

Redox Signaling Molecules

The Electrochemical Source Code
for Anti-Aging, Rejuvenation
& Cellular Repair

Aaron Murakami, BSNH

Aaron Murakami, BSNH

Redox Signaling Molecules

The Electrochemical Source Code for
Anti-Aging, Rejuvenation & Cellular
Repair

Redox Signaling Molecules

The Electrochemical Source Code for
Anti-Aging, Rejuvenation & Cellular
Repair

by

Aaron Murakami, B.S.N.H.

Copyright © 2011 by Aaron Murakami

All rights reserved. No part of this book, *Redox Signaling Molecules, The Electrochemical Source Code for Anti-Aging, Rejuvenation & Cellular Repair*, may not be used or reproduced in any manner whatsoever without written permission, except in the case of brief quotations embodied in critical articles or reviews.

Published by [White Dragon Press](#) 2011

Disclaimer

The statements made in this book are for educational purposes only and are not meant to replace the advice of your physician or health care provider. Please consult your physician before implementing any new diet, exercise, or dietary supplement programs, especially if you have preexisting medical conditions or are taking prescription medications.

Food and Drug Administration Statement

The US Food and Drug Administration has not evaluated the statements made within this book. These statements, and the substances discussed, are not intended to diagnose, treat, cure or prevent any disease.

Book License

This E-book may not be given away or reposted without the explicit written permission from the author.

Table of Contents

Introduction	8
Chapter 1 – Redox Signaling Molecules	12
Chapter 2 – RS Redox Molecules	18
Chapter 3 – ROS Redox Molecules	27
Chapter 4 – The Redox Secret	37
Chapter 5 – Brain and Nervous System	48
Chapter 6 – Athletes Wildest Dream	51
Chapter 7 – Public Availability	56
Chapter 8 – Sharing Results	58
Aaron Murakami's Bio	62
Other Books by Aaron	63

Introduction

For the last 20 years, much of my research focused on health and healing – mostly unconventional science, modalities and methods. But it wasn't until the last fifteen years that I was blessed with the incredible honor and privilege to have known and worked with some of the pioneers in advanced energy technologies, mind empowerment, and natural healing.

Some of these people include Dr. McGee who is known as the first alternative OBGYN and is one of the original founders of orthomolecular medicine, Rodger Q. Estes who was the first non-Chinese certified Qigong master in the world (he considered me his protégé), Dr. Hole who was the first “barefoot doctor” from Princeton, Dr. Kobara who is a pathologist, researcher and has helped many people with his skills in guided imagery, John Kitkoski who mastered close to twenty-two separate sciences and mastered biochemistry so much that he knew it better than the professors. He fought the schools and this caused them to correct all the errors that he pointed out!

There are plenty of errors in the fundamental teachings of physics as well as many other fields but that is another story

altogether.

Anyway, many other friends and mentors should be on this list, but these are the ones that were the closest to home, literally, right here in Spokane, Washington.

Dr. McGee and Rodger knew Linus Pauling, Ewan Cameron and many other giants in the field of natural medicine. So having this kind of influence on my life and the osmosis from all their own experiences and knowledge they learned from the many masters before them has made quite an impact on me – definitely something to be forever grateful about!

Although my Bachelors of Science is in Natural Health, it was really my relationship with these friends and mentors that gave me the actual hands-on experience regarding the many ways that the body's own innate healing ability can be assisted.

Some of these modalities and methods include heat therapy, pulsed photons, various proprietary biochemical cocktails, qigong, quantum modalities, electro-medicine, meditation and many others.

From 2002-2006, my full time job was owner and operator of a nutrition store on the north side of Spokane, called *Top o' the Line Total Health Shoppe*. As proprietor, there was ample opportunity to explore the benefits of more

supplements than anyone could possibly remember.

On a regular basis, thousands of my cherished customers would regularly share their experience and results with all kinds of supplements and different healing modalities.

Over the last decade, one popular trend in the dietary supplement industry is the appearance of the “functional food” drinks. This book is not focused on these juices, but with what you are about to learn about them, your world is about to be rocked – big time.

These herbal or fruit drinks, such as Tahitian Noni, Mangosteen, Goji berry and others are promoted for their powerful antioxidant and anti-aging properties.

The common denominator between many of these products is that they are supposed to be the end-all-be-all of high strength antioxidants. You know the story – some fruit is discovered, they juice it and suddenly there is some big breakthrough. The reality is that you still just have a fancy fruit juice.

Antioxidants neutralize free radicals (cellular “rust”) and are the premise of the leading anti-aging theories. It is all based on electrical interactions between different substances in the body at the cellular level and even down to the molecular and even atomic

level.

What is not widely known by the public is that if the cells in your body do not have the correct balance or abundance of *Redox Signaling Molecules*, all the antioxidants in the world won't make any difference at all!

The purpose of this book is to explore the basics of *Redox Signaling Molecules* in a simple way.

Then, to sum it up, you'll be one of the first to know about one of the most significant breakthroughs in medical science quite possibly in the last 100 years!

It is very, very simple in concept but quite profound and is the closest thing to an actual FOUNTAIN OF YOUTH that we will be able to get close to, possibly in our lifetime.

Redox Signaling Molecules are the future of foundational health, regenerative youth, and natural health enhancement.

Please keep this limited free edition to yourself - if anyone you know wants a copy, please refer them to the person that gave this to you to verify the limited free edition digital version is still available – it may be withdrawn at anytime.

Sincerely,

Aaron Murakami, B.S.N.H.

1

Redox Signaling Molecules

Please study the following picture showing the *Redox Signaling Molecules*¹:

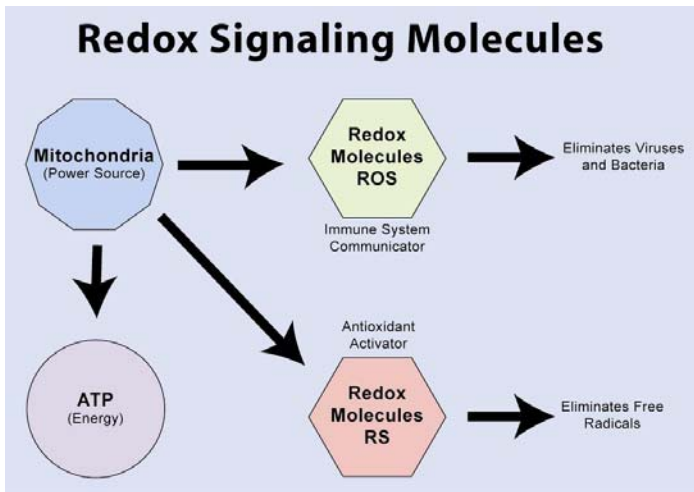


FIG 1.1

In the simplest terms, the diagram shows that two types of *Redox Signaling Molecules* are produced, as a chemical "by-product", when the mitochondria produce ATP (**adenosine**

1

triphosphate)². Unless you have a College Degree in Bio-Chemistry, that probably doesn't mean much to you. So, let me start at the beginning and explain what this means and why it is important.

