The Brain and Oxygen

Brain Trivia

- If every person on the planet simultaneously made 200,000 phone calls, this would be the same total number of neural connections occurring in the human brain in every day.
- We can retain about seven facts at any one time in short term memory. Our brain has to forget things to make room for new memories.
- Our brain generates 25 watts of power while we are awake, enough power to illuminate a light bulb.
- The brain can stay alive for 4 - 6 minutes without oxygen before brain cells begin to die.
- Sixty percent of the human brain is made of fat. Not only does that make it the fattiest organ in the human body, but these fatty acids are crucial for our brain's performance.
- The brain isn't fully formed until age 25. Brain development begins from the back of the brain and works its way to the front. The frontal lobes, which control planning and reasoning, are the last to

The brain is an energy-demanding organ. While it makes up only 2 percent of our body's weight, it consumes more than 25 percent of our body's need for oxygen just to create the electrical energy it needs to function.

Unfortunately, the brain is incapable of storing significant amounts of glucose, which, when combined with oxygen, creates this energy. So, as mental, physical and emotional demands increase, so too does the brain's requirement for energy in the form of oxygen and glucose.

If the brain does not get the energy it requires, it simply loses its ability to properly code and process sensory information. Each of our hundred-billion brain cells, uses oxygen to stoke the fires of consciousness. Our brain's need for oxygen is more than ten times greater than the rest of our entire body.

strengthen and structure connections.

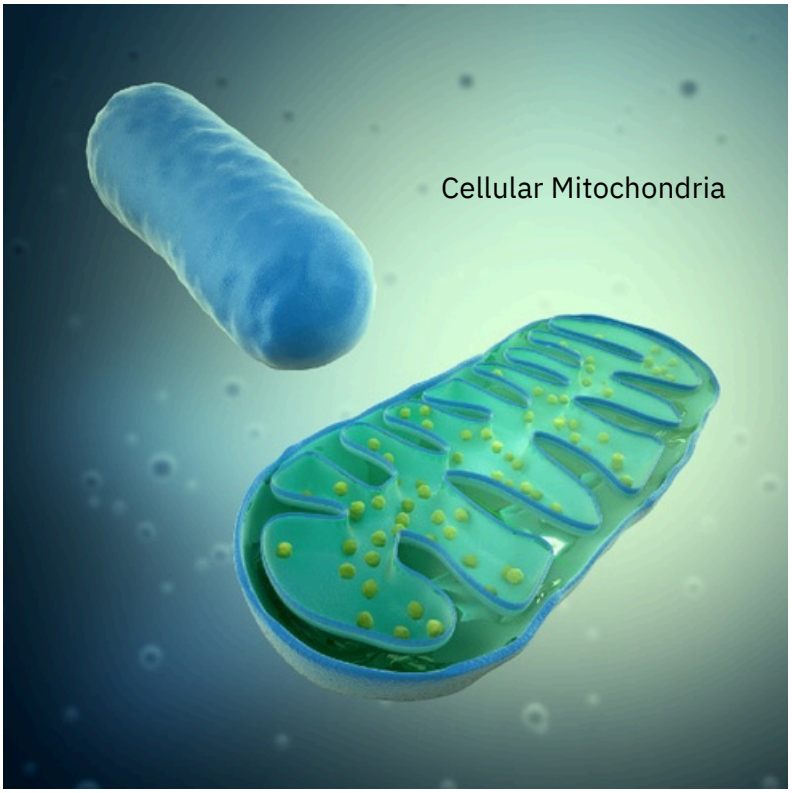
- Brain information travels up to an impressive 268 miles per hour.
- It's a myth that we only use 10 percent of our brain. We actually use all of it.
- Neurologists confirm that the brain is always active.
- There are 100,000 miles of blood vessels in the brain. This is four times more than the distance around the world at the equator (24,900 miles).
- A piece of brain tissue the size of a grain of sand contains 100,000 neurons and 1 billion synapses.
- Short term memory lasts about 60-90 seconds. This has to do with our brain's capacity for holding small amounts of information in the active mind. The brain keeps this information in an available state for easy access, but only does so for about a minute and a half.
- Most people hold memory for numbers around 7 seconds and memory for letters around 9 seconds. In addition, the brain can store up to 7 digits in its working memory. That is why the telephone numbers in the United States are 7 digits long!
- The average person has about 12,000 to 60,000 thoughts per day. Of those, 95% are repetitive thoughts from the day before.

