

EVOLUTIONARY CONCEPT OF SUSTAINBLE HEALTHY-LIVING AND WELL-BEING

What is life? If you ask ten people, there will be ten different answers! One of the justifiable answers may be --- life is reflection of functional activities of all body cells with the changes of stages. Evolution brings changes for adaptation, and it is very slow process. Human life stages of changes are relatively very quick. It has been noticed that microbes start colonizing after the birth of a child and it is being followed as agreed millions of years ago. Research revealed that in evolutionary period there was a commitment between mammal and microbes that—provide shelter and food we will protect host health which host cannot do by themselves. Colonizing in child body cavities particularly in gut in abundant remind the evolutionary commitment. Apparently, we understand that the baby is drinking mother's milk, thus it requires food digestion. and starts living in normal atmosphere, thus it needs immunity protection. There was no clear outline anywhere how microbes provide protection of humans starting from birth. Thus, the trends of research are not very focused.

In contrast, all human desire in life cycle is to be healthy-living and well-being without clear concept of it. According to CDC” Healthy living is an aging process of maintaining good physical and social health with positive attitude that contribute overall well-being; There are many health professionals, government agencies, private sectors have been working day and night, still, sugar metabolism is major cellular dysfunctions in the entire world. Sugar metabolism is very important as it is the major source of cellular energy ATP. According to IDF [International Diabetic Federation] reports showing an increasing trend (2021 to 2045) and top ten countries China being 1st (140 million to 174 million), India being 2nd (74.2 million to 124 million) and USA 5th place (32.2 million to 36.6 million), even Bangladesh holding 8th position [in 2021—13.10 million people and predicting more than double holding 7th position in 2045 ---22.30 million people]. ***Diabetes is a very good example of all body cells dysfunctions in various degrees of impairment pertaining to cellular integrity or modification of its functionality.***

Note: China and India holding positions in diabetics populations suggests that just exercise, taking various herbs and taking vegetables and fruits are not enough to maintain healthy living. The statement from microbes – “we would be able to protect host health which would not be able to do by themselves”. The statement should be more emphasized with clear concept, addressing two biological processes such as restoration of cells from oxidative stress and gut microbe probiotic modulation involvement of fermentation process daily basis.

As it is observed, the entry of microbe in child gut from day one for digestion and immunity, it reminds us to the microbes are in mission to protect human health from day 1 of birth. It is not clearly understood how they would be protecting the host's health. In the face we find microbes involved in digestion and immunity. Both are very complex phenomenon. We also find cellular activities in presence of oxygen and at the same time another process occurrence in the gut without oxygen referred to as FERMENTATION, due to presence of HMO [Human Milk Oligosaccharides] in mother milk, in addition to carbohydrate-fat-protein. HMO is not present in cow-milk.

That means from day one baby's all body cells are involved with cellular respiration and ATP Production and during the interaction 2-3% oxygen molecules are not properly utilized and become an electron un-balanced oxygen molecule which is known as FREE RADICAL, or OXIDANT or SUPEROXIDE [O₂*]. It further converts to Hydrogen Peroxide [H₂O₂], with the primary antioxidant enzyme [same cell produces this] called **SUPEROXIDE DISMUTASE [SOD]**. Hydrogen Peroxide [H₂O₂] is a stable but reactive molecule. It has mild inflammatory property, and this low cellular inflammation is necessary for cellular communication process through signaling also called redox signaling. These are all body cells normal process with oxidant and antioxidant balance, maintain by antioxidant enzyme **SOD**.

It is a fact that microbes are being involved in all the digestive system organs directly and indirectly all are associated with cells for example, producing saliva, acids, enzymes, hormones, peptides, or any biological functions. It is also true that all the systems are not well developed at the time of birth of a child. The growth ratio is maximum in the first one year and during that period microbes involved with body cells to connect all the organs, pathways for example—gut-brain, gut-liver axis, gut-heart axis, gut-mouth axis, and develop immune systems. As the child is getting HMO, researchers have looked at the potential health benefits of Oligosaccharides as prebiotics, including the prevention of infections improvement of cardiometabolic health, increased mineral availability, and modulation of immune systems. Thus, cellular functions are linked with microbes from day one of our life. and how medical science and medical professionals are not attentive to both cells damage due to oxidative stress [OS] [oxidant and antioxidant imbalance] and gut-microbes dysbiosis [imbalance of beneficial microbes].