Mitochondria³ are specialized structures in your cells. They live outside of the cell nucleus, but within the space defined by the cell wall. Some cells have as many as 10,000 mitochondria in them, but the average is about 200. The point is, the mitochondria are abundant and are very important for cell function.

One of the most important things mitochondria do is to produce ATP.

So what is ATP? ATP is "adenosine triphosphate". It is the main energy source that powers cellular functions in the body.

ATP is very important because, at the cellular level, whenever we do anything, we need ATP to fuel the activity. If you run, walk, sneeze, roll your eyes around, think great thoughts or twiddle your thumbs, you're using ATP as cellular fuel.

The adenosine part of ATP is made from a simple sugar (ribose)⁴ and an adenine⁵ molecule.

² <http://hyperphysics.phy-astr.gsu.edu/hbase/biology/atp.html>

³ <http://hyperphysics.phy-astr.gsu.edu/hbase/biology/mitochondria.html>

⁴ <http://www.elmhurst.edu/~chm/vchembook/543ribose.html>

That composes the engine. The fuel is one of the three phosphate⁶ molecules attached to it.

Whenever your cells use ATP for fuel, one of the phosphate groups is “burned” off and it is converted from ATP (adenosine TRI-phosphate) into ADP (adenosine DI-phosphate), which is an adenosine molecule with only two phosphate groups attached to it. This reaction also produces energy and heat that the cell can use.

So, one of the jobs for the mitochondria is to re-attach a phosphate group back onto the ADP to make ATP again. One thing athletes do to recover from exercise faster is take supplements that promote this process.

For example, when someone takes creatine monohydrate as a sports supplement, they can get longer endurance. This happens because creatine provides the body with phosphate donors and gives the mitochondria plenty of building blocks to convert ADP back into ATP easily.

Athletes could also take a d-Ribose supplement to give them more of the ribose sugar. This can also make it easier for the mitochondria to produce more ATP.

5

http://www.chem.duke.edu/~jds/cruise_chem/Exobiology/adenine.html

⁶ <http://muscle.ucsd.edu/musintro/creatine.shtml>

You have probably heard of DNA⁷ and RNA⁸. These are the building blocks of our genetic code. DNA is deoxyRIBOnucleic acid and RNA is RIBOnucleic acid. These are both molecules built around the same ribose sugar!

RNA is a nucleic acid connected to a “regular” ribose molecule, whereas DNA is a nucleic acid connected to a ribose molecule that has had an oxygen atom removed; hence the prefix (de-oxy)ribonucleic acid.

There is no doubt that the work of the mitochondria is at the very heart of cellular functions. ATP production is so important that we would not be alive without it. But every time ATP is made, the mitochondria also produce the amazing *Redox Signaling Molecules!*

So, let's look at this diagram again, because now we are ready to look at what these *Redox Signaling Molecules* are and what they do.

Please keep in mind this simple but profound fact - for many years, these molecules were thought to be nothing more than a waste product. Turns out, they are not waste – they can practically be considered the Fountain of Youth!

⁷ <http://ghr.nlm.nih.gov/handbook/basics/dna>

⁸ <http://ghr.nlm.nih.gov/glossary=rna>

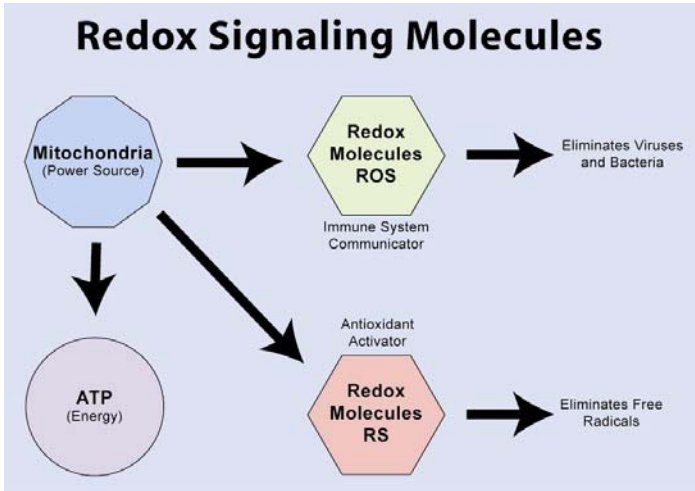


FIG 1.2

From the diagram we can see that the mitochondria produce two different kinds of *Redox Signaling Molecules*.

Some of these are RS Molecules (Reduced Species) and some are ROS Molecules (Reactive Oxygen Species). Collectively, they are called *Redox Signaling Molecules*.

So, what does RS and ROS mean? Let's look at ROS first. ROS stands for "Reactive Oxygen Species". These are molecules that can donate an OXYGEN atom to some reaction in the body. The word "Species" refers to the fact that there are a number of different types of these molecules that can donate the oxygen to promote the reaction. Typically, ROS Molecules attack viruses, bacteria and other pathogens. The

ROS molecules facilitate immune system communication.

RS Molecules perform the opposite function. RS stands for "Reduced Species". These are molecules that are required to activate antioxidants⁹ such as glutathione¹⁰, which in turn neutralize oxidation. Again, RS Molecules activate "antioxidants" and otherwise inhibit oxidation in the body where it would be harmful.

For the whole system to work right, both types are needed to maintain balance. The mitochondria produce many types of *Redox Signaling Molecules*; there are multiple RS type molecules and as well as multiple ROS type molecules. Together, these molecules regulate oxidative reactions and facilitate cellular communication, repair and regeneration.

9

<http://www.cancer.gov/cancertopics/factsheet/prevention/antioxidants>

¹⁰ <http://ghr.nlm.nih.gov/glossary=glutathione>

2

RS Redox Molecules The Antioxidant Activators

The RS (reduced species) molecules account for half of the redox signaling molecules that the mitochondria produce. These molecules activate antioxidants so they are useful. The antioxidants can then fight free radicals¹¹. But this goes much further than what the whole antioxidant mechanism is about.

Free radical isn't a reference to a hippie activist from the 60's; It's an oxidizer. The free radical is constantly seeking balance. It does this by taking an electron, which is negatively charged from something else.

For example, you may have a perfectly healthy DNA and if there is a free radical in its vicinity, it may rip an electron from the DNA to balance itself. But, look what it left behind – damaged DNA!

Everything in nature has a tendency to move towards equilibrium and this includes molecules, atoms and even subatomic particles,

¹¹ <http://ghr.nlm.nih.gov/glossary=freeradicals>

which includes virtual photons¹² but that is a whole other story altogether.

So again, if something is positively charged (free radical), then it will steal an electron (negatively charged) from something healthy to balance itself leaving a damaged cell behind.

