

# Redox Signaling Molecules

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



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Anti-Aging, Rejuvenation, and  
Cellular Repair

by

Aaron Murakami, B.S.N.H.

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# Dedication

This book is dedicated to all the health care related friends, partners and mentors that I've been blessed to know over the years.

This especially includes:

Rodger Q. Estes, Qigong Master & Inventor

Linda Nadia Hole, MD

Thomas Kobara, MD

John Kitkoski, Medical Researcher & Developer

Charles T. McGee, MD

Michael "Dr. Who" Hu, Qigong Master

Denie Hiestand, Energy Healer & Teacher

Thank you to Peter Lindemann for your assistance in making this book possible.

Last but not least, I'd like to give special thanks to Gary Samuelson, PhD. Dr. Samuelson is an atomic/medical physicist who is the first person in history to stabilize redox signaling molecules outside of the body. This profound breakthrough made it possible for the average person to benefit from this inspirational breakthrough.



# Table of Contents

Introduction	9
Chapter 1 – Redox Signaling Molecules	12
Chapter 2 – RS Redox Molecules	18
Chapter 3 – ROS Redox Molecules	28
Chapter 4 – The Redox Secret	32
Chapter 5 - Brain and Nervous System	38
Chapter 6 – Athletic Secret	41
Chapter 7 – Public Availability	50
Chapter 8 – Sharing Results	51
Aaron Murakami's Bio	55



# Introduction

For the last twenty years, my research has focused on green energy technologies, natural healing, consciousness expansion, and advanced agricultural methods.

Although my imagination has been captivated by all of these areas of science, it has been the world of healing where most of my time has been invested.

My Bachelors of Science is in Natural Health, but it was really the relationships with friends and mentors in the health care field that expanded my understanding of how the body's innate healing abilities can be supported.

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

From 2002-2006, most of my time was occupied as owner and operator of a nutrition store in Spokane, called *Top o' the Line Total Health Shoppe*. As proprietor, it was necessary to explore the benefits of more supplements than most people could possibly imagine.

Thousands of my cherished customers shared with me their experiences and results they obtained by using various supplements and

healing modalities. This gave me a very good gauge to understand the effectiveness of hundreds of supplements and healing methods.

Over the last decade, one popular trend in the dietary supplement industry has been the exotic fruit drinks, such as Noni, Mangosteen, Goji, and many others. These products are promoted and sold for their powerful antioxidant and anti-aging properties.

The common denominator between many of these products is that they are each marketed as the end-all-be-all of high strength antioxidants. You have probably heard the story – some new fruit is discovered in the jungles of Asia or the Amazon, the folklore says it treats “this and that”, somebody figures out how to market it back here “in the civilized world”, and we are told this constitutes some big breakthrough. The reality is that there is no big breakthrough and you still just have fruit juice.

We have all been told that antioxidants neutralize free radicals and that this is the premise of the current anti-aging theories. This theory is based on the idea that cell damage is caused by electrical interactions between different substances in the body at the cellular, molecular, and atomic levels.

What is not widely known by the public is this. If the cells in your body do not have the correct balance or abundance of *Redox Signaling*

*Molecules*, antioxidants are not able to neutralize any free radicals. In other words, antioxidants only serve a secondary function in the protection of cells from free radical damage!

The purpose of this book is to introduce you to the science of *Redox Signaling Molecules* in a way that you will easily understand.

After reading this, you'll be one of the first to know about what some are calling the *most significant breakthrough* in medical science in the last 100 years.

The role of Redox Signaling Molecules in cellular health is simple in concept but profound in benefit. It is the closest thing to an actual *Fountain of Youth* that we are likely to see in our lifetime.

*Redox Signaling Molecule* science is the future of foundational health, regenerative youth, and natural health enhancement.

Sincerely,  
Aaron Murakami, B.S.N.H.