Thus, the **REVIVIFY concept**, based on the evolutionary principle of healthy living, recognizes the essential role of beneficial microbes and their colonization within the human body. It integrates the preservation of cellular integrity—without the damaging effects of oxidative stress—while also preventing dysbiosis. The patented composition, titled **“Superoxide Dismutase Soluble Fiber Composition,”** is the key innovation behind the **REVIVIFY** brand.

Cellular functional activities as follows (ATP Production, Free Radicals, and ROS):

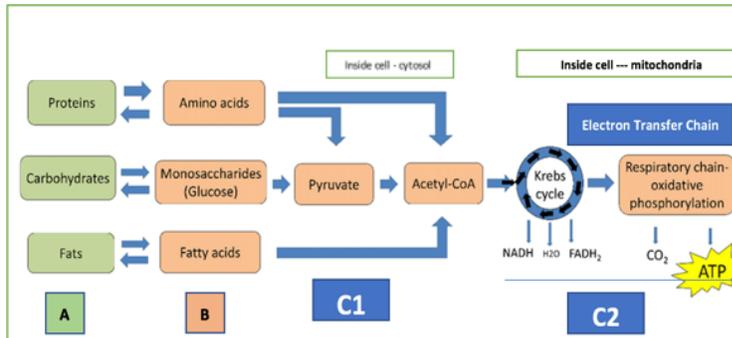


Figure 1

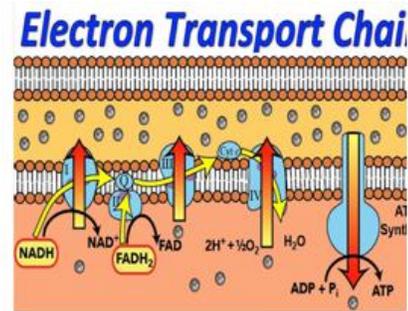


Figure 2

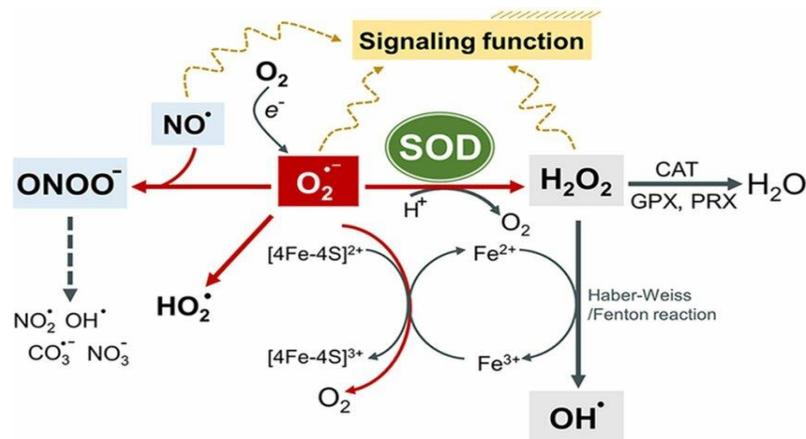


Figure 3

Figure 1 & 2 shows all three foods can produce maximum ATP in electron transfer chain in mitochondria also some steps of transformation including citric acid cycle.

Figure 3: Cellular respiration and ATP production interactions produce unbalanced oxygen molecules (as marked red in the graph) refer as free radical, **superoxide [O₂^{•-}]** or oxidant. This superoxide with SOD produces right cellular biochemical reactions. However, when there is no SOD, the **superoxide [O₂^{•-}]** reacts and produce more toxic ROS (Reactive Oxygen Species) including hydroxyl free radicals which damage the lipid, protein, cholesterol etc. And peroxy-nitrate which destabilizes the vascularity functions of many cells including vascular system, brain cells axion, blood vessels internal protective layer of endothelial cell, heart valve cells, kidney nephron cells etc.