Ideally, your mitochondria should be producing enough RS molecules, which can neutralize the free radicals before they neutralize themselves by damaging healthy cells.

This is a very elementary explanation but is sufficient to describe the general relationship between free radicals and anti-oxidants.

There are many supplements, juices and other health related products that are promoted as antioxidants and they have some benefit to some degree.

One of my past businesses was a nutrition store with many thousands of bottles of dietary supplements and a good amount of those were all the latest rage when it comes to antioxidants.

Let's explore some antioxidants for just a moment. These antioxidants are, of course, not in and of themselves part of the *Redox Signaling Molecules*.

¹² <http://science.jrank.org/pages/7195/Virtual-Particles.html>

The most common antioxidant vitamins and minerals are A, C, E, Zinc and Selenium amongst other popular ones.

Vitamin C is a great antioxidant and is necessary for good connective tissue and it has countless other uses. Vitamin C (ascorbic acid) is a molecule. Magnesium ascorbate is an even bigger molecule, but it is a form of Vitamin C that is more absorbable in the body than plain ascorbic acid.

Vitamin C can neutralize a free radical or *oxidizer*¹³ by donating an electron to it. And please understand this point very clearly... unfortunately the Vitamin C becomes a bit oxidized itself when it gives up an electron – it becomes an oxidizer itself – the very thing that it helped neutralize. It isn't as harmful as the original oxidizer but nevertheless, it becomes a free radical itself.

When oxygen and iron come together, that makes iron oxide, which is rust and the damage that a free radical can cause in the body is sometimes referred to as cellular rust, because that is exactly what it is – not a metallic rust but a biochemical “rust” or “oxidative stress.”¹⁴

Another antioxidant is negatively charged hydrogen and is one of the most condensed forms of electrons you can get in a supplement.

¹³ <http://safety.science.tamu.edu/oxidizers.html>

¹⁴ <http://www.ncbi.nlm.nih.gov/books/NBK3869/>

Normally, a hydrogen atom has one electron but if it is considered negatively charged it has two.

So when this negatively charged hydrogen gives off an electron, it does NOT become a free radical itself because it still has one electron per proton!

That is actually very profound because think about it – one capsule can have a lot of hydrogen atoms (normally bound to silica to make it a powdered form and stable) – but how many molecules, which are composed of MANY atoms, will it take you of Vitamin C to have the same amount of electrons that can be donated? MANY, MANY POUNDS IF NOT A TRUCKLOAD, LITERALLY!

There are many kinds of antioxidants and you have heard about all the super juices (functional foods) like mangosteen, goji berry, acai and others.

The manufacturers compete with each other by bragging about which one has the strongest ability to neutralize a free radical. The strength of their antioxidant ability is measured in an **ORAC**¹⁵ value, which means *Oxygen Radical Absorbance Capacity*. In simple terms, it is the ability to neutralize oxidizers.

¹⁵ <http://www.ars.usda.gov/is/AR/archive/feb99/aging0299.htm>

Every company is very proud of their ORAC value and they should be proud of that. Antioxidants are very important!

However, whether the ORAC value is 25,000 or 50,000 or even 100,000 – it is all completely irrelevant. The body can only use a small percentage no matter how high the ORAC value is and all the rest cannot even do anything as a matter of scientific fact.

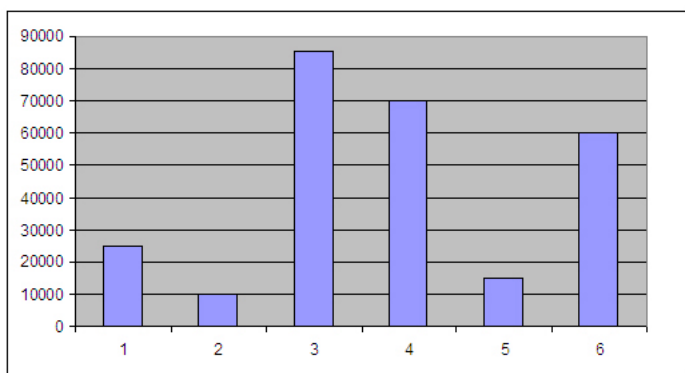


FIG 2.1

Figure 2.1 above are just some random examples of some possible ORAC claims by various antioxidant manufacturers. 2 is obviously the lowest and 3 is obviously the highest. If anyone were asked what he or she would take, 3 would be the obvious answer.

Now, take a look at the next image:



FIG 2.2

Just to show the concept of what is happening with the amounts as examples only, the green circle is showing how much anyone is actually able to utilize because their own body can only produce so much RS molecules.

What you see in the red circle is what is wasted – meaning that all that is not able to do anything so you might as well take a very low ORAC value antioxidant if you don't add an external source of *Redox Signaling Molecules!*

Now to be fair, some of these dietary supplements could possibly increase ATP production, which will in turn boost a proportional amount of Redox Signaling Molecules.

Some examples of supplements that can do this include d-ribose, creatine monohydrate, tongkat ali, cordyceps mushroom, and many others. Although they are known to boost ATP, they can boost a proportional amount of redox signaling molecules as well.

However, only so much ATP production can be boosted and no matter what, there will never be enough naturally produced Redox Signaling Molecules to ever utilize a high amount of the antioxidants.

Please understand this point very clearly – a baby has 100% cellular efficiency. By the time someone turns 70 years of age, their cellular efficiency has dropped to 10%.

So, no matter how many supplements someone takes to boost ATP production, which will boost the amount of redox signaling molecules, it is still based on very, very poor cellular efficiency.

There is simply no comparison to directly giving the body the very redox signaling molecules that are responsible for cellular efficiency – without this, all the supplements in the world cannot do their intended job, period.

And, this goes beyond just having enough RS molecules to activate the antioxidants. Here's another distinction as well.

An antioxidant from an external source (outside the body) can only neutralize ONE free radical and then it becomes a free radical itself – just a weaker one or a lesser evil if you will.

The ones produced in your own body working together with catalase¹⁶, a superhero

¹⁶ <http://www.catalase.com/cataext.htm>

enzyme, can assist in the neutralization of MANY TENS OF THOUSANDS of free radicals in one second! It works together with glutathione and SOD (superoxide dismutase)¹⁷.

So, even if the Redox Signaling Molecules can actually activate a lot of the antioxidants with high ORAC values, making them useful for the first time ever, each antioxidant from these sources can neutralize ONE free radical and the natural one can neutralize TENS OF THOUSANDS – which do you prefer?

Glutathione is not just an amazing antioxidant; it is the number one antioxidant that the body produces on its own. It helps to detoxify the body by converting toxins into a form that can be excreted by the body. Glutathione supplements are very popular but the bad news is, the stomach acid neutralizes most glutathione and hardly any makes it to the blood.