# 1

## Redox Signaling Molecules

Please study the simple diagram below showing *Redox Signaling Molecules*:

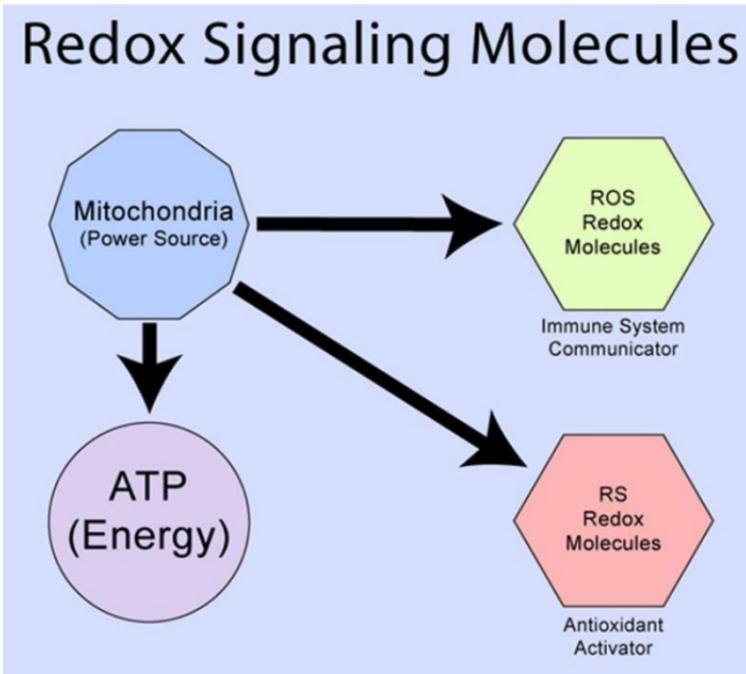


FIG 1.1

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 or adenosine

triphosphate.

Without a College Degree in Biochemistry, that probably doesn't mean much. So, let's start at the beginning with an explanation of why this is so important.

Mitochondria are specialized structures in your cells known as *organelles* and they even have their own DNA! They are in every cell of the body except for red blood cells. Some cells have single mitochondria while others have thousands.

Mitochondria are most commonly known for their ATP production. So what is ATP? ATP is "adenosine triphosphate". It is the main energy molecule 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 sugar called ribose and an adenine molecule. That composes the engine. The fuel is one of the three phosphate 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, a popular sports supplement, they experience longer endurance. This happens because creatine provides the body with a supply of 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.

You have probably heard of DNA and RNA. 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.

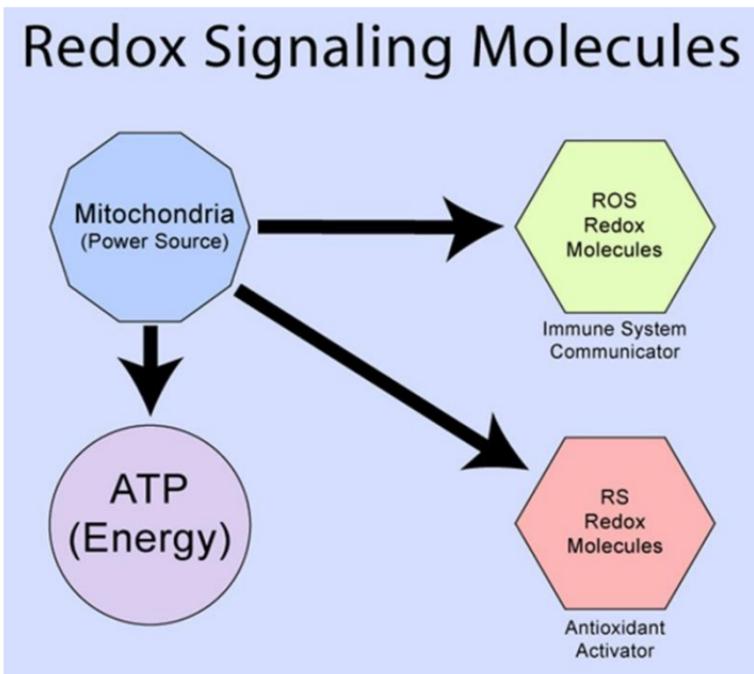
RNA is a nucleic acid connected to a standard ribose molecule, whereas DNA is a nucleic acid connected to a ribose molecule that has had an oxygen atom removed; hence the prefix (de-oxy)ribonucleic acid.

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* at the exact same time!

