

## First in the World to Establish Quantitative Limitation of Human Saliva ORP

In order to perceive the condition of the body, it has now become the age where people do not accept it unless it is proven by quantitative values.

We have acquired a patent from Japan and U.S.A. (U.S.A. acknowledged the correlation of quantitative values to disease names.) The Ministry of Health, Labor and Welfare of Japan did not acknowledge specifying of the quantitative values to disease names but has certified our ORP device as a medical device exclusively for saliva measurement that measures according to the quantitative limitations of the wellness index.

In order to increase the statistical reliability of quantitative index of the human saliva ORP, the authors, Mieko Okazawa, M.D. and Otomo Yoshitaka have started collecting clinical data of human saliva ORP from October 21, 1996, and continuing to the present day. As of April 4, 2014, cumulative total number of cases has reached 8,000.

\*[Graph 4] First in the world to quantify the wellness index of human saliva ORP.

(Publishing Source: 9th General Meeting of Japanese Society of Anti-Aging Medicine, May, 2009, "Saliva ORP and Wellness Index", from the research and poster presentation by Yoshitaka Otomo.

### Quantification of Wellness Using Saliva ORP

<h4 style="margin: 0;">Oxidative</h4> <p style="margin: 0; font-size: small;">Oxidation of body indicates a poor physical condition. It means overwork, stress and aging.</p>	<h4 style="margin: 0;">Reductive</h4> <p style="margin: 0; font-size: small;">Reduction of body indicates a good physical condition. It means relief of fatigue and stress and stronger immune system.</p>
---	--

ORP Voltage (mV)	Physical Condition	State of Oxidation-Reduction	
<b>mV</b>	<b>Oxidative</b>		
+300	Outside of healthy level group	Extremely Oxidative	
+180			
+160			
+140			
+120			
+100	Bordering healthy level group	Oxidative	
+80	Borderline		
+60			
+50			
+40	Healthy level group	Fairly Reductive	
+30		Reductive	
±0			
-20			
-40			
-60		Very Reductive	
-80			
-100			
-120		Fully healthy level group	
-140			Extremely Reductive
-160			
-180			
<b>mV</b>	<b>Reductive</b>		

Also, if we add the ratified clinical data that were collected by Hiroko Yazaki, M.D., an internist, who has supported the measurements of human saliva at three locations, we have now data from over 13,000 cases as of April 15, 2014.

For the quantification of human saliva ORP, we have been continuing to acquire as much clinical data as we can with the high hurdle of minimum critical difference of  $p < 0.01$ .

It was not just the p-value, but we have been looking at the statistical hypothesis testing, which uses the calculation called algorithm to determine statistically and stochastically whether the hypothesis in question is true or not. Discussion of this aspect will be in Chapter 8 Quantification of Natural Phenomenon under the subtitle, "The objective Methods to Quantitatively Substantiate Various Phenomena By Using Human Saliva ORP Measuring Procedure"

As the Oxidation and Reduction Potential (ORP) value becomes more on the negative (-) side, it indicates that the reduction of the saliva is getting stronger and the body is in good condition, and, as the ORP value becomes more on the positive (+) side, the oxidation is stronger, and it indicates that the body condition is leaning towards the conditions with inflammation, overstrain, stress and aging factors.

## There is Commonality Among the People Who Come to the Clinic for Disease Treatments

The common factors among the people who have disease or have bad body condition have emerged to the surface.

That is, they all have high oxidation of saliva. I think it's easier to see that if you look at the graph in the previous page; positive (+) 40~50mV is the borderline zone where the saliva turns from reductive to oxidative and if it keeps on oxidizing, it has a possibility of getting bad body condition.

I will explain later in detail about oxidation but oxidation means that something is rotting or is aging by the oxygen in the air.

It means that the same phenomenon when metal and nails get rusted is happening in our body.

Nowadays, we talk about things that are "antioxidant" as method of anti-aging<sup>5</sup> (life extension medicine), but oxidation exactly means that the body is aging.

The oxidation of saliva, explained in a simply way, means that there are more than necessary amount of reactive oxygen (free radicals) produced in our body that can cause oxidation.

And for that reason, you can say that, more the saliva gets oxidized, more the positive potential value increases and the body is in the state of oxidation and the body's health condition isn't good.

\*5—Anti-aging is one of the categories of life extension medicine and proactive preventive medicine and it is a general term to describe the prevention of aging. Foundationally, it includes laboratory diagnosis and conventional medicine. It spans from all of the general categories of medical treatments, to such areas as, kinesiology, dietetics and oriental medicine, cosmetic surgery, cosmetic dermatology, esthetics, aromatherapy, herbs, dietary supplements, alternative medicine and music and art. (Cited from Wikipedia, free encyclopedia, Japanese language)

Even though the symptom of disease is not showing or the person may look healthy, the fact that the body is oxidizing means that in the near future, the possibility of getting some kind of disease is very strong.

