

Aqua Resonance. (Clustered Water)

A summary of the work of Dr. Lee Lorenzen

By Stephen Cherniske, M.S.

Background

Aqua Resonance is the trade name given to clustered water solutions developed by Dr. Lee Lorenzen.

To realize the value and potential of these solutions, it is useful to review some organic chemistry so that we understand the framework upon which this breakthrough research has been conducted.

The water molecule is formed by the covalent bonding of two hydrogen atoms to one oxygen atom. To complete its outer shell, oxygen needs two electrons, and it obtains these by sharing an electron with each of two hydrogen atoms. These bond to the oxygen atom to form a triangular structure, and this shape is important because it forms the basis for many of the solutions and compounds that support life.

Now, these covalent bonds are polar bonds, that is the shared electrons are attracted more strongly to (or "spend more time with") the oxygen nucleus than to the hydrogen nuclei. This creates a small negative charge in the area of the water molecule near the oxygen nucleus, and a small positive charge near the two hydrogen nuclei. Clusters form because the positive charge of the hydrogen atoms of one water molecule is attracted to the negative charge of the oxygen of another water molecule. It is well known that such hydrogen bonds play important roles in many biological compounds, and are essential for maintaining the shape of large molecules such as proteins and nucleic acids.

As we will explain, scientists are now discovering something rather remarkable and revolutionary, and that is that a molecule's shape is as important to its function as its composition.

Cluster technology has opened an entirely new arena of materials science.

Iron, for example, adsorbs hydrogen 1,000 times as fast in ten-atom clusters as it does in 17-atom clusters. Electronic bonding patterns, determined by cluster shape, alter the behavior and properties of solids, liquids and even gasses. When electrons are shared by the whole cluster in a delocalized pattern, negative charge is evenly distributed and the cluster may take on certain aspects of solid metal, such as conductivity. When the electrons are all tightly bound to atoms, the clusters resemble discrete molecules. The discovery that small changes in cluster size can produce large differences in behavior strengthens the notion that clusters represent a distinct phase of matter.

If this is all new to you, you are not alone. The emerging science of structural biology is shaking up what most of us understood were immutable laws. You can, for example, take a protein from the body that has a well documented function. Replace many of the amino acids, but maintain the same exact structure, and that protein will function in the same way. We learn how water transports protein through the body, but are now finding out that the movement of water is just as precise. In fact, cell membranes throughout the body utilize special proteins to transport water (1), and intracellular water turns out to be highly organized. Instead of the amorphous solute that we all saw in Bio 101, water appears to exist within the cell in a complex multilayered structure.

Molecular biologist Gilbert Ling, using X-ray diffraction and Neutron scattering techniques, has shown that cytoplasmic water is remarkably different from a simple dilute aqueous solution (2). Roschach at Rice University and Clegg at the University of California have both confirmed this using quasi elastic neutron scattering (QUENS)(3). Srivastava and Bernhard have shattered the idea that biochemical reactions take place in the cell by free diffusion. Their investigation of the glycolic pathway illustrates that metabolic intermediates are virtually all enzyme-bound and are <channelled> between enzymes through structured water (4).

Now, one of water's most important functions is to maintain and influence protein structure. Michael Rodbell won a Nobel prize for his work with protein folding and G peptide, specifically for elucidating the role that these proteins play in cell communication or signal transduction. In and through this protein, there is a matrix of clustered or organized water (5)(6). In fact, Dr. Julia Goodfellow at the Department of Crystallography in Birbeck College, London, has shown that it is the interaction of structured water with biological macromolecules that causes the protein folding. And so begins our discussion of biophysics.

Water, water everywhere.

The water within our body, known as <biowater>, is <intimately involved> in cell physiology; not just in the movement of nutrients and the removal of toxins and waste. It is becoming clear that water plays an active role in cell communication and thus literally thousands of metabolic functions.

I was taking graduate courses in physiology in the mid 70's, and remember quite clearly that cell communication was limited to a discussion of receptor sites, hormones, and the intricate but fairly well-understood workings of the brain and nervous system. What no one seemed to want to tackle was the enormous question of how the rest of the body communicated. Obviously, trillions of cells contribute to the miraculous organism called man, and these cells, contrary to the diagrams in the textbooks, were not isolated little bags of cytoplasm stacked together into human form. There was inherent in this study, an enormous missing puzzle piece having to do with the interactions of cells apart from the mechanical and neurologic communication systems.

The transmission of information from DNA to RNA is a good case in point. We had beautifully stained microscopic views of mitosis. It was easy to understand the breaking of nucleotide bonds and the replication of the double helix. But cells perform thousands of other functions which are all controlled by DNA. I was perplexed by drawings of DNA fragments "breaking off" and attaching to RNA. "This is impossible," I protested, and my professor agreed. "It's just the way they choose to represent a process that is not understood," he replied.

Well, we now know that the flow of information from DNA is constant and that the schematic textbook representations were utter nonsense. We now know that in the core of that double helix is a column of water clusters, and that information is transmitted at lightning speed via resonant frequencies. That's right, vibrations.

I can hear the gnashing of teeth. You hate that right? It sounds too imprecise. But the scientific support for this scenario is undeniable, involving principles of physics as much as chemistry. It may sound weird to hear biochemists talking about semi-conduction, electrical amplification and transduction, but that is the new frontier, and the implications of this research for clinical medicine are astounding.

It has been demonstrated that cells possess individual and cooperative resonant patterns that change with age and metabolic efficiency. After thirteen years of painstaking work and more than 12,000 case histories, Dr. Lorenzen has been able to show that these resonant patterns can be enhanced, producing beneficial effects on tissue and organ homeostasis. Here is the story in brief.

Early Work with Clustered Water Solutions

Franks and coworkers performed statistical and mechanical analysis of water and referred to metabolically active water as a <simultaneous organization of molecular states> (7).

Dr. Martin Armbruster of the Physics University in Freiburg showed that negatively charged water clusters were extremely common in human physiology, being composed of eight or more negatively charged water molecules (8). At the McLennon Physics Research Laboratory, University of Toronto, Dr. L.M. Banic found at least 49 unique molecular constructions of water molecules surrounding SO₂, CO₂ and charged ions (9). Similar complex structures have been described by Brodskaga (10), Curtiss (11), Egelstaff (12), Fowler (13) and Lee (14).