So, let's look at the 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 “cellular waste”. Turns out, they are not waste – they are the *Fountain of Youth!*



## FIG 1.2

From the diagram we can see that the mitochondria produce two different kinds of *Redox Signaling Molecules* while it simultaneously produces ATP.

Some of these are RS Molecules or *Reduced Species* and some are ROS Molecules or *Reactive Oxygen Species*. Collectively, these 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 have an OXYGEN atom that contributes to some reaction in the body. The word *species* refers to the fact that there are a number of different types of these molecules. ROS Molecules support and trigger the immune system to do its job. Without enough of these molecules, our immune system is compromised.

RS Molecules perform a different function. RS stands for *Reduced Species*. These are molecules that *activate* antioxidants such as glutathione or superoxide dismutase (SOD) so they can neutralize oxidation. Without the RS Molecules, antioxidants are useless. Please take note that these RS Molecules are *not* antioxidants in and of themselves. Instead, they are needed to activate antioxidants so they can prevent and reverse harmful oxidation in the body.

There is a good chance that this may be the first time that you have ever heard that antioxidants even need these molecules to be activated to begin with!

For the whole system to work effectively, both molecules are needed to maintain balance. The mitochondria produce many types of Redox Signaling Molecules in both the ROS and RS categories. Together, these molecules regulate oxidative reactions and facilitate cellular communication, repair and regeneration.

## 2

# RS Redox Molecules The Antioxidant Activators

The RS molecules account for half of the redox signaling molecules that the mitochondria produce. These molecules activate antioxidants so they can actually do their job. The antioxidants can then neutralize *free radicals*. But this goes much further than what the whole antioxidant mechanism is about.

The term "free radical" isn't a reference to a hippie activist from the 1960's; it's a chemical term that refers to an oxidizer – something that can cause oxidative stress in the body. A free radical is generally considered a molecule that has an electro-positive condition. In its attempt to come to an electrically neutral state, it must acquire an electron, which is negatively charged, from something else in the environment.

For example, you may have a perfectly healthy piece of 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 or balance, and this

includes molecules, atoms and even subatomic particles.

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, the mitochondria should be able to produce enough RS molecules, which can activate nearby antioxidants, which in turn can provide the electron transfer necessary to prevent oxidative damage to healthy tissue.

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

There are many supplements, juices and other health related products that are promoted as good sources of antioxidants. Many of these products show health benefits to some degree.

As the proprietor of a Nutrition store, my job was to know the benefits of hundreds of these products. In order to understand how these products work, let's explore some antioxidants for just a moment. These antioxidants are *not* in and of themselves *Redox Signaling Molecules*.

The most common antioxidant vitamins and minerals are A, C, E, Zinc and Selenium. There are others, but these are the most popular.

Vitamin C is a great antioxidant, as well

as a nutrient that promotes strong connective tissue amongst countless other benefits. Vitamin C, in the form of ascorbic acid, is a molecule. Magnesium Ascorbate is a different form of Vitamin C. It is an even larger molecule than ascorbic acid, but it is also easier for the body to absorb, since it is bound to a mineral, which is what the small intestines need to grab a hold of in order to pull it across into the blood.

Vitamin C can neutralize a free radical, or oxidizer, 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 a mild 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 – just a lesser or weaker evil.

When oxygen and iron come together, they form iron oxide, which is generally referred to as "rust". The damage that a free radical can cause in the body is sometimes referred to as *cellular rust*, because it is a biochemical, oxidative by-product of what you originally had in the cell.

There are many kinds of antioxidant products on the market today, including mangosteen, goji berry, acai, noni, and others.

The manufacturers of these products

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

Every company is very proud of their ORAC value, and they should be proud of that. After all, antioxidants are very important!

However, whether the ORAC value is 25,000 or 50,000 or even 100,000 – it is all completely *irrelevant*. What you're about to learn can and will upset many so-called health gurus and companies that have been beating the high ORAC antioxidant drum.

The body can only use a certain level of these antioxidants, no matter how high the ORAC value is. Anything above this level goes to waste, as a matter of scientific fact.