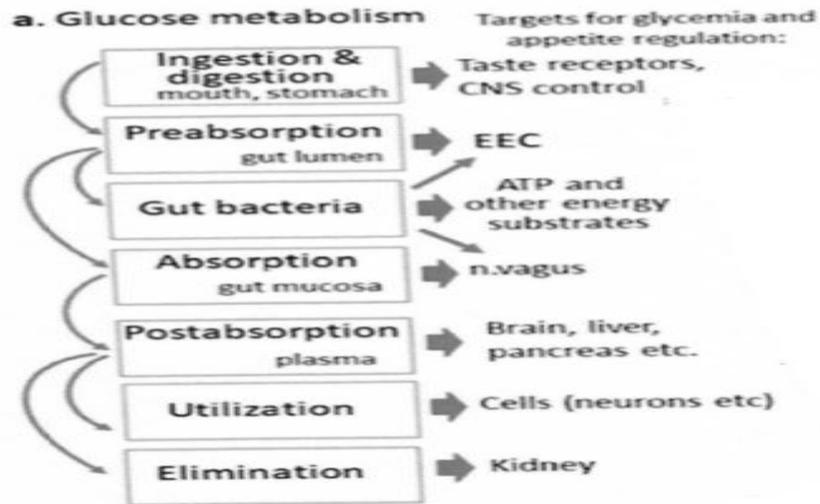


Figure 4

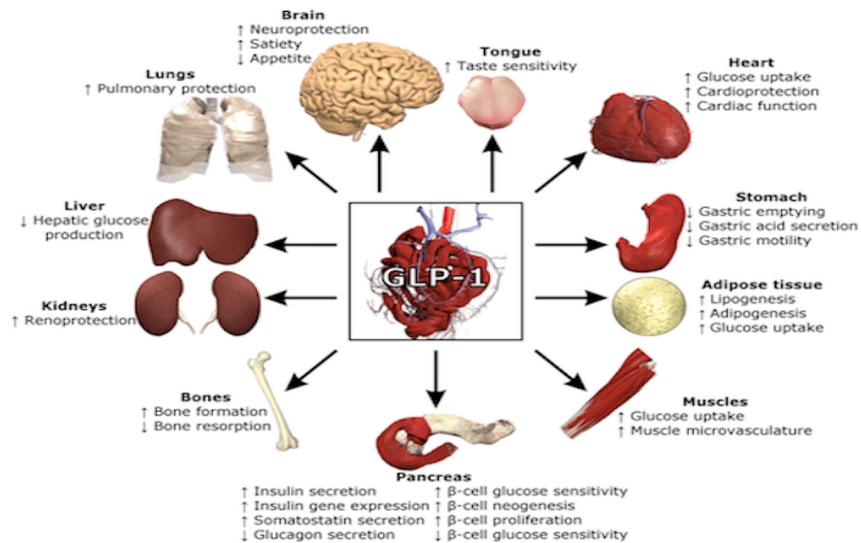


Figure 5

Figure 4: The figure shows Gut Microbes involvement in many phases of digestive organs. EEC (enteroendocrine cells) are specialized hormone secreting cells found in the lining of the Gastrointestinal (GI) tract, from stomach to colon. EECs sense the chemical composition of food (via taste receptors, nutrient transporters, and mechanical stretch sensors) and secrete hormones that, **Regulate Digestion** (slowing or speeding gut motility) **Control Appetite** (sending full or hungry signals to the brain), **Balance Blood Sugar**, and **coordinate with Gut Microbiota**.

Figure 5: Gut Microbes modulating EEC for various metabolism processes including absorption and distribution using GLP-1 peptide and regulate L cells as needed.

