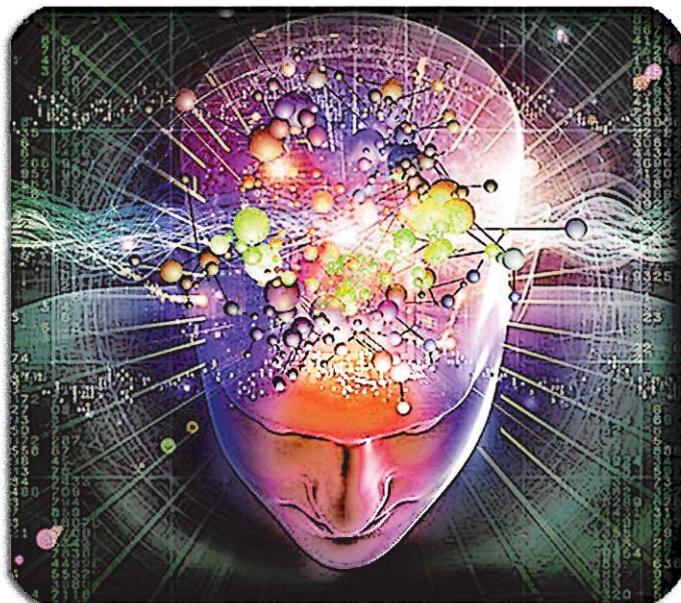


She says, "What's that smell?"
He says, "What smell?"
She says, "Don't you smell that?"
He says, "Smell what?"

Marlenea
La Shomb



The **Brain Gym** Circuit for the Olfactory Cortex

The Brain Gym Circuit is a series of stations designed to increase brain function. Stimulating communication in areas of the brain, whether you are focused on eye-sight, hearing, smell, or various motor functions, brings about the necessary cellular environment for repair and rebuilding of the surrounding brain cells and, as Michael Lesser, MD, author of *The Brain Chemistry Diet*, reminds us, **"What's good for our brain cells is also good for the rest of the body!"**

The scent of spring is in the air with the deep, rich aromas of warming earth, melting snow, spring rains, and blooming bulbs—especially those hyacinths and daffodils! Everything about the sense of smell fascinates us, from its power to evoke memories, to its ability to change our moods and influence our behavior. Here in Montana, your garden of smells may still be under a blanket of snow, so in the meantime, pull out those essential oils to bring the great outdoors inside. Today, we cover the topic of stimulating the olfactory nerve. It's considered the first cranial nerve and carries information about smells to the brain, stimulating and increasing brain function and memory. Let's start with the physical apparatus, as described in *The Brain Encyclopedia* by Carol Turkington.

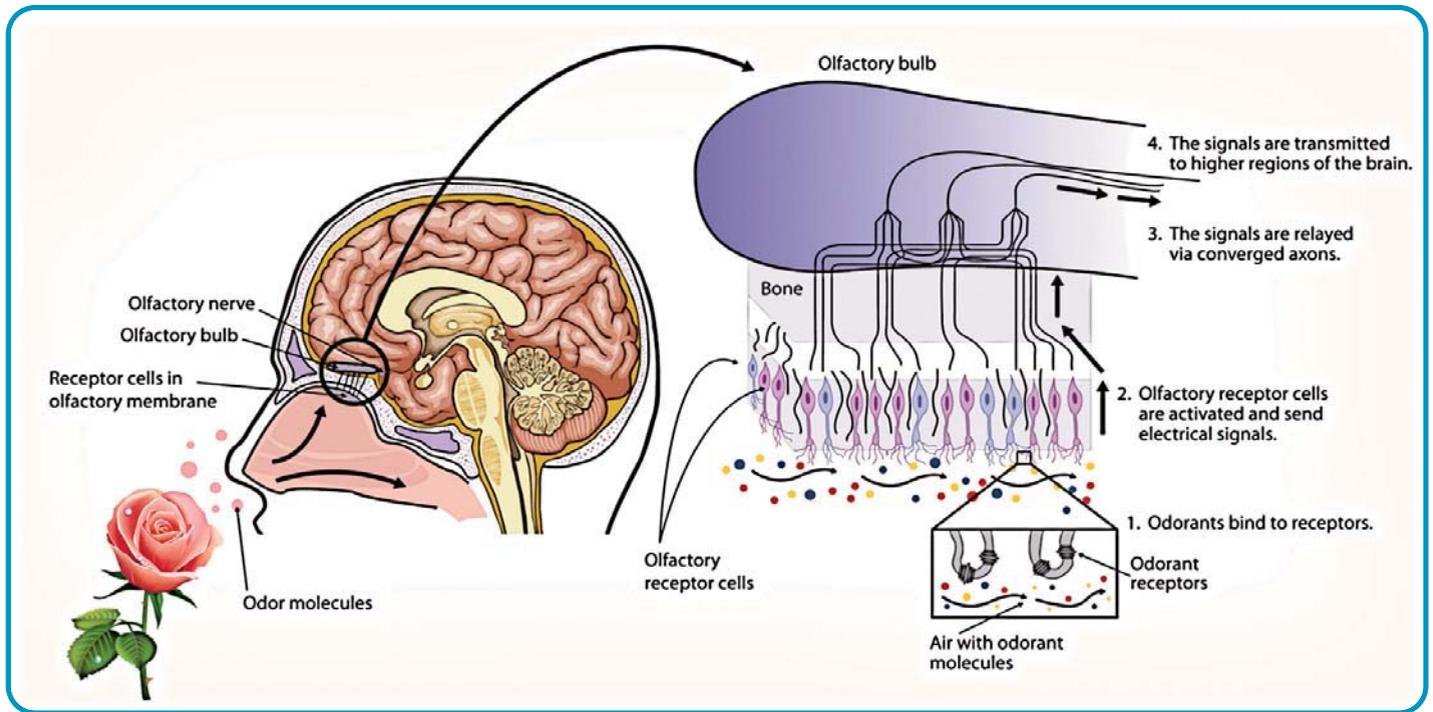
The olfactory bulbs are the interior lobes of the brain for our sense of smell; they lie on top of a thin body plate at the roof of the nose and connect to the brain via the olfactory nerve. Scent particles enter the nose stimulating smell receptors (specialized nerve-cell endings) in a small area of mucous-membrane lining at the top of the nasal cavity. (This area must be moist.) These receptor-cell cilia reach down to the surface of the mucous stimulated by odor molecules and send electrochemical signals through holes in the ethmoid bone to an olfactory bulb (see diagram). From there the signals travel to several regions of the brain.