Another amazing antioxidant that the body produces is SOD (superoxide dismutase). It converts some super oxides such as certain forms of oxygen into stable oxygen and peroxide.

Many of my customers requested this as the end-all-be-all of antioxidants. However, most of the benefit is destroyed when the SOD is

¹⁷ <http://www.pdb.org/pdb/101/motm.do?momID=94>

neutralized in the stomach acids just like Glutathione.

There is grape skin extract, green tea, COQ10, other fruit and veggie concentrates, and on and on and on. Yes, there is benefit from all of these and much of the benefit is separate from their antioxidant properties.

Suffice to say, antioxidants are incredibly important but they appear to be completely worthless without the **secret key!** Yes, they all need enough RS molecules to activate them but they need something else too.

In the next chapter, I'll get on to the ROS¹⁸ or Reactive Oxygen Species and afterwards, you'll feel a paradigm shift within you as you see how it all ties together!

¹⁸ <http://ghr.nlm.nih.gov/glossary=reactiveoxygenspecies>

3

ROS Redox Molecules Attack Viruses & Bacteria

Now that we talked a bit about antioxidants that neutralize free radicals, let's talk about some free radicals themselves – the GOOD kind! And YES, there is a good kind.

To be honest with you, there is no need to call them a “free” radical – they are simply radicals but that term has persisted so long that we'll continue to use it for convenience and to prevent confusion.

Have you ever heard that oxygen is the “necessary evil”? That is because we'd be dead without it. However, it can obviously oxidize your cells and cause damage.

Doesn't it seem odd that no matter how we are put together that we require a certain amount of oxygen, the thing that can also cause a lot of damage but is necessary life at the same time?

Well, let's just discuss some of these ROS (Reactive Oxygen Species) molecules for now.

There are many kinds of free radicals. There are many kinds of carcinogenic (cancer

causing) compounds in nature from pollution, chemicals and you name it that if they make their way into our body, they are highly positively charged (ionized) and will damage any healthy cell they come in contact with.

However, a free radical can even be negatively charged or even neutral. But to keep it SIMPLE, we're going to discuss a positively charged "free" radical or oxidizer, specifically.

ROS molecules are composed of a variety of oxygen related molecules. These may be hydrogen peroxide, ozone or whole variety of others. Yes, our cells produce ozone and hydrogen peroxide amongst other molecules in small levels.

If there are different blood borne pathogens like virus, bacteria, yeast, molds and fungi, these will be attacked by the oxygen. The oxygen will strip electrons from it destroying them and neutralizing itself. So, instead of attacking healthy cells, these ROS are our friends because they attack the bad things in the blood and throughout our body and are very crucial messengers for the immune system.

Otto Warburg received a Nobel Prize in 1931 in physiology¹⁹. It was known to him that any cell that was deprived of oxygen turned

19

http://nobelprize.org/nobel_prizes/medicine/laureates/1931/warburg-bio.html

anaerobic and started to ferment sugar to live instead of breathing oxygen. Those are very bad cells by the way and go by different names. And visa versa – if those cells are super oxygenated, they will revert back into healthy aerobic cells.

Later on, Johanna Budwig found that there was more to Otto Warburg's discovery and it dealt with fatty acids being very necessary for various oxygen metabolic pathways²⁰. That is another story but it did not refute Warburg, it simply expanded on it.

There are many oxygen therapies and supplements including oxygenated water that is supposed to increase the oxygen level in their blood. This is claimed to increase alertness, boost the immune system along with countless other claims. Please spend some time to research the Internet for these oxygen modalities.

Our blood is usually already *close to* 100% saturation (as saturated as it can be) so much more oxygen can't make much of a difference – or so the skeptics think. However, that depends on what form the oxygen is and what its purpose is.

There are some modalities that deal with injecting hydrogen peroxide into the blood stream and this is claimed to be able to oxygenate the body and kill pathogens in the

²⁰ <http://www.budwigcenter.com/johanna-budwig-biography.php>

blood. 35% food grade hydrogen peroxide is used orally as well and most users will put about 5-6 drops in a glass of water and will drink that a few times a day.

Ozone therapy is even a known method to accomplish the same but may be a bit stronger. There are even methods to circulate the blood outside of the body and ozonate it before it goes back into the body. This has been used in Europe for a very long time.

That also is claimed to kill pathogens in the blood like virus, bacteria, fungi, etc... as well as super oxygenating the body in order to accomplish certain goals. Ozone or O₃ should not be inhaled because it is such a harsh oxidizer that it can hurt the lungs so please don't try to breathe ozone from an air purifier!

Bis-Beta Carboxyethyl Germanium Sesquioxide, or Organic Germanium in simple terms practically mimics oxygen in the body. It can do many wonders for what other oxygenation therapies are known for²¹.

There are some mushrooms and herbs that happen to have high amounts of naturally occurring germanium in the soil they grow in, usually at high altitudes, and people get the benefits of super oxygenation when taking them.

²¹ <http://www.google.com/search?q=organic+germanium+asai>

One of the most interesting oxygen therapies in my opinion is electrolyzed “commonly ducted” water gas, popularly known as HHO, which isn’t a real molecule itself; it is rearranged water that is composed of multiple molecular varieties. Take note that water is HOH.

Purified water can be electrolyzed. Yes, you can electrolyze water that has no conductive electrolyte in it but that is another topic altogether.

Oxygen goes to the positive plate (anode) and the hydrogen goes to the negative plate (cathode).

Normally, the classic method is to keep the hydrogen and oxygen separated. But, *common ducted gas* means to leave them all in the same place as the gases are evolved and exiting the water cell together.

Most people who are experimenting in the water fuel world using hydrogen “boosters”, etc... are under the mythical belief that there is only H_2 (a diatomic hydrogen molecule) or O_2 (a diatomic oxygen molecule). That is all incorrect.

With plain water electrolysis, there are MANY molecular “species” produced including hydrogen peroxide, ozone, H_3^+ (tri-atomic hydrogen), OH^- , and a whole host of others including atomic varieties of oxygen and

hydrogen.

As a quick note, it is highly recommended that if you want to know the truth to all of this, immediately stop reading the modern basic textbooks because they are full of delusions and obfuscation. Instead, go back one or two hundred years ago and read the facts in plain English. Study the works of people like Sir Humphrey Davy²², J.J. Thompson²³, G.L. Wendt²⁴, R.S. Landauer²⁵, Irving Langmuir²⁶ and others from their era.

This is the case with distilled water or water where sulfuric acid, carbon or even *sodium chloride* are added as an electrolyte. Of course when you add any of those electrolytes, then you have a LOT more types of molecules created in the mix because you are able to add the atoms that compose the electrolytes to the different molecular combinations that will be produced.