Because brain cells will die if the supply of blood that carries oxygen is stopped, the brain has "top priority" for the blood. Even if other organs need blood, the body attempts to supply the brain with a constant flow of blood.

Our brain cells are extremely vulnerable to changes in our oxygen supply, and brain cells can start dying as early as five minutes after they are deprived of oxygen.

How the Brain Works.

The brain uses oxygen in the same way other organs do. Within every cell in the brain, tiny organelles called mitochondria take up oxygen and use it to convert glucose into a usable form of cellular energy called adenosine triphosphate (ATP). Without ATP, neurons would very quickly lose their ability to fire and the whole brain would eventually shut down.



Inside the skull, our carotid arteries branch into smaller and more numerous arteries, fanning out in a fantastically intricate network of lacy capillaries. This dense network is designed to reach into every crease and corner of our brain to feed

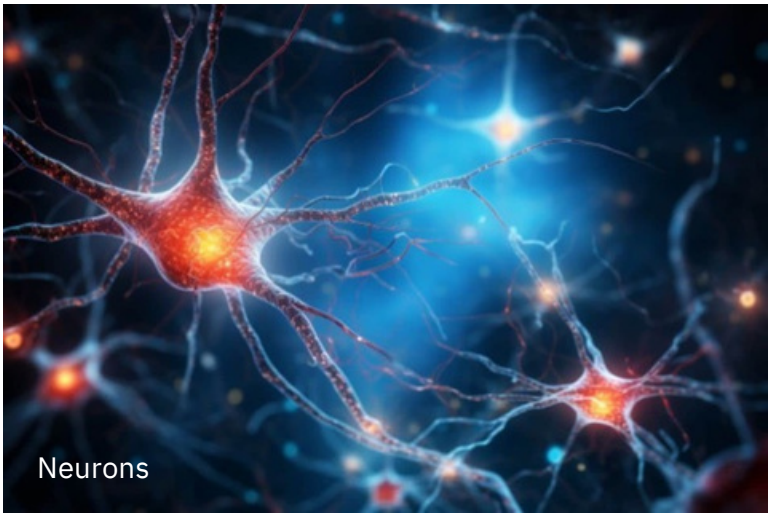
The Pure02™ formula falls under and meets all of the U.S.A. D.S.H.E.A. (Dietary and Supplement Health Education Act) regulations enacted in 1997 for dietary supplements. These statements have not been evaluated by the FDA. Pure02™ is not intended to treat, cure, prevent or diagnose any disease or medical condition.
Always consult with a medical professional before taking any dietary supplement, especially if pregnant, nursing or under a doctor's medical care.

"oxygen" to as many neurons as possible. Yet, inevitably, some cells will be less well supplied than others. These tend to be the cells we use the least and are also the first to die off.

Food and oxygen are carried to the brain by more than 400 miles of these blood vessels and capillaries. These vessels and capillaries are found on the surface of the brain and deep within the brain.

Neurons

Neurons (nerve cells) transmit signals to and from the brain at up to 200 mph. The neuron consists of a cell body (or soma) with branching dendrites (signal receivers) and a projection, which looks like a long tail,) called an axon. At the end of the axon, the axon terminals transmit the electro-chemical signal across a synapse, the gap between the axon terminal, to another neuron or a receiving cell. *(By the way, the word "neuron" was created by the German scientist Heinrich Wilhelm Gottfried von Waldeyer-Hartz in 1891. He also came up with the term "chromosome".)*


Neurons

A typical neuron has about 1,000 to 10,000 synapses. That is, each neuron communicates with from 1,000 to as many as 10,000 other neurons, muscle cells, glands, etc. So, you can see how important every neuron is to our brain. Losing a single neuron can affect signals to thousands of other cells, which in turn can prevent signals to thousands more. The "chain" of memory loss can be astounding!

