

Oxygen – the forgotten nutrient

By Heidi du Preez

We take the air we breathe for granted. We forget that it contains the most important nutrient – oxygen!

Oxygen is our life force. We can only live a few minutes without it. Oxygen is also our primary source of energy. Did you know that 90% of our energy comes from oxygen – only 10% comes from food and water.

WHAT DOES OXYGEN DO FOR US?

Maintaining the correct oxygen levels in the body is a vital requirement for health, vitality, physical stamina and endurance. Oxygen is the fuel required for the proper operation of all body systems.

- **Oxygen gives the body the ability to rebuild itself, detoxifies the blood and strengthens the immune system.** It neutralises environmental toxins, and destroys infectious bacteria, parasites, microbes and viruses. Oxygen greatly enhances the body's absorption of vitamins, minerals, amino acids, proteins and other important nutrients.
- **Oxygen increases brain function and memory.** One of its most important functions is enabling the brain to process billions of pieces of information every second. Even our ability to think, feel and act are all dependent on oxygen.
- **Oxygen strengthens the heart.** Increased oxygen delivery to the heart lowers the resting heart rate and strengthens the contraction of the cardiac muscle.

A lack of oxygen has been pinpointed as a cause of, or a factor contributing to, nearly all our degenerative diseases. This could in part explain our almost epidemic rates of cancer, heart disease and immune system malfunctions, to name just a few.

WHY ARE WE NOT GETTING ENOUGH OXYGEN?

The greatest threat to life on Earth is the speed at which lifestyle and environmental changes are taking place.

- **Atmospheric oxygen is declining.** This decline is caused by toxic gases and pollutants from industrial factories, automotive exhausts and pesticides, an increase in polluted water tables, rivers, streams and oceans, and the cutting and burning of the earth's rain forests and woodlands. A few hundred years ago the oxygen content of our atmosphere was about 35%. Today it is only about 21%! In this oxygen-deficient environment we are not getting optimal levels of oxygen from breathing – even when we exercise!
- **Today's lifestyle of 'convenient, tasty fast foods'** depletes oxygen from our bodies. Fruits and vegetables have high oxygen levels. However, in our Western society people prefer to eat processed and junk food that is low in oxygen and high in artificial chemicals. The body requires increased amounts of oxygen to eliminate these artificial chemicals and to absorb the few nutrients. Foods that are extremely low in oxygen range from processed sugar, white flour and alcohol to coffee and colas. These foods require large amounts of oxygen in order to be metabolised by the body.

- **Increased daily stress depletes oxygen.** Physical stress due to illness and infections consumes increased amounts of oxygen as the body fights the invading bacteria. Stress produced from chemical toxins in the body reduces oxygen as the liver works harder to filter out toxins and waste. Emotional stress puts additional strain on major organs such as the brain and heart, which require more oxygen to function. Emotional stress also produces adrenaline and other hormones that trigger use of more oxygen.
- **Lack of proper exercise and rest depletes oxygen.** Without adequate rest, all body systems must continue to work hard, requiring more oxygen and leading to oxygen deprivation.
- **Ageing decreases our oxygen levels.** According to research, our ability to consume sufficient oxygen decreases by 5 - 10% per decade between the ages of 25 and 75.
- **Pollution depletes oxygen.** In this industrial era, pollution is affecting all biological systems. Inhalation of cigarette smoke and exposure to air pollution or smog is accompanied by an increased production of free radicals (unstable molecules with an unpaired electron). Oxygen is used to stabilise these free radicals.
- **Ultraviolet light and radioactivity cause the formation of free radicals.** Our exposure to background radiation has increased considerably in the past century. Exposure to medical sources of radiation, such as X-rays, has doubled in the last 20 years. We are increasingly exposed to the UV rays of the sun and those emanating from computer monitors, television sets and fluorescent lamps.

The ability of our biological systems to adapt to all these changes is now profoundly challenged. With the oxygen in our atmosphere declining and the amount of pollution and stress we are exposed to every day increasing, we need other means of optimising the limited oxygen resources.

OXYGEN BALANCE

Although oxygen is absolutely necessary for life, it is also potentially life-destroying. Just as iron rusts in the presence of oxygen and water, and fats or oils become rancid when exposed to oxygen, similar events occur in our bodies. Through the 'burning' of hydrogen by oxygen, energy is released within our cells, and free radicals are the 'smoke' that is generated. While free radicals form as a result of oxidation reactions, UV radiation can also create them in the skin and some pollutants and chemicals can act as free radicals. A free radical is a very unstable molecule that will damage other molecules in the cell in order to gain stability. Free radicals are the major cause of oxidative stress, leading to degenerative diseases such as cancer and heart disease and acceleration of the ageing process.

Antioxidants are antidotes to free radicals. They have the capacity to stabilise the imbalance of unpaired electrons and neutralise the harmful potential of free radicals without themselves becoming unstable. Our bodies have the ability to produce antioxidants endogenously (within the cells where they are needed). These include glutathione sulphhydryde (GSH), superoxide dismutase catalase, squalene and coenzyme Q10. Squalene iP6 is the closest substance we have to an oxygen supplement. By facilitating oxygen delivery throughout the body and acting as an antioxidant, squalene supports the innate healing processes and combats ageing.

Other antioxidants are obtained from nutrients and therefore exogenous. They include substances like vitamins E, A and C. Lipoic acid and ginkgo biloba also act as antioxidants. Dietary antioxidants are contained in fruits and vegetables and include flavonoids, carotenoids, lycopenes, zeaxanthins, phenols, indoles and luteins.

To combat free radicals, our focus should not be on taking as many antioxidants as possible but rather on helping the system maintain its oxidant-antioxidant balance. Your system alone knows its precise needs, and endogenous antioxidants – those synthesised in the cell – will therefore play a greater role in oxidant-antioxidant balance than exogenous (dietary) ones. Ageing makes it increasingly difficult for the body to maintain this balance, however, because synthesis of endogenous antioxidants like squalene, GSH and coenzyme Q10 declines as we get older.¹

CONCLUSION

The ageing process, rising levels of oxidative pressure and modern lifestyles that deplete our own antioxidant resources all mean that it makes sense to take endogenous antioxidants in the form of a dietary supplement. A supplement will not make up for a bad diet, however – it will merely complement a healthy diet and lifestyle. To reverse the epidemic rates of degenerative diseases, we'll need to find ways to reserve our oxygen resources and optimise utilisation. Through our materialistic greed we are destroying planet Earth and ultimately ourselves!

'The significant problems we have created cannot be solved at the same level of thinking we were at when we created them.' – Albert Einstein

Reference

1. Das B. *The Science behind Squalene iP6 – the Human Antioxidant*. 2nd ed. Toronto, Canada: Toronto Medical Publishing, 2005.