## Introducing Six Effects of Saliva That Protect the Intraoral Health

---

There are roughly six effects of saliva that adjust the environment inside the mouth.

### ① Dissolving Action

Promotes the sense of taste by dissolving sweet and sour taste substances. We are able to know the taste and flavor of the food by this effect.

### ② Cleansing Action

Saliva washes away the leftovers of food, and fulfills the role of removal of bad breath and disinfection.

### ③ Anti-bacterial Action

Substances such as lysozyme, peroxidase, lactoferrin and histamine resist against the pathogens that enter into the mouth through breathing.

### ④ PH Buffering Action

Saliva controls the growth and reduction of intraoral bacteria to be at the proper level by checking and keeping the acidity, neutrality and alkalinity of the mouth by the concentration value of PH [hydrogen ion (H<sup>+</sup>)] inside the mouth.

### ⑤ Protective Action

Saliva can form surface coating on teeth to protect them from the streptococcus mutans that causes dental caries. You can say that the people who secrete more saliva are harder to get cavities.

### ⑥ Lubrication Action

Saliva, when pronouncing words, works like lubricating oil on tongue and teeth and on mucous membrane inside the mouth so that pronunciation of words and conversation will be smooth.

Included also in saliva is a substance, very similar to thromboplastin, which is present on the wall and platelet of blood vessel, to give hemostatic action that has blood coagulation factor.

Also, we know that the open wound can close faster when we apply some saliva on it because there is EGF (epidermal growth factor) in saliva. EGF (epidermal growth factor) is a type of protein that Dr. Stanley Cohen of America has discovered and it can be found in anyone's body.

But as you get older, EGF secretion diminishes, so in order to replenish EGF, cosmetics are being researched and developed in Europe and United States that can stimulate new skin cells.

As you can see, saliva has excellent effects that protect us from bacteria and stop bleeding to accelerate the healing of wounds. When you accidentally cut your finger or slipped and bruise, many of you probably licked the finger that was cut or heard someone say that it will be healed if you just put some saliva on it.

It is this saliva, that we are swallowing all the time without even thinking about it and is treated as nuisance and get sucked away during dental treatments. But this saliva, in our daily life, contributes in leading our body to good condition in a big way and probably not known by many people.

## The Objective of Oxidation/Reduction Potential (ORP) Measurement of Saliva

---

At my Okazawa Clinic of Internal Medicine and Pediatrics, since we have brought in Asai Organic Germanium treatment as part of alternative medicine,<sup>6</sup> the categories of diseases that we treat are infectious diseases, endocrine nutrition and metabolism diseases, diseases of circulatory system, respiratory system diseases, digestive system diseases, skin tissue and hypodermis diseases, systemic diseases conditions and signs, immunization for infants, periodic health counseling for the patients and the escorting healthy person, health counseling of patients from a wide range of infants to elderly, ranging from 0 year-old child to 90 years-old. This is the reason why we were able to establish the quantitative limitations of oxidative/reductive condition of human saliva from the ORP data and verifications we have acquired from the 8,000 cases.

Up to now, only specialized agencies were able to check the presence of disease from saliva. But a new saliva measuring machine and method have emerged; one that can be easily be used at home to confirm the wellness of your own body, and even the instability of mind as stress, which will show as oxidative condition.

This is how it works. It measures the oxidation/reduction potential (mV) of the body from the human saliva, and by using quantitative limitations, it can confirm whether the body is leaning towards oxidation (inflammation, overstrain, stress and aging) or leaning towards reduction (body's wellness), under one minute.

We all know what oxidation happens when the surface of a nail becomes reddish brown and get rusted, and when a peeled apple that was left for a while turns brown. These are all "oxidation phenomenon."

When you leave the peeled apple in the air, it becomes brownish and this is called enzymatic browning reaction. In this particular case, it involves polyphenol oxidase, an enzyme. In brief, when catechins become oxidized by polyphenol oxidase, they generate melanin pigments that make the apple into brownish color. This phenomenon also occurs on bananas and sweet potatoes as well.

The women's worst enemies, skin spots and freckles and even wrinkles are caused by the oxidation phenomena. When things get rotten, exhausted or aged from the oxygen in the air, it is called oxidation. The reverse of that is called reduction.

If the condition of reduction can be maintained, the oxidation will stop and therefore it is possible to slow down things to get rotten, impoverished and aged, and because of this, it is possible, to build our body that is youthful that can avert diseases.

\* 6 – Alternative medicine is a general term for the medical treatment that does not come under the area of Western medicine. It can include treatments, such as Traditional Chinese medicine, Oriental medicine ranging from acupuncture and moxibustion to aromatherapy, health foods and food supplements, Ayurveda of Indian medicine, chiropractic, hot-spring therapy. (Cited from the article, alternative medicine, Weblilo Dictionary.)

