

## **Asea and the Big Three**

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Asea has been shown in studies to increase the cellular production, bioavailability and utilization of glutathione, superoxide dismutase (SOD) and catalase by over five times. These are all antioxidant enzymes produced naturally within the body. Studies show that as we age the cells produce less of these important enzymes, which then leads to many of the health challenges we experience as we age. Increasing their availability to the cell has vast implications. I would like to share with you my thoughts on what this means to you!

### **Catalase**

Catalase is an antioxidant enzyme that helps the body convert hydrogen peroxide into water and oxygen, thus preventing the formation of carbon dioxide bubbles in the blood! Hydrogen peroxide is a naturally occurring but very destructive waste product of all oxygen-dependent organisms that is produced when fatty acids are converted to energy and also when white blood cells attack and kill bacteria. Catalase is also critical in breaking down potentially harmful toxins such as alcohol, phenol and formaldehyde and helps prevent hydrogen peroxide from converting to the potentially damaging hydroxyl radicals that can attack and mutate DNA.

Catalase works closely with superoxide dismutase (which I'll talk about later in this article) to prevent free radical damage to the body. The SOD converts the dangerous superoxide radical to hydrogen peroxide, and we now know that catalase then turns that into water and oxygen. Catalase has to be one of the most efficient enzymes found in our cells. Every second each catalase enzyme is converting millions of hydrogen peroxide molecules into water and oxygen.

Many people think that graying hair is just a normal sign of aging but research actually shows that it is caused by an excessive buildup of hydrogen peroxide in the body<sup>1</sup>. Hydrogen peroxide interferes with melanin, the pigment that colors our hair and skin. So if you have graying hair you want to *increase* the amount of catalase your cells are producing in order to stay healthy! And Asea will help you do just that!

### **Superoxide Dismutase (SOD)**

Superoxide dismutase is an enzyme that repairs cells and reduces the damage done to them by superoxide, the most common free radical in the body. SOD is found in both the dermis and epidermis and is key to the production of fibroblasts or skin building cells.

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<sup>1</sup> Science News. Science Daily 2009-02-24. See also Hitti M. 2.25.2009. "Why Hair Goes Gray." Health News. Web MD. See also Wood JM, Decker H. February 2009. "Senile Hair Graying..." FASEB J. 23 (7) 2065-75.

Studies have shown that SOD acts as both an antioxidant and an anti-inflammatory in the body. SOD is currently in the spotlight of anti-aging researchers because we know that SOD levels fall off as we age, leading to more wrinkles and to precancerous cell changes.

There are two types of SOD: copper/zinc SOD which protects the cells' cytoplasm and manganese SOD which protects the mitochondria. Each type plays a different role in helping our cells stay healthy.

Many researchers believe that abnormalities in the copper/zinc SOD may contribute to the development of amyotrophic lateral sclerosis (ALS) which is better known as Lou Gehrig's disease. This is because without the SOD these people are not protected from superoxide which destroys their nerve cells. This is a disease which causes a deterioration of motor nerve cells in the brain and spinal cord.

SOD has also been used to treat arthritis, prostate problems, corneal ulcers, burn injuries, inflammatory diseases, inflammatory bowel disease, as well as long-term damage from exposure to smoke and radiation, and even to prevent side effects from cancer drugs. It is also being used to reduce facial wrinkles and scar tissue, heal wounds and burns, lighten dark skin (hyper-pigmentation) and protect skin against harmful UV rays.

SOD is found in most dark green foods such as wheat grass, barley grass, broccoli, cabbage and Brussels sprouts. These green plants also contain enough copper, zinc and manganese for producing SOD in the cells. This is why eating green leafy vegetables is so important for our diets!

### **Glutathione**

In my opinion, glutathione stands head-and-shoulders above all of the other antioxidants. I think of it as the body's "master antioxidant!" Glutathione is fundamental to a wide range of metabolic and regulatory functions throughout the body. Glutathione is a tripeptide created in the body from the amino acids glutamine, cysteine and glycine.

It is not only the body's most important antioxidant but it is known to be one of the best detoxifiers in the body. Most health experts know that healthy levels of glutathione strengthen the body against heavy metal toxins. Glutathione is used to treat lead, mercury, arsenic and cadmium poisoning.

In today's world it is very easy to become depleted in glutathione. Exposure to sunlight, environmental toxins and pollutants, household chemicals, pharmaceutical drug use, recreational drug use, heavy metals, surgery, inflammation, burns, viral or bacterial infections, and intense physical exercise can all diminish the body's glutathione reserves. And of course aging has an effect on these levels as well.

From my research I've learned that a deficiency in glutathione has been linked to a number of diseases including anemia, neuropathy, HIV/AIDS, cirrhosis, hepatitis, COPD, asthma, Crohn's Disease, gastritis, duodenal ulcer, pancreatitis, heart attack, coronary artery disease,

stroke, diabetes, neurodegenerative diseases like Alzheimer's and Parkinson's, cystic fibrosis, cancer, seizure disorders and autism. It protects the skin, the lens of the eyes and the retina from radiation from the sun and is the best detoxifier the body has in its arsenal.

In fact, autism researchers have found that 100% of the kids studied had "unusually low concentration of the antioxidant glutathione in their cells" while none of the normal kids showed this problem.<sup>2</sup> Jill James, director of biochemical genetics at Arkansas Children's Hospital, notes that "This pattern is consistent with an inability to detoxify poisons, especially heavy metals, such as mercury or lead. That's because glutathione normally binds to heavy metals and the body then targets the molecular complex for elimination."

### Summary

Catalase, SOD and glutathione peroxidase are crucial to good human health and also have the potential to increase the human lifespan. These amazing enzymes are very vigilant in protecting our cells from the world we live in and even in protecting us from many of our bad habits. But science shows that as we age our cells' production of these amazing enzymes goes down. That could be caused naturally or perhaps because of our diets and lifestyles. Either way, it has seemed to be inevitable.

The exciting news is that researchers have shown us that we CAN increase the cells' own production and utilization of these three super-antioxidant enzymes by at least 500% by taking Asea. Asea is an all natural product *native* to the body! What I mean by that is that everything inside that bottle of Asea is already found inside of your body and in your cells. Studies show that the product has no toxicity to your cells. In other words, ANY reaction one experiences from taking Asea is caused by cellular detoxification (removal of toxins and metabolic wastes) from the increased production and utilization of SOD, catalase and glutathione and NOT from the product itself! (Decreasing the amount of Asea you take for a short time while increasing the amount of water you drink will help get these wastes out of your body in a comfortable manner.)

I am extremely excited about what Asea can do for my friends and family, my patients and for me. I firmly believe that Asea may be the biggest discovery in health and longevity ever, and I don't say that lightly. Only time will tell for sure, but one thing I know: EVERYONE can benefit from taking Asea every day!

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<sup>2</sup> Science News. April 16, 2005. Biochemistry. "Blood Hints at Autism's Source."