Inquiry into the role of organized water in cell systems expanded rapidly. The action of trypsin was finally explained. Remember that trypsinogen is produced by the pancreas, acted upon by enterokinase, and converted to active trypsin in the small intestine. The trypsin activates other proteolytic enzymes (chymotrypsinogen to chymotrypsin, and procarboxypeptidase to carboxypeptidase). Much of this activity could not be explained by the mechanics of simple enzymes. Instead, it appears to be signal transduction through clustered water. Structural biochemists have learned that the trypsin molecule contains 300 water sites, most of the clustered into hydrogen bonded networks, and arranged in spheres like layers of an onion. The authors of one recent study observed that:

"When the effects on surface accessibility by neighboring molecules in the crystal lattice are taken into consideration, only about 29% of the trypsin surface does not interface ordered water. About 25% of the ordered water is found in the second hydration sphere. In many instances these waters bridge larger clusters of primary layer waters. It is apparent that, in certain regions of the crystal, the organization of ordered water reflects the characteristics of the crystal environment more than those of trypsin's surface alone (15)."

New data is shattering our notions of cell structure, illustrating a "microheterogeneity" of cytoplasmic space, including a structural organization of proteins and organized water that may extend through literally thousands of cells. One group of researchers developing a new model of cellular respiration observed: "All the numerous data show convincingly that cellular metabolism cannot be understood if cell interior is considered as a homogeneous solution, and it is necessary to use the theories of organized metabolic

systems and substrate-product channelling in multienzyme systems to understand metabolic regulation of respiration (16).

Biochemists, in fact, are finding that cluster formations abound in a variety of tissues, and are using the term 'metabolon' to refer to a metabolically active cluster composed of enzymes and organized water (17). Indeed, Beekmans and co-workers have stated that "large amounts of water are believed to be organized in layers at the surface of intracellular structural proteins and membranes (18).

The plot thickens

In 1992, research was presented to elucidate the role that organized or clustered water plays in the aging process. Japanese investigators using magnetic resonance imaging found that aging results not only in dehydration, but that the water that remains in the tissues undergoes significant structural changes (10). The predominant morphological change is an increase in biowater bound to biological macromolecules and a concomitant decrease in "free" clusters. The dynamic activities of biowater, such as cell communication, molecular movements, nutrient delivery, detox and diffusion all decline with age.

Until recently, it was assumed that this decline in metabolic efficiency was simply an inevitable result of aging. But Lee Lorenzen challenged that assumption by producing clustered water and stabilizing it so that it can be consumed. The discovery was an accident; the result of cold temperature sterilization research in which liquids were exposed to powerful magnetic pulses. Lorenzen found that this treatment produced exposed rings and ultimately clusters. Most important, he was able to alter the cluster formations to reproducible units and stabilize them with ceramic technology.

Through careful experimentation, Lorenzen has produced clusters that closely resemble the ordered water that is metabolically active in human systems.

These clusters can be seen under 20,000 X magnification, and they have been stabilized for up to two years. Thus we can now increase the amount of clustered water in our body. But the story does not end here.

It has been found that water clusters vibrate at specific resonant frequencies, and these frequencies can help restore homeostasis to cell structures in the body through signal transduction (20).

Transduction is the process by which one form of energy is converted to another. We all experience this daily in the operation of our senses. Our eyes transduce or convert light energy into electronic signals which are sensed and recorded in the back of the brain. Our ears are low-frequency sound transducers. Smell receptors are chemical transducers.

When clustered water is consumed, high frequency information is transmitted to proteins in the mouth, esophagus and gastrointestinal tract. These proteins amplify the signal and send it in a cascading wave to other connected cells.

This wave of information is carried throughout the body like a "wake-up call" to restore normal function.

As a health-care modality, this represents a remarkable opportunity to stimulate selfhealing. Dr. Franco Bistolfi has described these dynamics in what he terms the Bioelectronic (or bioconductive) Connectional System of BCS (21). The components of this system include the cell's protein cytoskeleton and extracellular proteins such as collagen fibers and keratin filaments.

Together with ordered water, Bistolfi proposes that these structures "are the morphological expressions of a large and unitary cooperative system for coherent communications among cells, by means of piezoelectric interactions and photon/phonon transduction of electromagnetic signals, of both endogenous and exogenous origin (22).

Given the extremely important role played by inter and intracellular water, some have even suggested that the increased morbidity and mortality associated with obesity may in part stem from this factor. Total body water is related primarily to the fat content and age of the body. An obese man will have a water content approximately 45% while a lean man weighting the same, will have a water content of 70% or more.

The water content of an 'average' 45 year old man is 63%, but by age 70, this decreases to approximately 47% (23). Clearly, the ability to restore optimum levels of ordered water to this system will have profound effects on the entire body. But there's even more.

The fundamentals of cellular resonance

Resonance is a phenomena that occurs throughout nature. At the atomic level, we know that electrons whirl about the nucleus in precise energetically defined orbits. In order to move an electron from a lower to a higher orbit, a quantum of energy with very specific frequency characteristics is required.

In fact, an electron will only accept energy of the appropriate frequency, and if the electron falls to a lower orbit, it will release energy of that very same frequency. This specific quantum of energy is known as the resonant frequency.

The phenomena of resonance is the principle behind MRI scanning. Atoms and molecules have individual resonant frequencies that will only be excited by energies of precise vibratory characteristics. Mamerman, in fact, has shown that the absorption spectra for DNA is 42 octaves above the C tone (C = 256 Hz) (24). It is well accepted that the wavelengths maximally absorbed by cell systems are equivalent to those spectra emitted when the substance is excited.

With the correct chemical and or electromagnetic stimulation, healthy tissue systems will respond with predictable resonant emission frequencies.

Medical researchers, most notably in Germany and Japan, are now experimenting with therapeutic MRI devices. This represents a new paradigm in preventive health care; the normalization of subtle but now well-defined resonant frequencies in cell systems. And while it may be difficult to accept, (the obvious description being "fine-tuning") this reality is nevertheless upon us.