Have you ever experienced that the air in your environment was refreshed after lightning strikes and heavy rain? This is also the oxidation and reduction reaction of the natural laws.

The atmosphere that was filled with positive ion has now become full of negative ion that was brought about by the natural phenomenon, such as lightning strikes.

In recent years, there are many more localized torrential rain and lightning strikes in the urban areas. This is because the environment beneath is clustered with high-rise buildings made of concrete, and the soil is covered by asphalt. Therefore, it indicates that the nature's resetting ability that cleanses the air is slowly being lost.

Oxidation/reduction reaction is constantly happening in all things, and even human bodies are going through oxidation/reduction every second, every minute and every hour, unceasingly along with the rhythm of the universe.

That is to say, the chemical constituent of the body fluid that is in each of our body parts is affected by oxidation/reduction reaction, and when this balanced condition is disrupted and it becomes oxidative, we recognize as having poor physical condition and become cognizant of the signs of diseases when we have fever and pain.

It is only in the recent years that "oxidation/reduction" is being discussed as an important keyword among various agencies.

The mechanism of body's oxidation as a cause of lifestyle-related disease is gradually being elucidated recently. For an example, even dealing with the lipid oxidation called LDL cholesterol, there are experimental results published to reporting that the hardening of arteries was improved by controlling the oxidative reaction.

Also, it is considered that diseases such as diabetes, certain kind of tumors, Alzheimer's disease and to even rheumatism and arthritis, are caused by oxidation of the body.

## It is Said That the Reason Why Humans Become Oxidized in All the Areas of Food, Clothing and Shelter is Because of Reactive Oxygen

As soon as we are born we humans start breathing the air and we cannot continue to live unless we breathe. The normal oxygen concentration of the air is 21% and this air is the lifeline for the humans.

On the other hand, this same oxygen has the opposite side that has the effect of ruining the human body. However, the oxygen that can make our body oxidized and becomes the cause of diseases is not the ordinary oxygen. Then, what is it? It is the called the reactive oxygen, a substance that has toxicity that attacks the cells of our body.

The oxygen that was taken into the body when we breathe has electrons that are constantly unstable. When this happens, the oxygen molecule robs electrons from other substances inside the body to balance itself, and the substance that was robbed of electron by oxygen will become deteriorated.

But, not all of the reactive oxygen is bad. It's been said that about 2% of the oxygen that we take in will become reactive oxygen. Because this substance has a very strong oxidation power, it provides to us an important purpose to exterminate the pathogens and viruses, and manages the process of synthesizing hormones.

But the problem is when the environmental pollutions and the agricultural chemicals and the chemical substances that are used in food production are taken into our body; our body produces a large amount of reactive oxygen (free radicals) as a result of protecting itself.

For an example, when we eat or do intense exercise, we consume a lot of oxygen, then, the metabolism becomes active and it increases the reactive oxygen (free radicals). We all know that eating too much is not good and the reason for that is because when we eat more, more oxygen will be consumed in order to metabolize the food that we eat, and this makes the body deficient of oxygen and causes oxygen deficiency in the blood, which weakens the function of internal organs and vital biological functions.

The irregular life habits of smoking and excessive drinking and eating, and the life style of accumulating stress can damage the brain and the cells of our body. We are beginning to understand that when the body tries to repair the cells, a large amount of reactive oxygen (free radicals) is generated also and this can even damage the unharmed cells too.

And because of that, in order to prevent the mass generation of reactive oxygen (free radicals), the life habits of eating foods that are anti-oxidative and high reductive action, and controlling overeating and low calorie has been attracting attentions.

But, what is important here is the cultivation method of the ingredients of our food. Dietary education seminars are popular in recently year, but even if you say you don't eat in excess or you have low caloric diet, if you are eating foods that are prepared with ingredients that were cultivated with agricultural chemicals, the body will consequently generate a large amount of reactive oxygen (free radicals). It has been verified by using the human saliva ORP measurements that the condition of the body will turn highly oxidative after consuming such food.

It's not only the food sources that are important but we need to know whether the water and processed beverages that we drink are non-agrochemical/organic and cultivated with low agrochemical products. In the recent years, many stores that specialize in organic vegetables are increasing.

What leads us to a lasting health is first to have a strong interest in choosing the natural food ingredients and to actually practice it.

It has become a medically established theory that 80~90% of the diseases are caused by the mass generation of reactive oxygen (free radicals).

## If You Stop Smoking, the Quality of Your Saliva Will Get Better and You Will Not Be Affected By the Chemicals That Are in the Tobacco

I really feel that tobacco is the first on the list of things that damage our health.

When I talk to the people who say that they cannot stop smoking, most of the time, they will make an excuse, saying that they don't feel guilty because they are paying tobacco tax to the government.

There are also people who say that since they know the condition of their body the best, they can gauge their body's condition depending on how tobacco taste that day.