans correlates what was observed in plants with humans. The Flanagans found profound changes in blood samples after the use of Microclusters®. They found that the concentration of somatids markedly increases with the ingestion of water treated with Microclusters®. Moreover, when feeling tired and sluggish a direct correlation between the density or concentration of somatids in the blood was observed. They found somatids in Hunza water, Crystal Energy and fruits and vegetables. By observing somatids concentrations in their blood after eating, sleeping, exercising and other activities the Flanagan's have designed a lifestyle with maximum energy levels.

They also found that certain specific nutrients had a profound effect on human blood. Vitamin B12, for instance, has unique electrical properties which cause them to function as energy transducers, changing the energy from one form to another. They found that the best type of B12 was co-enzyme B12 which is the form naturally stored in the human body. When this form is taken it bypasses the body's five-part natural B12 manufacturing process. Dr. Gael Flanagan explains that, "The reason vitamin B12 is energising to the body is that all tetrapyrrole or porphyrin ring type structures act as energy transformers for the living system. The algae Spirulina contains an enormous quantity of these pigments including co-enzyme B12".40[Earthstar, Vol XIV No. 88, "Drs. Gael Crystal and Patrick Flanagan, Putting the 'Physics' Back in Metaphysics" October/November 1992]

The Flanagans found that Adenosine Triphosphate [ATP], as the energy giving molecule, has a powerful effect on blood when it is delivered to the fluid outside of cells. Normally, ATP is manufactured and used inside of cells rather than on the outside. Very little ATP appears on the outside of the cells in the lymphatic fluids which are found there. Research has shown that this energetic substance has a powerful effect on the outside of the cells, acting like a powerful neurotransmitter. In this case it exerts a powerful influence on extra [outside] cellular receptors. Fresh natural foods contain an abundance of ATP.

The Flanagans, through this microscopic research into blood, were able to observe the effects of foods most American ingest regularly. These processed and fat laden foods thicken and devitalise the blood. They also observed that many products contain aluminium such as deodorants and antacids. Aluminium is a small atom which has a triple positive valence and wreaks havoc with the negatively charged blood. According to the Flanagans, aluminium entering the body through aluminium cans, cookware and as additives in various products should be avoided.

Imbalances between potassium and sodium or calcium and magnesium could have profound effects on blood. Most processed foods are devitalised partially because they reverse the concentration of these important nutrients. Natural foods contain more of the right proportions of the correct nutrients which food processing reverses. In the case of sodium/potassium balances natural foods contain as much as five times the potassium as sodium. In the case of magnesium/calcium balances, natural foods contain twice the magnesium as processed foods. The proper proportion of these nutrients is critical to blood balance and good health. Excess magnesium moves calcium from the softer tissues in the body into the bones where it is needed. When calcium is in excess, hormones are released which move calcium away from the bones into the softer tissue where the excess calcium ions destroy cells.

The Flanagans research has shown the importance of eating the right foods in the right form. Also, their research reinforces the role of water as a carrier for energy and nutrients transfer into the body and a remover of toxins. By adding Microcluster colloids, increased efficiency in the nutrient transfer process occurs. If food and vitamins are spread out over the day and combined with the right water, the body can increase the efficiency of those transfer even more.

The circulation of blood is also significantly enhanced by exercises such as T'ai Chi Chuan, walking and yoga. Breathing exercise are also powerful body vitality enhancers. Health can be significantly enhanced with the right combination of diet and water. This is one of the keys to maintaining health and vitality as we age. Their life's research has led the Flanagans down a number of unusual paths. Through their diverse work they have studied the energy which flows through the acupuncture points as well as other subtle energies in the body. They have constructed instruments which can measure these very fine bioenergies. They have shown that the energy around the human body can be altered by diet, exercise, attitude, water intake and a number of other factors. The changes in the overall energy state of the body can be dramatic.