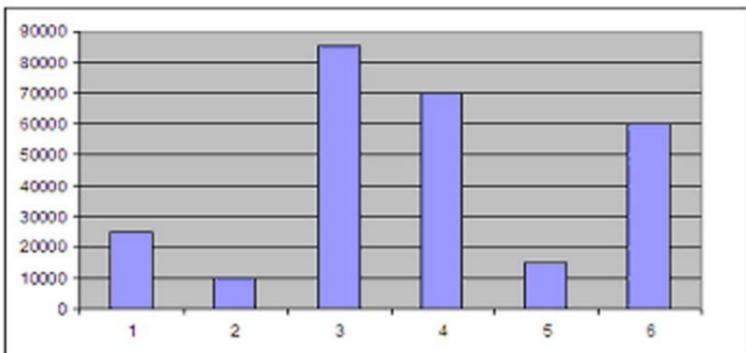


FIG 2.1

Figure 2.1 above shows a random sample of some ORAC claims by various antioxidant manufacturers. In this example, column 2 is the "weakest" and column 3 is obviously the "strongest". If anyone were asked what product was the "best", most would answer #3.

Now, take a look at the next image:



FIG 2.2

This image illustrates the point. The area depicted within the green circle represents the actual amount of antioxidants your body is able to utilize. Why? Remember when you learned that antioxidants actually had to be activated? Well, your body can only produce a certain number of RS molecules, which are needed to activate the antioxidants.

What you see in the red circle is what is wasted, which is most of it! This means that since these levels of antioxidants are not used by the body, one might as well take a lower ORAC value antioxidant to get the same benefit, but at

a much lower cost.

As a matter of fact, it has been said that you buy some inexpensive organic cranberry juice for example and get as much antioxidant benefit as you can get from some exotic fruit juice that will cost you a fortune.

Now to be fair, some of these juices or other dietary supplements could possibly increase ATP production, which in turn would boost a proportional amount of RS type Redox Signaling Molecules and make them available. And some of these juices and supplements have a wide spectrum of trace nutrients that most people aren't getting elsewhere.

However, your body's ability to use antioxidants is still limited to the amount of redox signaling molecules that your mitochondria can produce.

Some examples of supplements that can indirectly boost our naturally produced redox signaling molecules by boosting ATP production include d-ribose & creatine monohydrate, tongkat ali (LJ100™), cordyceps mushroom, various rice extracts and others.

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.

There is also another issue. As you age,

your cells produce less ATP and less redox signaling molecules.

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%.

Why 10%? Because by the age of 70, about 90% of your cell's mitochondria have become damaged by oxidative stress themselves in addition to other oxidative damage throughout the body!

This is the primary reason your cells are producing only about 10% of the *redox signaling molecules* necessary for your cells to function correctly. This is what limits the supply of RS Molecules that are needed to activate the antioxidants your body is trying to utilize.

After all, there is a *finite supply* of the redox signaling molecules to go around and they are produced in a *balance*.

The ROS and RS molecules are in proportion to each other and when you give the body a lot of external (exogenous) antioxidants, they will utilize the RS molecules we produce in order to activate themselves quite possibly throwing that delicate balance way out of whack.

So, no matter how many supplements someone takes to boost ATP production, which will boost the amount of redox signaling

molecules proportionately, it is still going to be limited to the number of functioning mitochondria that someone has.

It is the author's opinion that whatever benefits people may get from ingesting high ORAC antioxidants are primarily derived from the nutrients and trace elements that are lacking in most people's diets and not from the antioxidants themselves.

There are even companies trying to jump on the *redox signaling molecules* bandwagon by claiming their supplement boosts redox signaling molecules. Although this may be true, those substances would still have to be digested and metabolized, which means that their effectiveness will still be dependent upon the cellular efficiency they are trying to improve.

Those types of products will never be able to compare to directly giving the body the actual redox signaling molecules themselves that are responsible for cellular efficiency.

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

An antioxidant from an external source (exogenous) can only neutralize *one* free radical before it becomes a free radical itself – just a weaker one or a lesser evil if you will.

But there is another type of antioxidant other than the ones in the foods you eat. These

antioxidants are actually manufactured by your own body. These substances are Glutathione and Super Oxide Dismutase (SOD). These two compounds, working together with Catalase, a powerful enzyme, can neutralize *thousands* of free radicals before becoming ineffective!