The atomic ones usually don't last very long until they quickly join another and create a variety of different molecules – but if it is created right before it is used as a fuel, the atomic

²² <http://www.woodrow.org/teachers/ci/1992/davy.html>

²³ <http://www.chemheritage.org/discover/chemistry-in-history/themes/atomic-and-nuclear-structure/thomson.aspx>

²⁴ <http://www.google.com/search?q=%22gerald+l+wendt%22>

²⁵

<http://www.google.com/search?q=%22r+s+landauer%22+hydrogen>

²⁶ <http://www.woodrow.org/teachers/ci/1992/langmuir.html>

hydrogen can stay atomic long enough to be burned and release three times as much energy when it recombines than if molecular hydrogen were burned.

Anyway, the point is that MANY molecular and atomic combinations are created from simple H₂O or water. Some of the molecules can give gas and some stay in the water and some can be in both the gas or the water.

Now when this water gas is coming out of the cell, it can be bubbled into other purified water and little by little, that water is considered "charged." That "charged" water, which is really just a carrier for all those different gaseous varieties, could be used for all kinds of things.

If that charged water is used to water plants, the plant growth just takes off! People report that drinking charged water gives them all kinds of benefits like energy, pain relief, etc... Everyone needs to do their own due diligence; these are not claims made by the author, these are reported by many people over many years.

Even the gas itself can be blown over painful areas like joints, muscles, etc... the molecules are so small that they can penetrate right through the skin and immediately reduce inflammation.

It is known that simple H₂ is very anti-

inflammatory and this is published in quite a few published medical papers and journals²⁷. So, it isn't just about the oxygen varieties. This is included here just to complete the thought.

This should only be done with sterile conditions and with safe electrodes that will not have contaminants leaching into the water and without electrolytes like lye, which is very corrosive.

Basically, **DO NOT DO THIS AT HOME**, this information is just to give you a perspective of something that isn't talked about very much. Someone might think it is ok using any old stainless steel electrodes and wind up with some traces of the bad kind of chromium in their mix – leave it to the professionals please!

Now if you want to experiment and use that charged water for plants that do not produce anything edible – go ahead and have some fun but you still need to be qualified enough to build or use a cell – hydrogen is explosive and can go BOOM.

This whole method has been used for many years for people, animals and plants – again – **do your own due diligence**.

So again, suffice it to say, there are some definite methods that get results and it deals with having various forms of oxygen in the

²⁷ <http://www.ncbi.nlm.nih.gov/pubmed/21736547>

blood. Not all oxygen is the same and it is a REACTIVE type that is part of the Redox Signaling Molecules system.

Most ionized atoms or positively charged molecules are called reactive because they cause easy electrical reactions since they are strongly trying to balance themselves and will do so by “oxidizing” something – if they are oxygen based.

Just because something is reactive doesn't mean it is oxygen based. For example, atomic nitrogen is VERY reactive but of course is not oxygen.

Anyway, having ROS in the blood is crucial to life and we'd be dead without it. The immune system needs molecular communicators in order to work. Without them, house dust or a common cold would be lethal and we'd all have to live in a sterile bubble environment.

So far, you've seen the simple concepts of antioxidants and how they neutralize free radicals. And you also have seen some simple concepts of how various forms of oxygen are needed for various purposes.

Together they comprise the *Redox Signaling Molecules*. The *SECRET* will be spelled out in the next chapter.

The Redox Secret

Here's the graphic on the *Redox Signaling Molecules* again so you can see it in its simplicity:

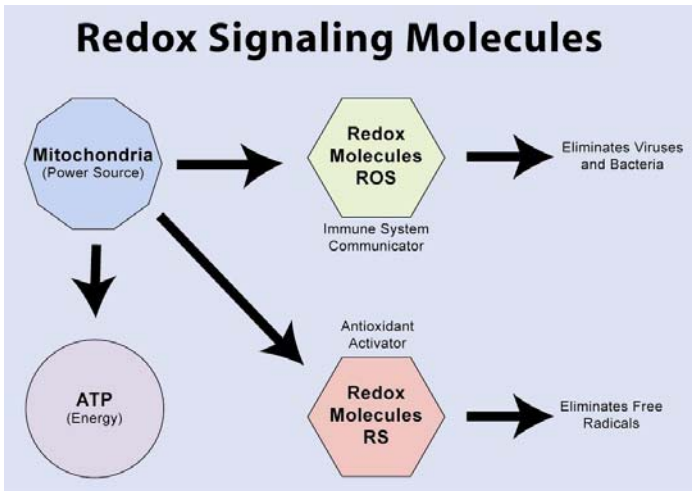


FIG 4.1

Here is the kicker – many products focus on the *antioxidants, which are ACTIVATED by the RS molecules* (but of course none of the antioxidant manufacturers tell you that most of the product is useless) and there are many products and modalities focus on oxidizers and

the whole secret is that they are **BOTH NEEDED TOGETHER IN BALANCE!**

So in other words, even if there are just RS molecules that can activate antioxidants, none of this is going to happen unless there is a BALANCE of the ROS molecules!

For now, I want to point out a couple papers that show both sides of the story.

*Electrolyzed Reduced Water and DNA, Electrolyzed Reduced Water Scavenges Active Oxygen Species and Protects DNA from Oxidative Damage, By Shirahata S, Kabayama S - 05/08/97, Institute of Cellular Regulation Technology*²⁸. This is one study showing the benefits of water that is loaded in the RS or reduced species molecules. The paper describes clearly that this acts like the SOD antioxidant our bodies produce. These molecules can neutralize free radicals and thus preventing oxidative stress in the body.

*The Role of Reactive Oxygen Species in the Electrochemical Inactivation of Microorganisms, Joonseon Jeong, Jee Yeon Kim, and Jeyong Yoon, School of Chemical and Biological Engineering, College of Engineering, Seoul National University, San 56-1, Sillim-dong, Gwanak-gu, Seoul 151-742, Korea, Environ. Sci. Technol., 2006, 40 (19), pp 6117–6122*²⁹. This particular

²⁸ <http://www.ncbi.nlm.nih.gov/pubmed/9169001>

²⁹ <http://pubs.acs.org/doi/abs/10.1021/es0604313>

study shows the other side of the story with the ROS or reactive oxygen species and how it is very lethal to pathogens.

The ROS molecules of course attack pathogens, oxygenate the body and then signal the immune response. The RS molecules then activate the antioxidants necessary to prevent or reverse oxidative damage so that any cellular damage will be reversed or prevented.

But, what if you had BOTH the RS and ROS in one simple drinkable solution? How can they coexist in one place? That would be like having your cake and eating it too!

It seems contradictory to have them together because they'd just neutralize themselves on contact but read on...

When you take antioxidants, their effectiveness is proportional only to the amount of RS molecules available to activate them, which of course are produced by your mitochondria. That means that only a very small percentage of all the antioxidants from any product regardless of the ORAC value can even be activated in order to do anything.

Everything above that small minimum level is completely worthless to the body.