MRI technology has revealed that aberrant enzymatic or metabolic activity will affect the primary tissue resonant frequency (evidenced by changes in T1 and T2 relaxation times) and create an emission phase shift phenomenon. Current models of disease management initiate treatment only after the development of symptoms. But those symptoms are the results of gross biochemical imbalance induced by many factors. In chronic degenerative disease, cellular imbalance is usually asymptomatic until the disease has reached an advanced stage of development.

Preceding this stage, disruptions in cell water multilayers will have already produced aberrant coherent information transfer that can be measured. Using a device known as a Magnetic Resonance Spectral Analyser (MRA) and in cooperation with pathologist Hoang Van Duc at the University of Southern California, prepathological conditions have been predicted, detected and later confirmed based upon aberrant shifts in tissue resonance. Even more exciting, of course, is the possibility of correcting those aberrant frequencies using non-invasive, safe and inexpensive means.

Lorenzen's work with clustered water solutions with precise dimensions and resonant frequencies is the crest of that wave. We know now that structured water within the cell acts as a transducer of chemical and bioelectric energy (25). The resonant frequency produced by the transduction organizes nucleic acids and proteins, providing a unified system for cell repair and replication. And while it is well understood that this unified system breaks down with age, Dr.Lorenzen was among the first to assert that the resulting decrease in metabolic efficiency is both an effect and a cause of the aging process. Recent work by Haussinger and co-workers shows that minute changes in cell hydration procedure dramatic alterations in cellular metabolism and gene expression (26). Lorenzen has shown that metabolic efficiency can be enhanced by restoring tissue levels of clustered water, and furthermore, that this water can impart beneficial effects throughout the body via signal transduction (27) (28). His patent-pending Nanocluster-Template Induction Process. has resulted in production of a number of solutions with clinically proven therapeutic value.

Many of these solutions have been used in Japan for nearly a decade, with more than 12,000 case histories recorded. They have been administrated to in-patients at the Kyowa Hospital in Kobe, Japan with the following results reported by Dr.H.Hayashi:

1. Declines in blood sugar levels in diabetics patients
2. Improvements in peripheral circulation in diabetic gangrene
3. Declines in uric acid levels in patients with gout
4. Improvements in liver function in hepatic disorders
5. Improved healing of gastroduodenal ulcers and prevention of reoccurrence
6. Improvement in hypertension and hypotension
7. Improvements in asthma, urticaria, rhinitis, and atopic dermatitis
8. Improvement in post gastrectomy diarrhea
9. Improvement in postoperative bowel paralysis
10. Improvements in serum bilirubin levels in newborn infants.

Aqua Resonance AM, Aqua Resonance PM and Aqualogics Eye Lotion are now available in U.S.

These solutions are produced in licensed pharmaceutical laboratories under quality control conditions that meet or exceed all FDA and GMP guidelines. Valuable clinical experience has been gathered by a number of American physicians including Bruce O'Dell, M.D, Kenneth J.Frank, M.D., F.Pearl McBroom, M.D., Gene Denk, M.D., Gerald H.Ross, M.D., and Chunhye Kim Lee, Ph.D. While an extensive list of therapeutic benefits could be made, there are many who will discount any evidence other than doubled blind placebo-

controlled studies. I would like to suggest that while we are waiting for this level of research, action can and should be taken based upon the compelling data that we now have. After all, a year long assessment by the Office of Technology Assessment has found that only 10-20% of all procedures used in medical practice have been shown to be of benefit by controlled clinical trials (29).

The primary consideration for most of us is safety, and the oral administration of 100% pure triple distilled water is highly unlikely to cause harm.

The potential benefits, on the other hand, are remarkably diverse. If you would like to speak with one of the above physicians, I invite to contact Dr. Kenneth Frank at (805) 730-7420. "The greatest impediment to scientific innovation," wrote Harvard paleontologist Stephen Jay Gould, "is usually a conceptual lock, not a factual lack".

SCIENTIFIC REFERENCES:

The first reference that I would like to provide is the work of Dr Lee Lorenzen. BTW, Dr Lorenzen's wife suffers from CFS and FMS and this has been, I think, a great motivation for him in his researches.

Dr. Lee Lorenzen is the inventor and developer of a variety of nutritional products created with resonant cluster technology. He is the discoverer of the cluster template induction process.

Dr. Lorenzen has a Ph.D. in nutritional biochemistry and is licensed in clinical nutrition with the American Licensing Board of Nutrition. In February 1991, he became a founding member and Vice Chairman of the Japanese American Resonance Research Society, Tokyo, Japan.

Dr. Lorenzen is a member of the German American Society for the Advancement of Biological and Oxygen Therapies, Bad Füssing, Germany.

He has written and narrated twelve 30-minute videos on nutrition and prevention for the general public and has lectured extensively on the life sciences in 42 states and 25 countries. He is a sought-after speaker on stage, video and television.

Dr. Lorenzen has published articles on resonant field theory and the Russian culture in Proceedings of the Western Pharmacology Society, Life Sciences (London), Food Technology Japan, Up-to-Date Food Processing, and La Vie Japan.

Dr. Lorenzen's work is widely known in Asia and he is widely recognized in Europe and around the world for his work in cluster resonant water technology.

He was recently honored at the University of Paris and also the University of Oslo, Norway. In Norway, he was awarded an Honorary Doctorate Degree in Medicine for developing alternative therapies in the healing arts.

Dr. Lorenzen received his M.A. in biology from California State University, Fullerton and his Doctorate in nutritional biochemistry at the Metropolitan Collegiate Institute, London, England.

Articles written by Dr. Lorenzen include:

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Lorenzen, L. (1989). "Lacto-Bio Culture: antiviral activity in Epstein-Barr Syndrome." La Vie Japan v.9, September 1989.