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 ones produced by your body can neutralize *tens of thousands* (about 70,000) – which do you prefer?

Glutathione is not just an amazing antioxidant; it is arguably 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. Glutathione supplements are popular but the bad news is, the stomach acid destroys most of it. So, your own naturally produced Glutathione is best.

Another amazing antioxidant that the body produces is SOD (superoxide dismutase). Depending on the source you read, SOD can be considered the number one antioxidant the body produces. It converts some super oxides such as certain forms of oxygen into stable oxygen and peroxide.

Many customers at my health food store

requested SOD as the best of all antioxidants. However, most of the benefit is destroyed when the ingestible form of SOD is neutralized in the stomach acid, just like Glutathione.

So, antioxidants are incredibly important, but the most powerful ones are actually manufactured inside your body. And even these appear to be completely inert until activated by the RS redox signaling molecules made by your cell's mitochondria.

In the next chapter, I'll discuss the ROS or Reactive Oxygen Species of redox signaling molecules, and afterward, you'll see how it all ties together!

### 3

## ROS Redox Molecules Immune System Signaler

Now that we have talked a bit about the antioxidants that neutralize free radicals, let's talk about the other side of the equation, the Reactive Oxygen group. In a certain sense, these are free radicals also, but they are the GOOD kind! And YES, there is a good kind.

Sometimes, oxygen is referred to as the "necessary evil". That is because oxygen plays a dual role. First, we'd be dead without it. Second, we'd also be dead if oxidation processes continued without limits. So, we live in this middle zone. Without careful control of oxidation in the body, we'd just burn up. When oxidation gets a little bit out of control, it's called oxidative stress.

The balanced set of Redox Signaling Molecules controls cellular oxidation, promoting it where it is needed and preventing it where it is not. It's like in our home. We want to be able to cook food on the stove in the kitchen, but we don't want to set fire to the furniture in the living room.

So let's discuss oxidation. When the body

wants to oxidize something, it wants to do it quickly and efficiently. That is where these ROS *Reactive Oxygen Species* molecules come into play.

ROS molecules are composed of a variety of oxygen related molecules. These may be hydrogen peroxide ( $H_2O_2$ ), ozone ( $O_3$ ) or others molecules. Yes, our cells do produce ozone and hydrogen peroxide in small amounts, when needed.

These ROS molecules support the immune system to get rid of nasty little things in the body that shouldn't be there. Without these molecules, the cells have no communication method to tell the immune system to do its job.

Dr. Otto Warburg received a Nobel Prize in 1931. He discovered that any cell that is deprived of oxygen turns anaerobic and starts to ferment sugar to produce energy instead of breathing oxygen. Those cells that have converted to an anaerobic metabolism can cause significant problems in the body. But he also discovered that if those anaerobic cells were super oxygenated, they would revert back into healthy aerobic cells.

Later on, Johanna Budwig found that there was more to Otto Warburg's discovery and it dealt with the role that fatty acids play in various oxygen metabolic pathways. [It is interesting to note that fatty acids are a choice

food for mitochondria.]

There are many oxygen therapies and supplements that are supposed to increase the oxygen level in the blood. This is claimed to increase alertness, boost the immune system, as well as other benefits.

Our blood is usually *close to* 100% saturated with oxygen, so skeptics think that having more oxygen available can't make much of a difference. But this thinking assumes that the blood is the only place in the body that oxygen can be stored or transported.

Oxygen is extremely important to how the immune system works. One of these processes involves our immune cell's ability to emit reactive oxygen molecules toward a targeted intruder, through a process known as the "respiratory burst" or "oxidative burst".

But these ROS molecules primarily act as immune system communicators, because an over abundance of these molecules in any location signals a condition called "oxidative stress". Oxidative stress tells the cell that damage is occurring somewhere, and initiates about a dozen specific activities, regulated by the DNA, to begin the repair process. If these repair processes resolve the oxidative condition, then the cell returns to normal activity.

