

ARTICLE 1: The Sense of Bio Scent

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What is the sense of different scents and how they effect on our behavior and different mood?

Abstract:

Despite frequent mention, we know relatively little about the effect of different scents on people's behavior. In this article we will discuss in a depth about the important role of bio scents on our mood. Based on the BHRI Institute scientific researches a several researches from different target group have been carried out, a model describing the effect of bio scent is proposed. Scent is portrayed as an environment cue that is compered with scent preferences to influence affective responses and ultimately approach-avoidance reactions.

What is the interaction between bio scent and brain?

Does odor influence on our behavior?

Can patients with brain disorders be treated with bio scents?

Can athletes achieve significantly better results with bio scents?

The above mentioned questions suggest that bio scents can play a role worthy of exploration by our researchers. However, since virtually no studies on bio scent have been conducted, the size of these effects and the mechanisms by which they may operate are not known. Since now! BHRI Institute research team might found the clue of sense of bio scent.

Introduction:

The brain is the most complex organ of our body, which can distinguish us from the other living beings. The brain is acting through the nerve cells, called neurons. Nerve cells communicate with each other through electrical and chemical signals. More neurons are connected, the more powerful our brains are. The brain, in which connections between neurons are bad, run slower and with less capacity, which is expressed in some form of poor intellectual abilities, while others are expressed in a worse mental state.

Based on a new research, the team of top BHRI Institute researchers has come up with the revolutionary discovery that certain scents stimulate certain triggers that affect the physical and mental state of the individual. We have studied the interaction between brain function and healing efficiency of odors at different target groups. Researches were conducted with people who have brain diseases (Dawn syndrome, Alzheimer's Disease, Epilepsy, Huntington's disease, Parkinson's disease), further research was made with children who have learning problems and hyperactivity as well as with the athletes who need additional motivation and relaxation of the body for maximum mental and physical condition of the balanced body. Therefore we have divided the further exploitation of researches on 5 target groups, as follows:

1. Animals
2. Drivers
3. Brain disorder
4. Children
5. Sport

All target groups have shown positive effects on the research, which drove researchers to have a deeper study of odors. Our first research was made on a group of 15 young people with brain disorder. BHRI Institute research team closely monitor the effects of odors on their mood with a revolutionary patented device called Scent Generator for a period of 4 month. The system of patented revolutionary device consists of a cylindrical accelerator molecules of compounds of essential oils and natural essential oils compounds or those so called »sourcing« essences ES3544. For that purpose our researchers carefully choose the right balance and type of odor with 100% natural scent of vanilla, chocolate and cedar, which contain serotonin, a hormone that promotes happiness. Research was carried out 4 times a week for one hour per day with astonished results. After one month of usage with the innovative device Scent Generator, all patients have shown positive effects, which refer in better motivation, concentration and particular in decline in brain disorders. Patient, who has formerly frequent epileptic seizures has suddenly shown stable medical condition without any sign of epilepsy, with prescribed regular use of our scientific device and original essences. For the second target group of our research we choose the hockey team from Klagenfurt. Before each match and in the first break players were relaxing in a scent room with the prescribed sourcing essence E3544, in the third break we use the essence ES4656, which has the sedative effect and for better effects to fall asleep and brain regeneration we prescribed another scientific device called SG Intuition with prescribed sourcing essence ES3530.

Furthermore, BHRI Institute researches explain how the device Scent Generator works and what is the secret of its revolutionary success.

Scent Generator operates in a manner of simulating natural circulation of essences in nature - by maintaining original molecules and the exact imitation of natural processes of air circulation, such as those found in the nature. Special bottle contains only 100% natural essences and are emitted into the room on the principle of cold transmission, which means no warming and other "classic" (unnatural) processes, so even without the aid of pressure or propellant.

According to the laws of aerodynamics, Scent Generator encourages essences to fill the space in the same way as it does outdoors. The result is that essences have all retained original effects. Therefore, the penetration of essences in human body takes place exactly as in nature: at a sufficiently high concentration through breathing to enter to the left cerebral hemisphere and to the lungs and then left the physical mechanisms regulate the absorption.