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It has been found that water clusters vibrate at specific resonant frequencies and these frequencies can help restore homeostasis to cell structures in the body through signal transduction. Transduction is the process by which one form of energy is converted to another. We all experience this daily in the operation of our senses. Our eyes transduce or convert light energy into electronic signals, which are sensed and recorded in the back of the brain. Our ears are low-frequency sound transducers. Smell receptors are chemical transducers. When clustered water is consumed, high frequency information is transmitted to proteins in the mouth, esophagus and gastrointestinal tract. These proteins amplify the signal and send it in a cascading wave to other connected cells. This wave of information is carried throughout the body like a "wake-up call" to restore normal function.

As a healthcare modality, this represents a remarkable opportunity to stimulate self-healing. Dr. Franco Bistolfi has described these dynamics in what he terms the Bioelectronic (or bioconductive) Connectional System or BCS. The components of this system include the cell's protein cytoskeleton and extra cellular proteins such as collagen fibers and keratin filaments. Together with ordered water, Bistolfi proposes that these structures "are the morphological expressions of a large and unitary cooperative system for coherent communication among cells, by means of piezoelectric interactions and photon/phonon transduction of electromagnetic signals of both endogenous and exogenous origin.

Given the extremely important role played by inter and intracellular water, some have even suggested that the increased morbidity and mortality associated with obesity may in part stem from this factor. Total body water is related primarily to the fat content and age of the body.

An obese man will have a water content of approximately 45% while a lean man weighing the same, will have a water content of 70% or more. The water content of an "average" 45-year-old man is 63%, but by age 70, this decreases to approximately 47%. Clearly, the ability to restore optimum levels of ordered water to this system would have profound effects on the entire body. But there is more.

The fundamentals of cellular resonance

Resonance is a phenomenon that occurs throughout nature. At the atomic level, we know that electrons whirl about the nucleus in precise energetically defined orbits. In order to move an electron from a lower to a higher orbit, a quantum of energy with very specific frequency characteristics is required. In fact, an electron will only accept energy of the appropriate frequency, and if the electron falls to a lower orbit, it will release energy of that very same frequency. This specific quantum of energy is known as the resonant frequency. The phenomenon of resonance is the principle behind MRI scanning.

Atoms and molecules have individual resonant frequencies that will only be excited by energies of precise vibratory characteristics. Hamerman, in fact has shown that the absorption spectra for DNA is 42 octaves above the C tone (C=256 Hz). It is well accepted that the wavelengths maximally absorbed by cell systems are equivalent to those spectra emitted when the substance is excited. With the correct chemical and or electromagnetic stimulation, healthy tissue systems will respond with predictable resonant emission frequencies. Medical researchers, most notably in Germany and Japan, are now experimenting with therapeutic MRI devices. This represents a new paradigm in preventive health care; the normalization of subtle but now well defined resonant frequencies in cell systems. And while it may be difficult to accept, (the obvious description being "fine-tuning") this reality is nevertheless upon us.

MRI technology has revealed that aberrant enzymatic or metabolic activity will effect the primary tissue resonant frequency (evidenced by changes in T1 and T2 relaxation times) and create an emission phase

shift phenomenon. Current models of disease management initiate treatment only after the development of symptoms. But those symptoms are the result of gross biochemical imbalance induced by many factors. In chronic degenerative disease, cellular imbalance is usually asymptomatic until the disease has reached an advanced stage of development. Preceding this stage, disruptions in cell water multilayers will have already produced aberrant coherent information transfer that can be measured.

Using a device known as a Magnetic Resonance Spectral Analyzer (MRA) and in cooperation with pathologist Hoang Van Duc at the University of Southern California, prepathological conditions have been predicted, detected and later confirmed based upon aberrant shifts in tissue resonance. Even more exciting, of course, is the possibility of correcting those aberrant frequencies using noninvasive, safe and inexpensive means.

Lorenzen's work with clustered water solutions with precise dimensions and resonant frequencies is the crest of that wave. We now know that structured water within the cells acts as a transducer of chemical and bioelectric energy. The resonant frequency produced by this transduction organizes nucleic acids and proteins, providing a unified system for cell repair and replication. And while it is well understood that this system breaks down with age, Dr. Lorenzen was among the first to assert that the resulting decrease in metabolic efficiency is both an effect and a cause of the aging process.

Recent works by Haussinger and coworkers show that minute changes in cell hydration produce dramatic alterations in cellular metabolism and gene expressions. Lorenzen has shown that metabolic efficiency can be enhanced by restoring tissue levels of clustered water, and furthermore, that this water can impart beneficial effects throughout the body via signal transduction. His patent-pending Nanocluster-Template Induction Process has resulted in the production of a number of solutions with clinically proven therapeutic value.

Many of these solutions have been used in Japan for nearly a decade, with more than 12,000 case histories recorded. They have been administered to in-patients at the Kyowa Hospital in Kobe, Japan with the following results reported by Dr. H. Hayashi:

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Professional Formula Clustered Water is the trade name given to a clustered water solution developed by Dr. Lee Lorenzen. To realize the value and potential of these solutions, it is useful to review some organic chemistry so that we understand the framework upon which this breakthrough research has been conducted. The water molecule is formed by the covalent bonding of two hydrogen atoms to one oxygen atom.

To complete its outer shell, oxygen needs two electrons, and it obtains these by sharing an electron with each of two hydrogen atoms. These bond to the oxygen atom to form a triangular structure, and this shape is important because it forms the basis for many of the solutions and compounds that support life.

Now, these covalent bonds are polar bonds, that is the shared electrons are attracted more strongly to (or "spend more time with") the oxygen nucleus than to the hydrogen nuclei.

This creates a small negative charge near the two hydrogen nuclei. Clusters form because the positive charge of the hydrogen atoms of one water molecule is attracted to the negative charge of the oxygen of another water molecule. It is well known that such hydrogen bonds play important roles in many biological compounds, and are essential for maintaining the shape of large molecules such as proteins and nucleic acids. As we will explain, scientists are now discovering something rather remarkable and revolutionary, and that is a molecule's shape is as important to its function as its composition.

Cluster technology has opened an entirely new arena of materials science. Iron, for example, adsorbs hydrogen 1,000 times as fast in ten-atom clusters as it does in 17-atom clusters. Electronic bonding patterns, determined by cluster shape, alter the behavior and properties of solids, liquids and even gasses.