Yes, there is *some* benefit. However, there is no point in the high ORAC antioxidants unless there is a sufficient supply of RS molecules to

activate them and there is not a human being on Earth that is having that much RS produced inside their body. Nor is anyone producing the ROS companion molecules in any sufficient supply to balance out the cellular regeneration equation!

You can have as much gas in your tank as you want but if there is no spark, it doesn't matter how much gas you have, it isn't going to do you any good! The RS molecules are like having that spark for every single antioxidant that lights it up in order for it to do its job.

There is another point that is very crucial to understand about antioxidants that we take in supplement form. Simply, antioxidants in supplement form are mostly unable to make it from the blood stream into the tissues! That means that even if they are activated, they still can't do much good compared to the body's own naturally produced antioxidants that are boosted by the redox signaling molecules.

Many of the molecules that make up the antioxidants from juices and other supplements are so large it would be like trying to cram a football through the holes in a chain link fence – it just isn't going to happen!

So, the obvious solution should be that if the body isn't creating enough to have serious regeneration action happening on its own that

the Redox Signaling Molecules *must come from outside of the body*. As a side note, it has always been said that it is impossible to create these redox signaling molecules outside of the body. Well, read on!

For now, **pay attention to these 7 points** - BOTH the RS and ROS molecules *absolutely need to meet the following criteria*:

1. The Redox Signaling Molecules need to be in a high abundance above and beyond what the body can produce so that they can not only activate the naturally occurring antioxidants, but in enough supply to also activate any externally taken antioxidants such as all the super juices or otherwise.
2. The Redox Signaling Molecules need to be produced in a way that defies impossibility – and that means they must be in a form that is *stable*. This means that when they are together in one solution that they do not simply just neutralize each other on contact. To accomplish this is to accomplish the “impossible.” This doesn’t mean to just stabilize them for 5 minutes just to prove it can be done. This means stabilizing the molecules for OVER A YEAR or more so that it is practical!

3. The Redox Signaling Molecules need to help increase and accelerate the body's own production of natural antioxidants such as Glutathione and SOD and even catalase, which is an enzyme that splits peroxides into hydrogen and oxygen.
4. The Redox Signaling Molecules should be in a bio-available form like what the mitochondria produces. Goji berries are good for you and they are natural but your body doesn't have goji berries – it has to break them down and the body cannot use all of it. Redox Signaling Molecules would be NATIVE to the body meaning there is no breaking it down to make it bio-available – it is ALREADY in the exact form that the cells produce!
5. The Redox Signaling Molecules should increase the effectiveness of the antioxidants that your body produces (glutathione and SOD) or the ones you take through supplements. This doesn't mean just increasing the amount of antioxidants, which the Redox Signaling Molecules should do – this means that whatever antioxidants there are, they should be MORE effective. The studies show a 500% increase in effectiveness. Now, what does that do to the ORAC

value? It * FINALLY * gives it meaning and value – until now, it was simply money down the drain but who knew? Without the *Redox Signaling Molecules*, the high ORAC antioxidants are about as useful as a V12 racing engine with only 1 cylinder working. Again, it is pointless without the *Redox Signaling Molecules*.

6. The Redox Signaling Molecules should assist the immune system, reduce oxidative stress and massively boost cellular repair.
7. The Redox Signaling Molecules should be **100% non-toxic**, which they should be if they are in the same form as what the body produces.

Putting both RS and ROS in one place and having them be stable... THAT is the most important breakthrough in the health sciences in the last 100 years and it appears that many scientists are in agreement.

Please allow me to give you a bit of my background. My experiments on rearranging molecules number into the thousands of hours for the purposes of finding solutions to the

energy crisis.

What is more important than armchair theorists that sit around getting their worldview from books, is someone that actually does the experiments.

For example, most people in the hydrogen fuel world are focusing on using electricity in all kinds of ways to separate hydrogen from oxygen in water – that is very simple electrolysis.

What if we could break apart water to free up hydrogen and oxygen? And, what if we could break apart nitrogen from the air we breathe in order to allow the freed up hydrogen to join the atomic nitrogen to form ammonia out of thin air with very little power? We would be creating an efficient fuel on demand because every internal combustion engine on the planet can run on ammonia.

This process has been accomplished at efficiency levels thought to be impossible. But it is extremely difficult for the average experimenter to accomplish. The mixtures are very UNSTABLE. If you create atomic nitrogen, it wants to join with another nitrogen right away, which will turn it back into a molecule.

If we were able to split the nitrogen molecule into atomic nitrogen and STABILIZE it long enough to easily attach hydrogen at low power - it would be creating ammonia out of

thin air, water and a small amount of electrical power. That would solve the world's energy problems overnight!

Without going too deep into this, because fuel-on-demand isn't the subject of this book, I think the point is made that STABILIZATION is all-powerful.

Likewise, if there was a way to stabilize a special mixture of *sodium chloride* (sodium and chlorine) and water (hydrogen and oxygen), which has been molecularly rearranged so that you have both a balanced mixture of RS and ROS molecules without them instantly neutralizing each other – THAT would be a profound *work of art* and is worthy of something beyond a Nobel Prize! It would be in its own category, period, end of story.

How many molecular varieties can you create from sodium, chlorine, hydrogen and oxygen? Quite a few! Some are of the ROS variety and some are of the RS variety.

Through incredible and profound synchronicities that I was blessed to experience, and during my research and development into the stabilization of electrically rearranged fuel molecules, two separate friends bring a successfully stabilized solution of both the RS and ROS to my attention – it was always thought to be impossible, as described previously by the

mainstream, but fortunately the word impossible is not in our vocabulary!

When it was apparent what it was, my jaw dropped because it was completely obvious how profound the implications are. There is a lot of chemistry applied in the healing arts and they all have their own merit to a point. But, this is a very serious GAME CHANGER!

This is a new revolution in and of itself and is completely foundational to cellular repair and regeneration – like I said, a veritable *Fountain of Youth* – literally!

It would be easy to fill an encyclopedia with people's stories about how they benefited from the molecules – about how they all *got their lives back!* The chapter on sharing is only a small drop in the ocean out of all the stories that were shared with me – and I like to use stories of people that I personally know or witnessed. There are many things happening to people I cannot even discuss.

The reason that this was referred to as a biological source code is because there are many things such as herbs for example. Those herbs are like a compiled computer program. You take them and your body has to decompile them or break them down into a form that it can communicate with at the cellular level.

BUT – WHAT IF... there was something

that was already available in a form that the body does not have to break down but is in a form that the body already makes on its own but we're just giving it a bigger supply of it – would that make a difference! OF COURSE! Hence the earlier reference to the Redox Signaling Molecules being NATIVE to the body rather than just natural.

Remember the 7 points that Redox Signaling Molecules MUST adhere to in order to be legitimate? Well, this dream has come true!