Our scientific team explained that Bio Scents have a major impact on human behavior, they can promote, revive, relax, alter heart rate or memorize, inspire or have other positive effects on the emotion, which we have already shown true our researches.

People can be distinguished by 2000 to 4000 different odors. When essential oil molecules are inhaled, they bind to receptors of smell, through which the signal then passes directly into our minds to the primitive middle brain, which makes up the limbic system (the left part of the brain Hemisphere). Another name for the limbic system is rinenecefalon, which in literally means "olfactory brain". This part is responsible for emotional responses of pleasure, pain, anger, fear, sorrow, sexual feelings and other emotions: left hemisphere has a surprisingly wide range of such "primitive" area. In the limbic system nerve impulses are traveling to the hypothalamus, which controls the pituitary gland. Smell triggers changes in the level of hormones in the blood and regulate other changes in the body. From odor to changes in the body only a few seconds is needed. The smell can activate in the immune system, regulate blood pressure, stimulates digestion and has major effect on our memory.

So how does different scent trigger your memory and how much cognition actually influences perception?

As we previously said smells and emotions are treated by the same part of the brain - the left part of the brain Hemisphere, so odors are experiencing extremely emotional and can instantly change our mood. An important role in identifying the smell is our memory. Because of individual memory links to the bio scents, BHRI Institute scientists struggle to define our responses to different odors. In general, women have a better sense of smell than men, our olfactory works best between 30 and 50 age. Pleasant smells put us in a good mood and when people around us smell nice, it is often tied to good things. Our research team has been developing for a long time appropriate essence, which is distinguished by different target group, different brain disorder or mental/ physical pleasure itself. So far we have developed 22 bio essences for different researches.

Smell is often our first response to stimuli, although smell is a basic sense, it's also at the forefront of neurological research. Scientists are still exploring how, precisely, we pick up odorants, process them and interpret them as smells. Why are researchers, perfumers, developers and even government agencies so curious about smell? What makes a seemingly rudimentary sense so tantalizing?

Smell, like taste, is a chemical sense detected by sensory cells called **chemoreceptors**. When an odorant stimulates the chemoreceptors in the nose that detect smell, they pass on electrical impulses to the brain. The brain then interprets patterns in electrical activity as specific odors and olfactory sensation becomes perception - something we can recognize as smell. The only other chemical system that can quickly identify, make sense of and memorize new molecules is the immune system.

But smell, more so than any other sense, is also intimately linked to the parts of the brain that process emotion and associative learning. The olfactory bulb in the brain, which sorts sensation into perception, is part of the **limbic system** - a system that includes the amygdala and hippocampus, structures vital to our behavior, mood and memory. This link to brain's emotional center makes smell a fascinating frontier in neuroscience.

But how humans perceive smell and how it triggers memory and the interesting (and sometimes unusual) ways to manipulate odor and olfactory perception?

Smell begins when airborne molecules stimulate olfactory receptor cells. If a substance is somewhat volatile (that is, if it easily turns into a gas), it will give off molecules, or odorants. Nonvolatile materials like steel do not have a smell.

Temperature and humidity affect odor because they increase molecular volatility. This is why trash smells stronger in the heat and cars smell musty after rain. A substance's solubility also affects its odor. Chemicals that dissolve in water or fat are usually intense odorants.

But how does odor actually become smell?

Anosmia is the inability to smell. Just as the deaf cannot hear and the <http://science.howstuffworks.com/environmental/life/human-biology/eye.htm> blind cannot see, anosmics cannot perceive odor and so can barely perceive taste.