When electrons are shared by the whole cluster in a de-localized pattern, negative charge is evenly distributed and the cluster may take on certain aspects of solid metal, such as conductivity. When the electrons are all tightly bound to atoms, the clusters resemble discrete molecules. The discovery that small changes in cluster size can produce large differences in behavior strengthens the notion that clusters represent a distinct phase of matter.

If this is all new to you, you're not alone. The emerging science of structural biology is shaking up what most of us understood were immutable laws. You can, for example, take a protein from the body that has a well-

documented function. Replace many of the amino acids, but maintain the same exact structure and that protein will function in the same way. We learned how water transports protein through the body, but are now finding out that the movement of water is just as precise. In fact, cell membranes throughout the body utilize special proteins to transport water, and intercellular water turns out to be highly organized. Instead of the amorphous solute that we all saw in Bio 101, water appears to exist within the cell in a complex multilayered structure. Molecular biologist Gilbert Ling, using X-ray diffraction and Neutron scattering techniques, has shown that cytoplasmic water is remarkably different from a simple dilute aqueous solution. Rorschach at Rice University and Clegg at the University of California have both confirmed this quasi elastic neutron scattering (QENS). Srivastava and Bernhard have shattered the idea that biochemical reactions take place in the cell by free diffusion. Their investigation of the glycolytic pathway illustrates that metabolic intermediates are virtually all enzyme-bound and are "channeled" between enzymes through structured water.

Now, one of water's most important functions is to maintain and influence protein structure. Martin Rodbell won a Nobel Prize for his work with protein folding and G peptide specifically for elucidating the role that these proteins play in cell communication or signal transduction. In and through this protein, there is a matrix of clustered or organized water. In fact, Dr. Julia Goodfellow at the Department of Crystallography in Birbeck College, London, has shown that it is the interaction of structured water with biological macromolecules that causes the protein folding. And so begins our discussion of biophysics.

Attending the testing of our Atma molecule (L to R) Andrew Maddock, Dr. Lee Lorenzen, Robert Lloy, Joey Lindmeier and Stephen Bizal

Water water everywhere

The water within your body, known as biowater, is intimately involved in cell physiology; not just in the movement of nutrients and the removal of toxins and waste. It is becoming clear that water plays an active role in cell communications and the literally thousands of metabolic functions.

Some of you may remember taking graduate courses in physiology when cell communication was limited to a discussion of receptor sites, hormones, and the intricate but fairly well understood workings of the brain and nervous system. What no one seemed to want to tackle was the enormous question of how the rest of the body communicated. Obviously, trillions of cells contribute to the miraculous organism called man, and these cells, contrary to the diagrams in the textbooks, were not isolated little bags of cytoplasm stacked together into human form. There was inherent in this study, an enormous missing puzzle piece having to do with the interactions of cells apart from the mechanical and neurologic communication systems.

The transmission of information from DNA to RNA is a good case in point.

We had beautifully stained microscopic views of mitosis. It was easy to understand the breaking of nucleotide bonds and the replication of the double helix. But cells perform thousands of other functions, which are controlled by DNA. Maybe, you were perplexed by drawings of DNA fragments "breaking off" and attaching to RNA. You may have challenged your professor that this was impossible and he may have agreed saying "It's just the way they choose to represent a process that is not understood."

Well, we now know that the flow of information from DNA is constant and that the schematic textbook representations were utter nonsense. We now know that in the core of that double helix is a column of water clusters, and that information is transmitted at lighting speed via resonant frequencies. That's right, vibrations.

Right now you may be gnashing your teeth. You hate that right? It sounds too imprecise. But the scientific support for this scenario is undeniable; involving principles of physics as much as chemistry. It may sound weird to hear biochemists talking about semi-conduction, electrical amplification and transduction, but that is the new frontier, and the implications of this research for clinical medicine are astounding.

It has been demonstrated that cells possess individual and cooperative resonant patterns that change with age and metabolic efficiency.

After fourteen years of painstaking work and more than 120,000 case histories, Dr. Lorenzen has been able to show that these resonant patterns can be enhanced, producing beneficial effects on tissue and organ homeostasis. Here is the story in brief.

Early Work with Clustered Water Solutions

Franks and coworkers performed statistical and mechanical analysis of water and referred to metabolically active water as a simultaneous organization of molecular states. Dr. Martin Armbruster of the Physics University in Freiburg showed that negatively charged water clusters were extremely common in human physiology, being composed of eight or more negatively charged water molecules.

At the McLennan Physics Research Laboratory, University of Toronto, Dr. L.M. Banic found at least 49 unique molecular constructions of water molecules surrounding SO₂, CO₂ and charged ions. Brodskaga, Curtiss, Egelstaff, Fowler and Lee have described similar complex structures.

Inquiry into the role of organized water in cell systems expanded rapidly. The action of trypsin was finally explained. Remember that trypsinogen is produced by the pancreas, acted upon by enterokinase and

converted to active trypsin in the small intestine. The trypsin then activates other proteolytic enzymes (chymotrypsinogen to Chymotrypsin, and procarboxypeptidase to carboxypeptidase).

Much of this activity could not be explained by the mechanics of simple enzymes. Instead, it appears to be signal transduction through clustered water. Structural biochemists have learned that the trypsin molecule contains 300 water sites, most of them clustered into hydrogen bonded networks and arranged in spheres like the layers of an onion. The authors of one recent study observed that:

When the effects on surface accessibility by neighboring molecules in the lattice are taken into consideration, only about 29% of the trypsin surface does not interface ordered water.

About 25% of the ordered water are found in the second hydration sphere. In many instances these waters bridge larger clusters of primary Layer waters. It is apparent that in certain regions of the crystal, the organization of ordered water reflects the characteristics of the crystal environment more than those of trypsin's surface alone.

New data is shattering our notions of cell structure, illustrating a "microheterogeneity" of cytoplasmic space, including a structural organization of proteins and organized water that may extend through literally thousands of cells. One group of researchers developing a new model of cellular respiration observed: All these numerous data show convincingly that cellular metabolism cannot be understood if cell interior is considered as a homogeneous solution and it is necessary to use the theories of organized metabolic systems and substrate-product channeling in multienzyme systems to understand metabolic regulation of respiration.