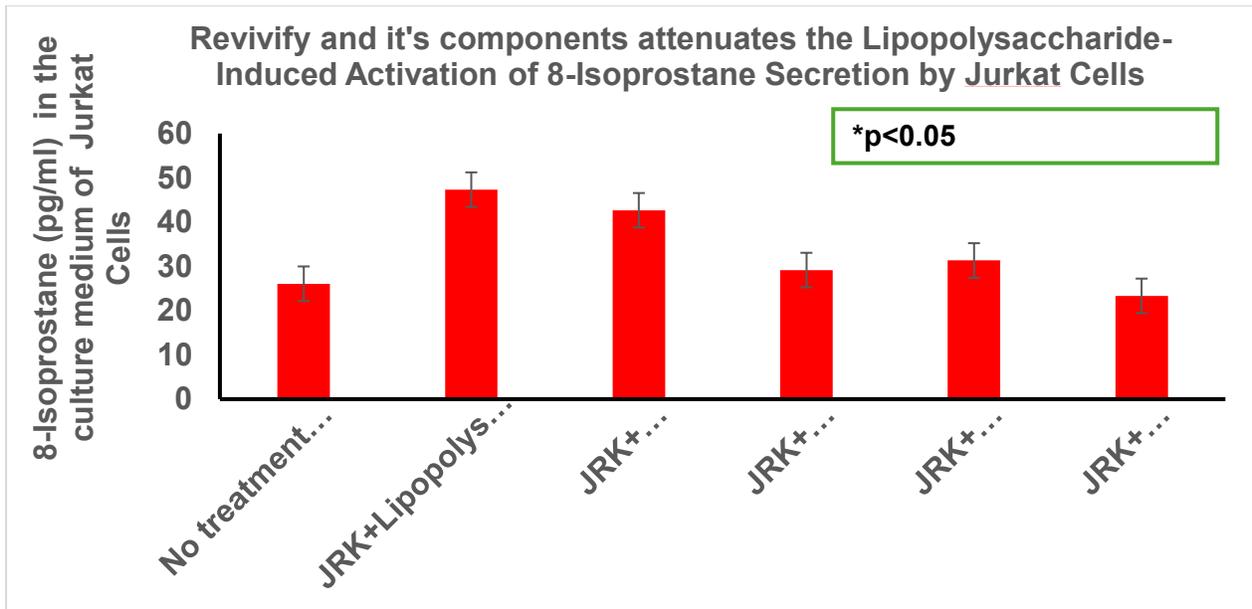


Figure 6

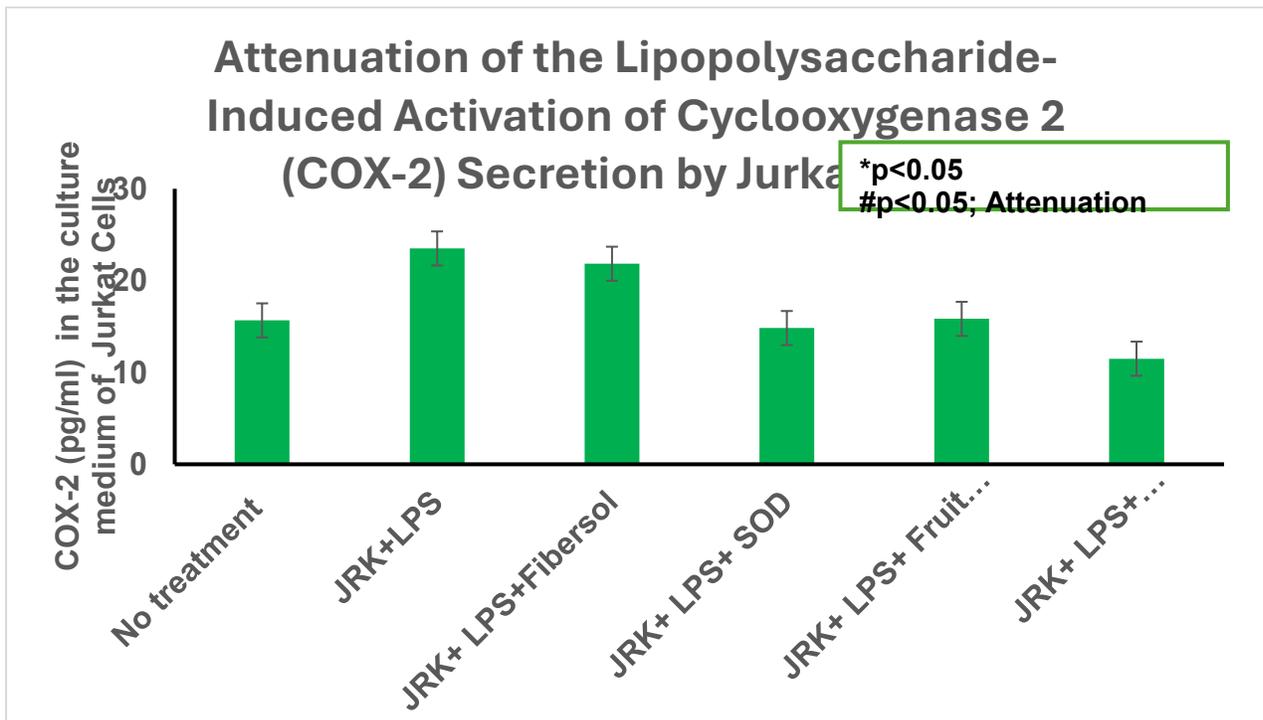


Figure 7

Figure 6 & 7: Out of many studies and evaluations of Revivify, we just added two more live cell culture studies of antioxidants and anti-inflammatory properties attenuation. It's signifying benefits in many diseases.

Disclaimer Statement: Revivify products are considered Dietary Supplements. A Dietary Supplement does not need efficacy to be proven. "Statement in this booklet pages have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.