But if the oxidative stress condition continues or worsens, the DNA triggers another

process, called "apoptosis", which regulates the orderly death of the cell. The truth is, each one of our 75 trillion cells is pre-programmed to "self-terminate" unless that set of instructions is inhibited. When the DNA determines that the cell damage cannot be corrected, it stops sending the instructions to inhibit cell death, and apoptosis proceeds. More than 50 billion cells die this way, each day, in a normal, healthy adult.

Once the damaged cells are terminated, they must also be disassembled, removed, and replaced before the tissue can return to normal operation. This entire sequence of activity is initiated and communicated by these amazing signaling messengers of the immune system.

This cellular "detect, repair, and replace" mechanism, when functioning properly, is what keeps our cells healthy and functioning normally. To be able to aid this process, by having enough redox signaling molecules in our body, is not only like having a second immune system, it is like having a drink from the *Fountain of Youth*.

# 4

## The Redox Secret

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

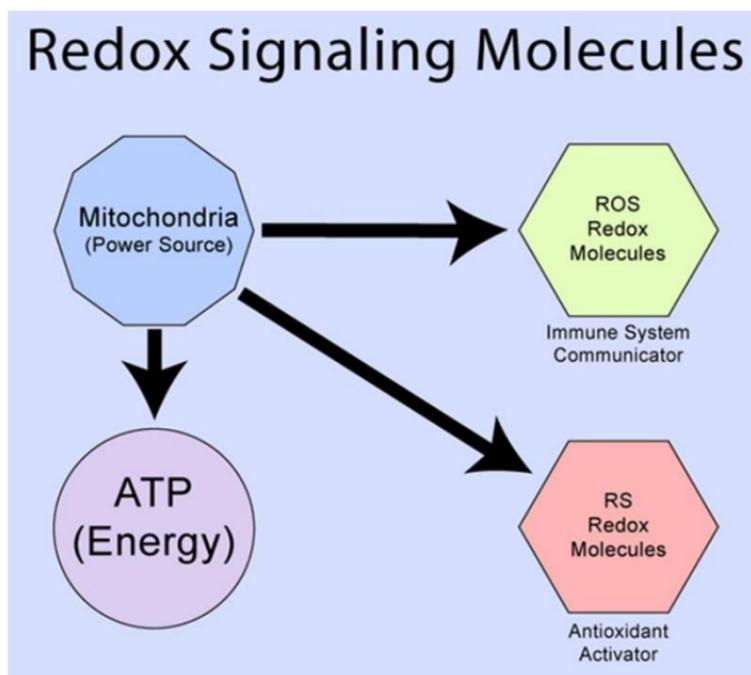


FIG 4.1

Here is the kicker – many products available today focus on the antioxidants, which are **ACTIVATED** by the RS molecules.

Unfortunately, the manufacturers of these products don't tell you that most of their product is useless, because your body will never produce enough RS molecules to use them. On top of that, you've never seen an RS molecule supplement offered that would allow antioxidants to work better.

Then, there are many other products that focus on the oxidizers, such as hydrogen peroxide or certain chlorine derivatives, such as chlorine dioxide. These so-called "oxygen therapies" can be helpful, but can also increase oxidative stress in the body if they are not balanced with sufficient antioxidants and RS molecules.

The whole **SECRET** to cellular health is that both the oxidizers and the anti-oxidizers are needed; and they are needed in balance with each other!

What if you had *both* the RS and ROS molecules in one simple, drinkable solution? That would be like having your cake and eating it too!

If the body isn't creating enough redox signaling molecules on its own, due to the mitochondria becoming damaged over time, then the obvious solution is to supplement the redox signaling molecules *from outside of the body*.

**Believe it or not, for the first time in history, such a redox signaling molecule**

## **supplement is finally being made available to the public!**

But first take notice that for a supplement such as this to actually be legitimate and work, both the RS and ROS molecules would need to be present in balanced quantities, and further, need to meet the following criteria:

1. The Redox Signaling Molecules would need to be in a high enough abundance, above what the body could produce, so that they could activate more antioxidants, and increase cellular communication in a noticeable manner.
2. The Redox Signaling Molecules would need to be produced in a way that has been considered impossible. This means that when the RS and ROS molecules are together, in one solution, they do not simply neutralize each other in the bottle. This equates to product "stability". The product would need to be stable in the bottle, and at the same time, each of the separate molecules would need to remain "bio-active" after being consumed.
3. The Redox Signaling Molecules would have to help increase and accelerate the body's own production of natural antioxidants, such as Glutathione, SOD and even catalase, which is an enzyme

that splits peroxides into hydrogen and oxygen.