Biochemists, in fact, are finding that cluster formations abound in a variety of tissues and are using the term metabolon to refer to a metabolically active cluster composed of enzymes and organized water. Indeed, Beekmans and coworkers have stated that large amounts of water are believed to be organized in layers at the surface of intracellular structural proteins and membranes.

The Plot Thickens

In 1992 research was presented to elucidate the role that organized or clustered water plays in the aging process. Japanese investigators using magnetic resonance imaging found that aging results not only in dehydration, but that the water that remains in the tissues undergoes significant structural changes. The predominate morphological change is an increase in biowater bound to biological macromolecules and a concomitant decrease in "free" clusters. The dynamic activities of biowater, such as cell communication, molecular movements, nutrient delivery, detox and diffusion all decline with age.

Until recently, it was assumed that this decline in metabolic efficiency was simply an inevitable result of aging. But, Dr. Lee Lorenzen challenged that assumption by producing clustered water and stabilizing it so that it could be consumed. The discovery was an accident; the result of cold temperature sterilization research in which liquids were exposed to powerful magnetic pulses.

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Improvements in serum bilirubin levels in newborn infant

From the article "About Clustered Water"

by Gerry Wolke

"The cell is immortal. It is merely the fluid in which it floats that degenerates. Renew this fluid at regular intervals, give the cells what they require for nutrition, and as far as we know, the pulsation of life can go on forever."

-- Dr. Alexis Carrell, Nobel prize winner

"Since the molecular structure of water is the essence of all life, the man who can control that structure in cellular systems will change the world."

-- Dr. Albert Szent-Gyorgy, Nobel prize winner

What is it?

Patented clustered water, H₁₂O₆, is an invention of biochemist Lee H. Lorenzen, PhD. [read more](#)

What does it do?

All water is not created equal, not in your household, not in nature, and not in your body. Scientists are only now beginning to realize that water can be structured and that its structure determines what it does in your body. It isn't enough that you drink water. It also has to get into your cells from the blood stream. Once in the cells it has to perform many functions. Not all water is ideally suited for this and the rare water that is can almost perform miracles.

The water at Lourdes and other healing springs around the world have something in common: it is clustered and that is thought to be responsible for its healing properties. Healing waters such as Lourdes' resemble the purest water from beneath the polar ice cap, but they lose their structure within about 20 minutes if bottled. Clustered water has been designed not to lose its structure over time.

When we are born we are about 90% water and that water is largely clustered. Over time if enough clustered water is not consumed we slowly dehydrate and elderly people may be as little as 50% water. Many of the symptoms of age are thought to be due to dehydration alone. For example, a 2% loss of cellular water may decrease our energy levels by 20%. Worse, as we grow older our thirst sensation becomes progressively lost or gets confused with hunger and we lack the impulse to drink enough water.

What we do drink such as soft drinks, coffee, tea and alcoholic beverages all have a diuretic effect and dehydrate us even more. Dr. Lorenzen says that aging is a function of dehydration. Aging does not cause the lack of clusters. The lack of clusters causes aging. Without water clusters the internal environment of the cell cannot function properly and it dies prematurely. When enough cells die, disease sets in and eventually, death.

Initially, the majority of water is cellular in the body but if water cannot penetrate the cell well it becomes dehydrated and most water becomes extracellular. In Germany, researchers predict a person's potential lifespan by measuring the water content of their cells.

A loss of cellular water means that nutrients are not carried into the cell and toxins are not flushed out. The cell starves and suffocates in its own garbage. Without enough water in the cell it becomes catabolic, i.e. it breaks itself down. A well hydrated cell is anabolic. It grows and multiplies properly.

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Clustered water performs several functions:

1. Cellular hydration. Water in the body is either clustered or bound to proteins or other substances. Bound water cannot get into cells. Most of the water or other liquids we drink do not enter cells very well. The six sided rings of clustered water fit into cellular and subcellular membranes easily allowing water to flow into and out of cells.
2. Transportation of nutrients. Research shows that clustered water potentiates the effect of nutrients by a factor of six times. Much of the supplements and nutrients we consume never make it into the cell because bound water does not enter the cell. Clustered water was designed by nature to allow nutrients to "hitch a ride" into the cell by attaching themselves to the water rings.
3. Removal of toxins and waste. Detoxification is one of the most important paths to good health and long life. Again, it doesn't matter what detoxification methods you employ if the toxins cannot get out of the cell. Clustered water flushes toxins out of cells allowing them to maintain their proper functions without toxic interference. Clustered water is itself broken down by pollutants and free radicals so it is lost over time, a good reason to replenish it.
4. Clustered water influences protein structure. Clustered water surrounds proteins and keeps the proteins in the proper shape so they can function properly. Aging causes proteins to break down but clustered water returns proteins to their proper shape and function.

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5. Clustered water converts proteins into "information wires." A Bioelectronic Connectional System (BCS) is a system of proteins that connects cells together so they can share information. The clustered water that

surrounds proteins acts like a radio and emits and receives high frequency signals that co-ordinate cells all over the body. It is what keeps the cells of the body orderly. Without clustered water, cells cannot co-ordinate their activity with others. The signal is lost.

6. Clustered water is critical to DNA expression. Like proteins, the spiral of DNA, our body's genetic blueprint, has a column of clustered water at its core. The vibration of the clustered water vibrates the DNA and allows it to communicate its plan to other cellular components. Without clustered water it cannot do so and the cell malfunctions.

7. Clustered water corrects bad cell resonance. Every cell vibrates to a particular pattern. When it is diseased, it emits an abnormal signal which can be detected by Magnetic Resonance Analysis. The resonant energy of clustered water can counter or invert abnormal cell signals.

8. Clustered water raises the energy of the cell. The resonant energy in clustered water charges up a cell much like a capacitor or battery. Cell capacitance is an indicator of cellular health.