A one-year old baby has about 100 billion neurons and no new neurons will be formed after we reach this age. Since we have at

Why Pure02™?

ThePure02™ formula has been available for over 25 years and has been the focus of more than two dozen independent studies confirming its efficacy and safety. It has gained global recognition for its pioneering role in the consumer health and beauty industries. The proprietary technology behind the Pure02™ formula is unique in the market and is among the first oxygen-enhanced products to undergo published clinical testing. Over the past three decades, the Pure02™ formula has remained a highly researched and trusted oxygen dietary supplement worldwide. With more than a million bottles sold internationally, Pure02™ continues to be one of the safest and most concentrated activated stabilized oxygen dietary supplements available.

least 100 billion brain cells, this rate of loss is hardly noticeable in a single day. But the loss does add up as the years go by.

After the age of thirty, the brain's circulatory system becomes less and less efficient. At least 35,000 brain cells will die every day and 200 have died in the time it took to read this far. Over the next week, almost a million more will likely die. By the time we reach 60 years old, a healthy adult will have lost more than 766,500,000 neurons. Less neurons means less memory as well as a host of other potentially serious brain disorders.

The Brain Needs Oxygen.

Brain tissue cannot sustain itself without oxygen. When brain cells are depleted of oxygen, they have to convert their aerobic or oxygen-processes into anaerobic--without oxygen--processes, as mentioned by Sarah Rocksworld and research associates in March 2007 in "Neurological Research." When this happens, cells lose their ability to regulate brain function.

As a result, free radicals are released that are very reactive and therefore highly damaging to brain cells. Without oxygen, amino acids, or protein parts are also released and damage brain cells. Even short periods of oxygen deprivation can activate events in the brain that result in cell death.

"Research has shown that oxygen administration leads to improved longterm memory and reaction times compared to a control group of normal air-breathing....oxygen administration appears to facilitate cognition most effectively for tasks with a higher cognitive load." *Con Stough and Andrew Scholey's (editors), "Advances in Natural Medicines, Nutraceuticals, and Neurocognition,"*

The Synapse and Oxygen.

How strong a memory remains in our brains depends on the strength of the synapse between the neuron cells associated with the memory. The more we practice or think about a piece of information stored in our brain, the more that particular synapse is going to be used.

As the synapse is used more frequently, it grows in strength. This allows the memory to be more vivid and clear in our minds. But, iIf we do not access the memory very often, the synapse begins to weaken. This may cause us to forget, or will make it to remember a memory that has not been accessed in some time. And none of this

Charging and Recharging the Brain with Pure02™

Our Pure02™ formula is the most well- researched oxygen dietary supplement available today. It has been the subject of more than two dozen independent research studies at laboratories and at universities all over the world.

Athletes, scientists, educators and health professionals and practitioners have testified to its safety and efficacy repeatedly.Pure02™ is:

*• an all-natural liquid dietary supplement**
• contains one of the highest concentrations of activated oxygen available today.

• pH balanced (app. 7.1)

• contains no chlorite nor peroxides molecules
• non-toxic and safe to use both orally and topically.

access can occur without an adequate supply of oxygen for neuron energy.

Increasing the amount of oxygen to the brain will accomplish two things. First, it will activate areas of our brain that are usually idle from lack of blood. Second, it will slow down the constant death and deterioration of our brain cells.

Is Oxygen a Nootropic?

Nootropics, also known as “smart drugs”, are cognitive enhancers. They can boost memory and help to increase focus and attention. Memory, as we have noted, begins to decline as early as the late teen but there are other factors also that can make memory decline faster. Stress, alcohol and lack of sleep are a few examples.