4. The Redox Signaling Molecules would need to assist the immune system to detect oxidative damage and then repair or replace the damaged cells.
5. The Redox Signaling Molecules would have to be IDENTICAL to the form that the mitochondria produce! Since redox signaling molecules are native to the body, any product that supplemented them would have to be the same.
6. The Redox Signaling Molecules would have to be **100% non-toxic**, which they would be if they were in the same form as what the body produces.

*Putting both RS and ROS molecules in one container and have them be stable... THAT IS the most important breakthrough in the health sciences in our lifetime, and it appears that many scientists are in agreement.*

This is a new health revolution, in and of itself. Redox signaling molecules are completely foundational to cellular repair and regeneration. They're a veritable *Fountain of Youth* – literally!

You may recall that the subtitle of this book referred to redox molecules as a "biological

source code". Here is why - most substances we ingest are made of complex chemical compounds that our bodies have to "digest". They act like a compiled computer program.

You eat them and your body has to decompile them, literally break them down into a form that it can communicate with at the cellular level. Oftentimes, they have to be broken down and then reattached to other things to make them "bio-available".

But – WHAT IF... there was something that was already available in a form that the body did not have to break down, but was in a form that the body already made on its own, and we're just giving it a bigger supply of it? Would that make a difference? *Of course* it would! Hence the earlier reference to Redox Signaling Molecules as being NATIVE to the body, rather than merely "all natural".

Remember the six points that Redox Signaling Molecules *must* adhere to in order to be legitimate?

That is like getting a biochemical source code that the body does not have to decompile or deconstruct. It is about absorption and not digestion. You just give it to the body and it is already speaking that biochemical language! The body already knows exactly what to do.

If the profundity of this is truly comprehended, you will not only see but will

feel what the excitement is all about.

We're going to take a brief look at the brain and nervous system connection with regard to redox signaling molecules since this is of vital importance.

## 5

# 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? You probably have not heard this from *any* of them.

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 oxidative 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 desired and appreciated! Experiencing an increase in mental agility and memory is always welcome.

Even the *ideomotor effect* can become more accurate for anyone that does any form of intuitive work. 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, 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 are for you.

These molecules should be on the top shelf of the arsenal of every martial artist, energy practitioner or mind power enthusiast beyond a shadow of a doubt. Now, what about athletes?

## 6

# Athletic Secret

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 and the heart rate is being measured.

A part of this test is known as the VT (Ventilatory Threshold) and VO<sub>2</sub> Max.

When someone is exerting himself or herself, 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 *thirteen* 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 Ventilatory 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 regurgitate or pass out, they hit their VO<sub>2</sub> Max.

Simply, the aerobic state is from the start up to the anaerobic transition point or VT point. From the VT point to the VO<sub>2</sub> 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 time 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%! Some athletes have increased the time that it takes to hit the VT by over a staggering 20%, which is completely unheard of.

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

If someone were to follow a triathlon-training program for six 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 3-4%.

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%!

Here is this profound fact spelled out in no uncertain terms – the benefits from the redox signaling molecules beat illegal doping drugs by 300-400%!

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

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% or more, 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. According to Lance Armstrong, the

difference between winning 1<sup>st</sup> place or winning 50<sup>th</sup> place is a VO2 Max capacity difference of UNDER 2%!

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

Here is a big part of the *Athletic Secret* that only these molecules have been known to accomplish:

A study supervised by Dr. David C. Nieman, DrPH, FACSM at the Human Performance Laboratory at Appalachian State University found that athletes that drank these molecules experienced massive free-fatty acid mobilization in the blood BEFORE they even started to exercise.

The study included 20 fit athletes in a randomized, double-blind, placebo-based, cross-over study.

Normally, this level of freed up fatty acids are not found until the athletes have already been engaged in heavy exercise for a while.

What this means is that these fatty acids can be used as a fuel source right from the beginning of exercise or any type of competitive performance. This is vitally important in regards to *glycogen sparing*, which is the goal of any athlete.