That is like getting a biochemical source code that the body does not have to decompile or deconstruct! You just give it to the body and it is already speaking the biochemical language of the body so it knows exactly what to do!

Brain and Nervous System

The number one signaling system in the entire body is the nervous system. Every place in our body shares a common connection. The nervous system impulses are sent back and forth in this system in a very efficient manner. The central nervous system helps to process these signals in an intelligent manner similar to a computer processor but in this case, it is our brain that assists in this communication.

This system is profound beyond words and is actually more advanced and complex than the most advanced computer networks in the world by a long shot.

Redox Signaling Molecules are found in a balance in our nervous system cells as well as outside of the cells and are essential to the proper working of the electrical impulses.

Without a proper balance of the Redox Signaling Molecules, the neurotransmitters cannot properly conduct these signals. It must be stressed that it is a BALANCE of the Redox Signaling Molecules that are important, which of course is contrary to the popularly held beliefs

that one must either load up on anti-oxidants or reactive oxygen species for the body to function properly.

When is the last time you heard a health “guru” tell you that you need a balance of special oxidants in addition to your antioxidants for the nervous system and other systems in the body to function properly? I’m willing to bet that you have not heard this from ANY of them no matter how big their name is!

In addition to proper signaling in the nervous system, a *balance* of Redox Signaling Molecules protects the nerve cells as well, since these cells are subject to oxidative stress (cellular rust) and degeneration.

These Redox Signaling Molecules assist in healthy brain function by balancing the reception of chemical messengers and hormones.

The brain consumes an entire one-fifth of our oxygen intake and this creates a lot of oxidants, which of course can cause damage.

However, balanced Redox Signaling Molecules are what allow the naturally created antioxidants in the cells to repair this damage. It is difficult for the brain and nervous system cells to be repaired if they are damaged so it is best that there is a proper balance of the Redox Signaling Molecules, which cannot be accomplished by simply taking antioxidants no

matter how strong of a neutralizer they are.

Of course proper nerve function is crucial to the entire body and brain, but there are many other benefits.

For anyone that does a lot of mental work, any increase in mental performance is greatly appreciated! Experiencing an increase in mental agility and memory is always welcome.

Even the *ideomotor effect* can become more accurate. The nervous system is the first to respond to any subconscious stimuli. The more effective and efficient the brain and nervous system communication is, the more accurate information from the subconscious can be communicated to the body by way of the ideomotor response.

If you happen to be benefiting from exotic subconscious mind technologies or you are a practitioner of technical remote viewing or otherwise, you will receive great benefit from the redox signaling molecules.

If you are a reiki practitioner, Chinese energetic medicine practitioner or use applied kinesiology (muscle testing) in any way, then redox signaling molecules is for you.

These molecules should be in the arsenal of every martial artist, energy practitioner or mind power enthusiast beyond a shadow of a doubt!

6

Athletes Wildest Dream

Whether you're an athlete or not, you probably have seen the tests when someone is jogging on a treadmill with an oxygen mask on.

A part of this test is known as the VT (Ventricular Threshold) and VO2 Max.

When someone is exerting themselves, in the beginning, they are in the aerobic state meaning they are getting enough oxygen and their body is using it efficiently. When the person starts the test, they are in this aerobic state. The body is 13 times MORE efficient in an aerobic stage than it is in an anaerobic stage.

The moment they transition to the anaerobic state where they are not getting enough oxygen and their body is not effectively using it anymore, that point is the VT or ventricular threshold. That is when the athlete "hits the wall" or "gets winded".

When the athlete hits the VT point, they still have a ways to go until they are no longer able to function. When they get to the point where they simply cannot go on and they windup throwing up or passing out, that is their

VO2 Max.

Simply, the aerobic state is from the start up to the anaerobic state or VT point. From the VT point to the VO2 Max point, that is the anaerobic state when they cannot go on any further.

Needless to say, the longer the time it takes to get to the VT and the VO2 Max point is worth its weight in gold, pun intended. The gold medal in many sports is such a minute difference in improvement over the other competitors that the average person usually cannot comprehend how such a small difference can make the difference between winning and losing.

Please comprehend how profound and significant these facts are because they are GAME CHANGING.

When an athlete is able to have an abundant supply of redox signaling molecules, some preliminary tests indicate that they may be able to increase the amount of time it takes until they hit their VT level by a breathtaking 12%!

Let's put that into perspective so you can see why the term GAME CHANGING isn't just some exciting hype, but is literally a game changer...

If someone were to follow a triathlon-training program for 6 months to a year, they would expect to increase the time it takes to get

to the VT by 1-2%.

If someone were to take illegal doping drugs, they could expect to increase the time it takes to get to the VT by 2-4%.

In two weeks flat, drinking the redox signaling molecules, preliminary tests indicate that the athlete may be able to increase the time it takes to get to the VT by 12%!!!

Now, the VO2 Max score is that final point of exhaustion when an athlete is so exhausted, literally, that they literally throw up and/or pass out – this is a very serious endurance point.

Not only do the Redox Signaling Molecules appear to be allowing the athlete to extend the time it takes to get to the VT score by 12%, they extend the time it takes to get to the VO2 Max by 10%!!! This is like turning on the superhuman endurance ability at the flick of a switch.

AND, the VO2 Max capacity for an athlete, not just the time it takes to get to the max, but that max is EXTENDED by up to 3%!

Here is the reality check and here is how profoundly significant this is... The Tour de France is the pinnacle of high performance endurance cycling. Mt. Everest to mountain climbing is what the Tour de France is to Cycling. The difference between winning 1st

place or winning 50th place is a VO2 Max capacity difference of UNDER 2%!

And the redox signaling molecules can increase the overall capacity by up to 3%!!!

Every athlete in the world that is not using Redox Signaling Molecules is at a tremendous disadvantage over every other athlete in the world that does use the molecules. Not using the 100% non-toxic and approved for competitive use redox signaling molecules is the same as surrendering to the competitors before the first day of practice ever starts!

At the rate that this knowledge is spreading – and this book is spreading like wild fire, why in the world would any athlete risk losing a race, competition, fight, game, or otherwise to another individual or team because they haven't started to benefit from the molecules themselves?

All things being equal, the athlete not using Redox Signaling Molecules doesn't even stand a chance, period.

When there is a GAME CHANGER – it isn't about some small competitive edge that can be worked around – it is about taking things to a whole new level leaving everything else in the dust.

Look, when you read that this was a game changer, that isn't just language to get you excited, this is literally something that is going to

take athletes to a level never dreamed of – in a simple, safe and non toxic way that is perfectly legal in sports competitions PLUS it speeds up the recovery and repair afterward!

Just to make sure you were paying attention, you did see that these molecules BEAT illegal doping drugs didn't you? Some of the top athletes in the world are being busted right now because of the drugs – if they were using these molecules, they would be safely winning in an approved way – what is that worth to an athlete?