When a person learns, they require two cognitive skills: memory and concentration. Memory is the ability to remember and contraction is the power to hold our attention. Generally, nootropics consist of medications (“drugs) , dietary supplements or functional foods.

Some nootropics even act as a vasodilator. (Vasodilators are medications or nutritional supplements that will open up the blood vessels.) Oxygen appears to provide this nootropic benefit without the potentially adverse side effects associated with manufactured pharmaceuticals.

Higher life forms depend on oxygen to create energy for the cells. But there are unicellular microorganisms that fear oxygen because of its ability to also destroy life. This process is called “oxidation” and relies on oxygen’s unique ability to attract (or “receive”) electrons from other atoms and molecules.

How Pure02™ Works In the Body

Surrounding the nucleus of atoms are electrons that spin in orbits. When an orbit lacks a set of “paired electrons”, that orbit will make every effort to attach itself to another atom, or group of atoms, so that the orbiting electrons become more stable. These atoms may even “steal” electrons from other atoms or molecules. (Molecules are a group of two or more atoms jointed together).

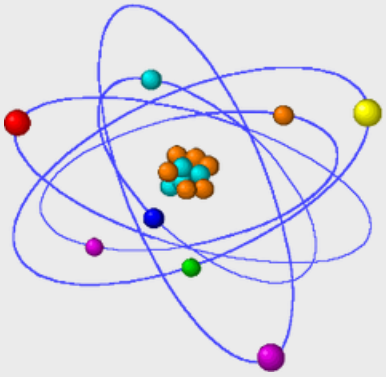
To help visualize the remarkable potential of electrons, imagine yourself spinning a golf ball around yourself and that this golf ball is connected to a spring. The golf ball represents the electron and the place where you are standing is where the atom’s nucleus

Pure02™ Activated Stabilized Oxygen?

Oxygen plays a powerful and primary role in our overall health and wellbeing. All metabolic processes in the body are regulated by oxygen, and 80% of all our metabolic energy production is created by oxygen!

The human body is largely composed of oxygen, so it's no surprise that scientists are now discovering how low levels of oxygen can disrupt the body's ability to function correctly. Sufficient oxygen helps the body in its ability to rebuild itself and maintain a strong and healthy immune system. Even our abilities to think, feel and act require oxygen-related energy production.

Pure02™ is backed by 26 years of independent research. It is a safe, certified drug-free, easy to use and stable dietary supplement*.



would be. If you spin the golf ball around you in a constant speed, the electron will be at the same distance from you, spinning at the same speed you are turning. If you start to spin harder, by putting more energy into your spin, you'll notice that the golf ball will move away from you and the spring will expand. Likewise, if you spin more slowly, the golf ball will be closer to you and the spring will contract.

In the same way, with changes in energy, an electron can occupy a different orbit around its nucleus. The smallest of these orbits represents the lowest energy that the electron can possess. This lowest energy state is known as the "ground state." If the electron absorbs energy of the right amount, (such as visible, infrared (heat), or ultraviolet light,) the electron can jump to a higher orbit or "energy

level" in the atom. With the electron in a higher orbit, the atom is said to be in the "excited state." At this point, the electron can fall back to a lower energy orbit or even the ground state. As it falls one orbit at a time, it emits a certain amount of energy, which may also be in the form of light, heat, or so on.

It is this remarkable movement and the exchange of electrons of the oxygen molecules in Pure02™, on an atomic and subatomic basis, that actually serves as the defense mechanism for our immune system as well as a process to deconstruct dangerous chemicals, toxins and microorganisms that can cause disease today.

Original research conducted in the 1990s on the Pure02™ formula resulted in the theorized O4 (polyatomic tetraoxygen) molecule pictured below.

Since that time, ongoing research conducted at the University of Rome and published in the Journal of Physics has resulted a different proposed molecular structure. Both models do have a commonly held belief that the bonding between all four oxygen molecules are very strong and may account for the exceptional stability of the molecule.