Dehydration impairs this process. Odor molecules must dissolve in mucus before they can stimu-

late the receptors. When the molecule "keys" fit into the "locks," the process triggers nerve impulses in the olfactory nerve and are transmitted to the brain where they are translated. Connections with the limbic system explain the emotional aspects of smell and reveal why some smells can quickly trigger powerful memories! On the other hand, links with the hypothalamus can trigger strong physical reactions (such as nausea and vomiting) in response to unpleasant smells. We are born with a strong sense of smell; babies can smell their mothers milk!

At the library you can check out an enjoyable book called, *The Nose Knows*, by Avery Gilbert, and read all about your sense of smell. It's full of facts like why the removal of your voicebox means you can no longer smell and how research shows that, **yes, women DO have a stronger sense of smell than men!** My daughter can walk up to the house and ask the children whose laundry got left in the washer, turning sour, or that someone needs to get the dishes into the dishwasher—all before opening the door! Loss of the ability to detect a smell, known as olfactory fatigue, affects all of us sooner or later. An example of this is when we walk into a room that reeks and soon we are no longer noticing the smell at all. This adaptation occurs when the brain modifies the sense of smell by transmitting the signal to the nerves, which pick up the smell message. The more the person is exposed, the less they can notice the odor. If the olfactory nerves are injured (usually by a head injury), the sense of smell may be impaired or completely lost.

As one of our five keen senses, we can distin-



guish several thousand distinct smells, but any glitch along the pathway—from the inhale up the nasal cavity to the olfactory nerve sending the electrical signals to the brain for interpretation—will interfere with a person’s ability to detect or identify odors. This system is exquisitely sensitive; **as little as four molecules will convey a recognizable smell!** Because the senses of smell and taste are so intertwined, problems in smell usually affect the ability to taste as well. This explains why elderly people often complain that food has lost its taste and why, as a child, we disliked Brussels sprouts but as an adult we don’t mind them as much. Temporary problems with smell

may occur when the mucous membranes become inflamed as with a cold or flu. Here are some medications that can lessen our sense of smell:

- 1) Antibiotics
- 2) Anticoagulants (anti-blood-clotting drugs)
- 3) Antihistamines
- 4) Blood pressure medicine
- 5) Chemotherapy drugs
- 6) Radiation therapy to the head
- 7) Nose drops or sprays
- 8) Toothpaste
- 9) Vitamin D in high doses (especially if synthetic)
- 10) Dietary deficiencies (especially in vitamins A, B 12, or Zinc)

Memory & Our Sense of Smell

Traditionally understood as the storage and retrieval of information, our memory is not so much about retrieval as it is an active construction that refers to the process of remembering. Memory has not been located in any one place in the brain but is believed to function in neurons scattered in a web-like pattern throughout the brain. In fact, there is no firm distinction between how a person remembers and how a person thinks.

Remembering that we are sunlight-activated electrical beings, here’s how it works: In the brain, our neurons connect

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- 9) Ear Candling to clean the ears
- 10) Breathwork & Breathing Work

with other cells via junctions called synapses. When a neuron sends an electrical signal down its axon, the signal triggers the release of neurotransmitters (special signaling substances) that diffuse across the synapses between cells and attach themselves to receptors on the following nerve cell. When the neurotransmitter binds to the receptor, this chemical transmission stimulates (or inhibits) the electrical activity of the second neuron. In this way neurons communicate.

The human brain contains about 10 billion of these nerve cells joined together by about 60 trillion synapses! Bits and pieces of every experience are stored in more than one place and are sent out to different regions of the brain. Memories of sound are found in the auditory cortex; memories of appearances settle

in the visual cortex; and we've shown how the sense of smell influences our memory. Each neuron represents a small bit of the memory and all the fragments remain physically linked so they can be recalled (constructed) by the limbic system. It could be that the hippocampus (part of the limbic system) retrieves a memory using a single moment or sensation to trip off recall of the others. One smell can bring back a flood of childhood memories! By increasing your sense of smell, you increase your brain function of recall of memories (short-term and long-term) that are scattered in all areas of the brain.

These processes hold true not only for the olfactory cortex, but also for the visual and the auditory cortex. ***In the Brain Gym Circuit, we stimulate all the cortexes, including the olfactory, which stimulates and brings back into harmony all the brain and body functions.*** If you are experiencing limitations in any brain or body functionality, come and see what the Brain Gym Circuit can do for you! ■

Marlenea La Shomb, LMT, offers The Brain Gym Circuit in Bozeman at the Advanced Spine and Wellness Center, 1425 W. Main St., Suite C. She works with all the senses to improve brain function. Call 585-0388 for an appointment.

Need a **private class** to show you how to use your own essential oils? She'd be happy to show you just how for only \$15. See coupons for March and April Specials.

Previous Brain Gym Circuit articles on the Visual, Auditory and Motor Cortexes) are archived at NaturalLifeNews.com.



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