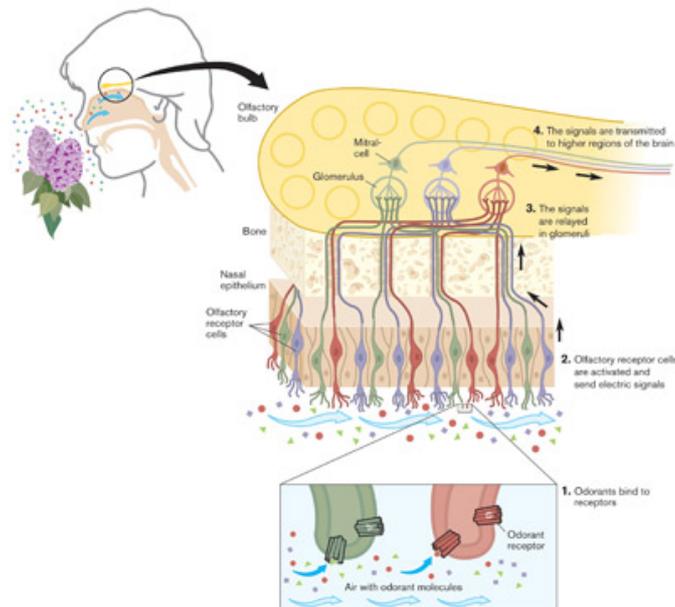
How does the brain recognize, categorize and memorize the huge variety of odors?

In 1991, Richard Axel and Linda Buck published a groundbreaking paper that shed light on olfactory receptors and how the brain interprets smell. They won the 2004 Nobel Prize in Physiology or Medicine for the paper and their independent research.

Axel and Buck discovered a large gene family - 1,000 genes, or 3 percent of the human total - that coded for olfactory receptor types. They found that every olfactory receptor cell has only one type of receptor. Each receptor type can detect a small number of related molecules and responds to some with greater intensity than others. Essentially, the researchers discovered that receptor cells are extremely specialized to particular odors.

Axel and Buck also found that each olfactory receptor type sends its electrical impulse to a particular micro region of the olfactory bulb. The micro region, or **glomerulus**, that receives the information then passes it on to other parts of the brain. The brain interprets the "odorant patterns" produced by activity in the different glomeruli as smell. There are 2,000 glomeruli in the olfactory bulb - twice as many micro regions as receptor cells - allowing us to perceive a multitude of smells.

Odorant Receptors and the Organization of the Olfactory System



How smells trigger memory and find out how much cognition actually influences perception?

A smell can bring on a flood of memories, influence people's moods and even affect their work performance. Because the olfactory bulb is part of the brain's **limbic system**, an area so closely associated with memory and feeling it's sometimes called the "emotional brain," smell can call up memories and powerful responses almost instantaneously.

The olfactory bulb has intimate access to the **amygdala**, which processes emotion, and the **hippocampus**, which is responsible for associative learning. Despite the tight wiring, however, smells would not trigger memories if it weren't for **conditioned responses**. When you first smell a new scent, you link it to an event, a person, a thing or even a moment. Your brain forges a link between the smell and a memory - associating the smell of chlorine with summers at the pool or lilies with a funeral. When you encounter the smell again, the link is already there, ready to elicit a memory or a mood. Chlorine might call up a specific pool - related memory or simply make you feel content. Lilies might agitate you without your knowing why. This is part of the reason why not everyone likes the same smells.

Because we encounter most new odors in our youth, smells often call up childhood memories. But we actually begin making associations between smell and emotion before we're even born. Infants who were exposed alcohol, cigarette smoke or garlic in the womb show a preference for the smells. To them, the smells that might upset other babies seem normal or even comforting.

Conclusion:

We can proudly concluded that our research team has been developing and studying for a long time among different researches, which might disclosed the impact of different odors in the brain and reflect changes in the physical and mental condition. The purpose of all our researches was to demonstrate and it is now empirically proven that with modern technology and precise processes we are successfully able to increase the concentration and reaction torque left cerebral hemisphere by the controlled addition of oxygen atoms droplets and indirectly to improve motor skills and overall reaction concentration in performing activities, such as other researches relating with brain disorders. Researches have exceeded all our expectations, we decipher the secrets of odor's impact on well-being and remarkably contributed to the further development of neuroscience. Otherwise, it is best that some things still remain, such as smell, a little mysterious and magical.

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