The therapeutic effects of clustered water have been realized in Japan where there are some 210,000 case studies, nine books published on the subject, and over 60 government sponsored clinics using clustered water as a healing modality.

Many kinds of degenerative diseases have responded to clustered water. Unfortunately, the company will not release the studies to anyone other than a health practitioner. One study in animals, though, is worth noting. Wounds which normally took 28 days to heal took only 10 days when clustered water was administered to them.

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Here is additional information from the manufacturer:

"Clustered Water, like the holy or healing waters uniquely found and studied in places like Lourdes, France, are composed of beautiful, six-sided (hexagonal), snowflake shaped, clusters containing hundreds of thousands of crystal water molecules. The Atma Molecule under 20,000 magnification displays the perfect six-sided (hexagonal) geometry necessary for the reception and transmission of energy.

Atma Molecule

In the scientific community this type of molecule has been called a Star Seed Molecule. It is considered perfect, complete and self replicating. This is the first Star Seed molecule to be discovered.

These crystal clusters of water, form the inner core and structural support for double helix DNA, the genetic blueprint of life. In recent years, science has determined that more than 90 percent of DNA function involves electromagnetic reception and transmission.

This optimal function, underlying every aspect of health, delaying aging, and retarding virtually every disease process, almost entirely depends on the crystalline core of DNA -- Clustered Water.

Clustered water is also great for animals.

Summary of the Work of Dr. Lee Lorenzen

Background

Professional Formula Clustered Water is the trade name given to a clustered water solution developed by Dr. Lee Lorenzen. To realize the value and potential of Clustered Water, it is useful to review some organic chemistry so that we understand the framework upon which this breakthrough research has been conducted. The water molecule is formed by the covalent bonding of two hydrogen atoms to one oxygen atom. To complete its outer shell, oxygen needs two electrons, and it obtains these by sharing an electron with each of two hydrogen atoms.

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Early Work with Clustered Water

Franks and coworkers performed statistical and mechanical analysis of water and referred to metabolically active water as a simultaneous organization of molecular states. Dr. Martin Armbruster of the Physics University in Freiburg showed that negatively charged water clusters were extremely common in human physiology, being composed of eight or more negatively charged water molecules.

At the McLennan Physics Research Laboratory, University of Toronto, Dr. L.M. Banic found at least 49 unique molecular constructions of water molecules surrounding SO₂, CO₂ and charged ions. Brodskaga, Curtiss, Egelstaff, Fowler and Lee have described similar complex structures.

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Inquiry into the role of organized water in cell systems expanded rapidly. The action of trypsin was finally explained. Remember that trypsinogen is produced by the pancreas, acted upon by enterokinase and converted to active trypsin in the small intestine. The trypsin then activates other proteolytic enzymes (chymotrypsinogen to Chymotrypsin, and procarboxypeptidase to carboxypeptidase).

Much of this activity could not be explained by the mechanics of simple enzymes. Instead, it appears to be signal transduction through clustered water. Structural biochemists have learned that the trypsin molecule contains 300 water sites, most of them clustered into hydrogen bonded networks and arranged in spheres like the layers of an onion. The authors of one recent study observed that:

When the effects on surface accessibility by neighboring molecules in the lattice are taken into consideration, only about 29% of the trypsin surface does not interface ordered water. About 25% of the ordered water are found in the second hydration sphere. In many instances these waters bridge larger clusters of primary Layer waters. It is apparent that in certain regions of the crystal, the organization of ordered water reflects the characteristics of the crystal environment more than those of trypsin's surface alone.

New data is shattering our notions of cell structure, illustrating a "microheterogeneity" of cytoplasmic space, including a structural organization of proteins and organized water that may extend through literally thousands of cells.

One group of researchers developing a new model of cellular respiration observed:

All these numerous data show convincingly that cellular metabolism cannot be understood if cell interior is considered as a homogeneous solution and it is necessary to use the theories of organized metabolic systems and substrate-product channeling in multienzyme systems to understand metabolic regulation of respiration.

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Biochemists, in fact, are finding that cluster formations abound in a variety of tissues and are using the term metabolon to refer to a metabolically active cluster composed of enzymes and organized water. Indeed, Beekmans and coworkers have stated that large amounts of water are believed to be organized in layers at the surface of intracellular structural proteins and membranes.

The Plot Thickens

In 1992 research was presented to elucidate the role that organized or clustered water plays in the aging process. Japanese investigators using magnetic resonance imaging found that aging results not only in dehydration, but that the water that remains in the tissues undergoes significant structural changes. The predominate morphological change is an increase in biowater bound to biological macromolecules and a concomitant decrease in "free" clusters.

The dynamic activities of biowater, such as cell communication, molecular movements, nutrient delivery, detox and diffusion all decline with age.

Until recently, it was assumed that this decline in metabolic efficiency was simply an inevitable result of aging. But, Dr. Lee Lorenzen challenged that assumption by producing clustered water and stabilizing it so that it could be consumed. The discovery was an accident; the result of cold temperature sterilization research in which liquids were exposed to powerful magnetic pulses. Lorenzen found that this treatment produced ordered rings and ultimately clusters. Most important, he was able to alter the cluster formations to reproducible units and stabilized them with ceramic technology.

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Through powerful experimentation, Lorenzen has produced clusters that closely resemble the ordered water that is metabolically active in human systems. These clusters can be seen under 20,000 X magnification, and they have been stabilized for up to two years. Thus we can now increase the amount of clustered water in our body. But the story does not end here.

It has been found that water clusters vibrate at specific resonant frequencies and these frequencies can help restore homeostasis to cell structures in the body through signal transduction. Transduction is the process by which one form of energy is converted to another. We all experience this daily in the operation of our senses. Our eyes transduce or convert light energy into electronic signals, which are sensed and recorded in the back of the brain. Our ears are low-frequency sound transducers. Smell receptors are chemical transducers. When clustered water is consumed, high frequency information is transmitted to proteins in the mouth, esophagus and gastrointestinal tract. These proteins amplify the signal and send it in a cascading wave to other connected cells. This wave of information is carried throughout the body like a "wake-up call" to restore normal function.