Glycogen sparing refers to using non-carbohydrate sources for energy during a workout so that it takes much longer before

glycogen in the muscles is used. When muscle glycogen can be preserved for a much longer period of time, the body is forced to burn fat as energy, which gives the athlete a superior advantage at the beginning of any race, game or other physical undertaking.

Not only does the athlete have the advantage in the beginning, but the advantage is still there in the later stages. The muscle glycogen is there waiting to be used as energy when athletes who are not benefitting from redox signaling molecules have already been using their muscle glycogen from the beginning!

According to Dr. Nieman, *"We have rarely seen such a drastic difference. For 43 of those signals to change, that is a quarter of the metabolite profile that we are monitoring. It is a huge bump in metabolite shifts that are due to the ingestion of just one product,"*

*"Athletes actually started the exercise after drinking (redox signaling molecules) with a lot more of these free-fatty acids in their blood. The reason that is important is that the muscles will actually use that as fuel, sparing the muscle glycogen and the use of amino acids which is what we found as we analyzed the data,"*

*"Every understanding from the literature is that these probably came from the fat stores in the abdominal area,"*

*"So if you drink (redox signaling molecules) we found that the fats go up in the blood. If you're not exercising, those fats will still be used to support the body's metabolism for life."*

It should be obvious to the reader that exercise is of course a proven way to lose weight but the ultimate appears to be combining an exercise program with redox signaling molecules. This accomplishes at an energetic level what no weight loss program has ever done.

Since adipose tissue has the highest concentration of these fatty acids and the abdominal area has the most reserves, this appears to be the most effective way to burn belly fat that is known to the health sciences.

This study also demonstrated that there are massive increases in the levels of ascorbic acid (Vitamin C) after exercise. This seems to suggest that there may be less oxidative stress on the muscles. There is more research being done on this to more fully understand the implications.

Here are some comments from a few professional athletes:

*"I've experienced all these tremendous benefits over the last few years when I'm doing all these world records, and maybe didn't understand it... With this*

*new study it's really helped me understand why I don't get sore, and why I'm able to just lock in this strong pace and hold it for so long."* - **James Lawrence, World Record, Most Triathlons 70.3 races**

*"My thoughts on the study are that I kind of already knew this through my own experience with the product. But at the same time it's great to have that solid evidence that laboratory test make official. That gives it that official stamp of approval from the scientists and then the stamp of approval from lead athletes."* - **Cody Waite, Professional Xterra Triathlete**

*"With (redox signaling molecules) I've noticed that my times and my meets have improved significantly. Learning about the research behind (redox signaling molecules) boosts my confidence and reinforces what I already know."* - **Diana MacManus, Three-Time National Swimming Champion**

It is in the author's opinion that not using these 100% non-toxic redox signaling molecules, which are approved for competitive use 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 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 benefiting from the redox signaling molecules?

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.

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!

It is a myth that lactic acid is what makes muscles sore. That is actually a protective mechanism. The pain actually comes from hydrogen proton loading in the muscles. That is positively charged hydrogen and the redox signaling molecules actually reverse this process as it occurs, which prevents most of the muscle pain from happening in the first place.

Some of the top athletes in the world are getting in trouble because of the illegal drugs – if they were using the redox signaling molecules,

they would be safely winning in an approved way – what is that worth to an athlete?

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. When you combine them, you are able to advance the potential of your body to new levels that have never before been accomplished!

## Public Availability

Redox signaling molecules are 100% non-toxic to people and are also safe and beneficial for pets and plants. These molecules come in a liquid form and are easily drinkable and you can actually get your hands on this *Fountain of Youth* right now.

Most people get tremendous benefit from only a few ounces per day and many people get results so powerful that the law will not permit them to be discussed in this book.

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 else 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. It is also available in 8 ounce sports packs.

**To get some, contact the person that referred you. If you don't know who, email Aaron at [info@biotechsecret.com](mailto:info@biotechsecret.com) or call (509) 879-1813 to find out. <http://biotechsecrets.com>**

## 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!

# Aaron Murakami'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 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 80,000 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 and video packages from Aaron Murakami can be found at <http://whitedragonpress.com>