Just so it is absolutely clear, let's repeat - *the results from these super molecules are actually blowing away results that athletes are getting by taking illegal drugs!*

That completely rewrites what is possible in the world of sports training and endurance in a HUGE way.

So, in addition to advancing cellular repair and regeneration light years ahead of anything else ever produced, all these athletic benefits are realized as well and when you combine them, you are able to advance your own life to a level never before thought possible!

Public Availability

My publishing company is where most of my commitment is because it gives me joy to share information about cutting edge methods and technologies with others.

Being the Director of Special Projects for an amazing mind technology is very fulfilling and it is very rare that my time goes elsewhere.

Because of the profound significance of the results and science behind stabilized *Redox Signaling Molecules*, there is an automatic moral obligation to share this with everyone!

As the synchronicities would have it, the company that has this technology in their hands, is growing faster in Spokane, Washington, than anywhere else in North America! That means the top movers and shakers are at arm's length to me so I get to see a lot of what is happening first hand.

The redox signaling molecules are 100% non-toxic to people and are safe and beneficial for pets as well. These molecules come in a liquid form and are easily drinkable.

Most people get tremendous benefit from

only a few ounces per day.

It is recommended to drink two ounces in the morning upon waking on an empty stomach and do not eat or drink anything for at least ten minutes. Then, drink two ounces on an empty stomach before dinnertime and do not eat or drink anything for at least ten minutes.

The redox signaling molecules are currently available in 32 ounce bottles. Four bottles will last one person one entire month.

To improve the quality of your own life or to help someone you know get their life back, please have them visit:
<http://energeticforum.com/redox>

Sharing Results

Here are a few results that some people are sharing...

“In just three weeks of drinking a few ounces a day, all of the brown spots on the back of my hands disappeared. At age 60, that seemed unlikely. There was also a benign growth on my leg that I have watched for years, wondering when I when was going to get it surgically removed. After five weeks, it dried up and fell off.” – **Peter Lindemann, Liberty Lake, Washington**

“I have suffered from debilitating discomfort for over three years. Every morning it was extremely difficult to get out of bed because of how I felt – like I got run over by a freight train. After drinking the molecules for a few weeks, one morning I got out of bed and when I was in the shower, I realized my discomfort was gone. I have taken all kinds of supplements, done chelation therapy and many other modalities and the redox molecules are the only thing to ever bring me this kind of relief.” – **Victor Azar, Spokane, Washington**

“After drinking the molecules for only one week, my knee discomfort was partially relieved and I lost five pounds! It isn’t intended for weight loss but my appetite was less than it has been, which tells me I’m getting more nutrients out of the food I am getting so I’m not as hungry. Both my husband and I are drinking it and we can fall asleep easier and wake up easier. I can’t sit still – before, I was on the couch quite a bit because I didn’t have much motivation. Now I’m constantly on the go go go and I’m 62!” –
Paula Kaye, Spokane, Washington

“I smoke like a chimney and haven’t been jogging for a year and a half. I’ve been drinking these molecules for only nine days and decided to take a run. Incredibly, I was able to run four miles non-stop on the first try and it normally takes me 3-4 runs to build up to that distance! The next morning, I could hardly notice any soreness. After another week of taking the molecules, I went for the same run and went four miles again – and the next morning, still hardly any soreness! Again, I smoke all the time and haven’t been running for a long time. Being able to bounce back like this just from drinking a few ounces a day is incredible. I’m a month away from turning 50 and I haven’t felt this good physically and mentally in many years.” –
Deyo Hirata, Seattle, Washington

“Recently, I had a wisdom tooth removed, which is late for someone in their 40’s. After it was removed, I asked the dentist if I could do an experiment and he agreed. I took a small cup of the molecules and swooshed it around my mouth and the bleeding stopped instantly, which amazed the dentist. He said it normally takes 20-23 minutes on average for the bleeding to stop. The results were so fast and effective that he didn’t have to pack any gauze in my mouth and I didn’t even need pain pills. That afternoon, I went for a 4 miles walk and the next morning I went for a 4.5 mile run and still no bleeding.” – **Deni Robinson, Mica, Washington**

“I have found that after using the molecules that my scalp has been more moist with less flakes than before. Also, I have noticed that I have more energy on a daily basis.” – **Juralyn Aguilar 25, Pagadian Philippines**

“Before using the molecules, I had a terrible time sleeping through the night. I was so tired all day long and I was getting very discouraged. I have been taking the molecules for less than a month and I sleep soundly through the night and feel full of energy when I wake up. I feel like I got my life back.” – **Mary Lou Moe 84, Spokane, WA**

“In recent years I have had a problem waking

up in the morning. Since I have been taking the redox molecules I find it much easier to wake up and get out of bed. I even find myself waking up before my alarm and getting up motivated to work. From time to time I would get painful sores in my nose and I had to use an antibiotic cream for relief. I was concerned about continually using an antibiotic, because I know it has bad long-term affects. Now I spray the molecules in my nose daily and that problem is under control without the drugs.” – Jeff Moe 46, Spokane, WA

There are countless results that people are experiencing from drinking their molecules. These are not claims that the molecules cure anything. When the body is supported to do what it is designed to do, amazing things can happen!

To improve the quality of your own life or to help someone you know get their life back, please have them visit:
<http://energeticforum.com/redox>

Aaron's Bio

Aaron Murakami is an internationally sought after author, researcher, and inventor. He is committed to the development and distribution of information and technologies that are widely unknown by the general public.

Aaron holds a Bachelor of Science in Natural Health and has owned a popular health food store in Spokane, Washington. He has been the CEO and president for several companies, has operated several online ventures, is a consultant to several technology groups and is currently the Director of Special Projects for an international self-development technology company.

Aaron is the co-founder of a discussion forum that has over 79,000 registered members, dedicated to educating the public about concepts that link spirituality, holistic health, and "impossible" energy technologies to the quantum sciences.

Aaron is a wealth of information regarding powerful paradigm shattering technologies and knowledge that has the potential to cause a massive paradigm shift in global consciousness.

Other Books by Aaron

[The Quantum Key](#) - Get your *Black Belt* in Taboo Physics. Learn what the consciousness and quantum gurus won't tell you because they don't know! Take the Red Pill - wake up in the real world. Your paradigm is about to be shattered! Plus - Energy secrets and a compilation of energy devices.

[A Course in Mind Power](#) - Powerful mind power course with ultra *rare* how-to techniques combined with insight from hands-on experience. Learn the untold secrets to unleashing your innate powers, literally. A Course in Mind Power delivers as promised and sets a new standard!

[Ignition Secrets](#) - Murakami Ignition method uses the SAME amount of power as the CDI system but is so much brighter and more powerful that it is beyond words. It isn't even a spark or an enhanced spark - it is in a category all by itself - it is a bright white ball of wonder. Increase efficiency, reduce emissions and burn water on contact!