As a healthcare modality, this represents a remarkable opportunity to stimulate self-healing. Dr. Franco Bistolfi has described these dynamics in what he terms the Bioelectronic (or bioconductive) Connectional System or BCS. The components of this system include the cell's protein cytoskeleton and extra cellular proteins such as collagen fibers and keratin filaments.

Together with ordered water, Bistolfi proposes that these structures "are the morphological expressions of a large and unitary cooperative system for coherent communication among cells, by means of piezoelectric

interactions and photon/phonon transduction of electromagnetic signals of both endogenous and exogenous origin.

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Given the extremely important role played by inter and intracellular water, some have even suggested that the increased morbidity and mortality associated with obesity may in part stem from this factor.

Total body water is related primarily to the fat content and age of the body. An obese man will have a water content of approximately 45% while a lean man weighing the same, will have a water content of 70% or more. The water content of an "average" 45-year-old man is 63%, but by age 70, this decreases to approximately 47%. Clearly, the ability to restore optimum levels of ordered water to this system would have profound effects on the entire body. But there is more.

The fundamentals of cellular resonance

Resonance is a phenomenon that occurs throughout nature. At the atomic level, we know that electrons whirl about the nucleus in precise energetically defined orbits. In order to move an electron from a lower to a higher orbit, a quantum of energy with very specific frequency characteristics is required. In fact, an electron will only accept energy of the appropriate frequency, and if the electron falls to a lower orbit, it will release energy of that very same frequency. This specific quantum of energy is known as the resonant frequency.

The phenomenon of resonance is the principle behind MRI scanning.

Atoms and molecules have individual resonant frequencies that will only be excited by energies of precise vibratory characteristics. Hamerman, in fact has shown that the absorption spectra for DNA is 42 octaves above the C tone (C=256 Hz). It is well accepted that the wavelengths maximally absorbed by cell systems are equivalent to those spectra emitted when the substance is excited. With the correct chemical and or electromagnetic stimulation, healthy tissue systems will respond with predictable resonant emission frequencies.

Medical researchers, most notably in Germany and Japan, are now experimenting with therapeutic MRI devices. This represents a new paradigm in preventive health care; the normalization of subtle but now well defined resonant frequencies in cell systems. And while it may be difficult to accept, (the obvious description being "fine-tuning") this reality is nevertheless upon us.

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MRI technology has revealed that aberrant enzymatic or metabolic activity will effect the primary tissue resonant frequency (evidenced by changes in T1 and T2 relaxation times) and create an emission phase shift phenomenon. Current models of disease management initiate treatment only after the development of symptoms. But those symptoms are the result of gross biochemical imbalance induced by many factors. In chronic degenerative disease, cellular imbalance is usually asymptomatic until the disease has reached an advanced stage of development. Preceding this stage, disruptions in cell water multilayers will have already produced aberrant coherent information transfer that can be measured.

Using a device known as a Magnetic Resonance Spectral Analyzer (MRA) and in cooperation with pathologist Hoang Van Duc at the University of Southern California, prepathological conditions have been predicted, detected and later confirmed based upon aberrant shifts in tissue resonance. Even more exciting, of course, is the possibility of correcting those aberrant frequencies using noninvasive, safe and inexpensive means.

Lorenzen's work with clustered water solutions with precise dimensions and resonant frequencies is the crest of that wave. We now know that structured water within the cells acts as a transducer of chemical and bioelectric energy. The resonant frequency produced by this transduction organizes nucleic acids and proteins, providing a unified system for cell repair and replication. And while it is well understood that this system breaks down with age, Dr. Lorenzen was among the first to assert that the resulting decrease in metabolic efficiency is both an effect and a cause of the aging process.

Recent works by Haussinger and coworkers show that minute changes in cell hydration produce dramatic alterations in cellular metabolism and gene expressions. Lorenzen has shown that metabolic efficiency can be enhanced by restoring tissue levels of clustered water, and furthermore, that this water can impart beneficial effects throughout the body via signal transduction. His patent-pending Nanocluster-Template Induction Process has resulted in the production of a number of solutions with clinically proven therapeutic value.

Many of these solutions have been used in Japan for nearly a decade, with more than 12,000 case histories recorded. They have been administered to in-patients at the Kyowa Hospital in Kobe, Japan with the following results reported by Dr. H. Hayashi:

Declines in blood sugar levels in diabetic patients

Improvements in peripheral circulation in diabetic gangrene

Declines in uric acid levels in patients with gout

Improvements in liver function in hepatic disorders

Improved healing of gastroduodenal ulcers and prevention of reoccurrence

Improvements in hypertension and hypotension

Improvements in asthma, urticaria, rhinitis, and atopic dermatitis

Improvement in post gastrectomy diarrhea
Improvements in postoperative bowel paralysis
Improvements in serum bilirubin levels in newborn infant

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Cautions

Clustered water is non-toxic and has no side-effects. It is odorless, colorless and tasteless. Some people have experienced a temporary detoxification reaction which may include increased urination and bowel movements, slight body aches, minor headaches and lower energy.

Do not take clustered water 30 minutes before or after any type of medication.

Since it liberates energy it is not recommended that you consume it after 4 PM since it might cause insomnia.

Dose

Clustered Water™ breaks down at 115° Fahrenheit. When the product has been exposed to warm climates under 115°F, you can freeze the bottle for about 45 minutes. It will regain its effectiveness.

Dilute one oz of Clustered Water into one gallon of Distilled Water.

You must use distilled water, use water that has been stripped of memory so it will accept the new cluster memory.

Shake Well.

Let beverage sit overnight in the refrigerator before consuming.

For best results keep beverage refrigerated.

Do not use a metal, use plastic for measuring

The recommended dosage of Clustered Water is 16 ozs. or more per day

The best times to take Clustered Water are first thing in the morning and around noontime on an empty stomach.

Guideline to help determine proper dosage:

Healthy Children take 1/2 cup per day.

People with Health Problems: start by taking 4-oz. per day, move to 8-oz. per day after 7 - 14 days. Move to two 8-oz. glasses per day (if necessary after 21 - 28 days.)

Source: <http://www.naturalhealthconsult.com/Monographs/puritywater.html>