



# Your Questions Answered

## OLFACTORY HALLUCINATIONS

**Q** I have “olfactory hallucinations” in which I smell smoke. What could be causing this?



**DR. RONALD DEVERE RESPONDS:**

**A** Olfactory hallucinations are perceived abnormal smells—usually unpleasant—that are not actually present in the physical environment. They can come from a number of different areas of the smell system. The length of time these smells last depends on the cause. If the smell of smoke occurs suddenly and continues for less than a few minutes, the site of origin is likely the smell region of the inner temporal lobe of the brain, called the uncus. The source could be an abnormal electrical discharge or “firing” in the brain (a seizure). Potential causes of this abnormality could be a brain tumor, inflammation, stroke, or an injury following head trauma. Confirming the cause requires an imaging study of the brain (MRI) and a brain-wave test (EEG). Usually, results of smell testing will be normal to minimally abnormal in a person who is experiencing this type of seizure. If a seizure disorder is suspected, anti-seizure medications may be used to prevent a seizure and thus eliminate the smell.

Olfactory hallucinations lasting more than a few minutes to several hours are usually due to a disturbance of the smell system in the nose (olfactory organ or olfactory nerves) or in the olfactory bulb, which sits just inside the skull above the upper nose level. The term for this type of olfactory hallucination is dysosmia. Common causes of dysosmia are head and nose injury, viral damage to the smell system after a bad

cold, chronic recurrent sinus infections and allergy, and nasal polyps and tumors. The brain is usually not the source. In these instances, sense of smell for other odors is often impaired as well, and the results of smell testing typically are abnormal.

Dysosmia usually disappears with time (three months to two years) without treatment. A thorough evaluation for the mentioned causes may include an MRI of the olfactory system and a nasal endoscopy, in which an ear, nose, and throat (ENT) physician looks inside nasal and sinus passages with a magnified scope. Dysosmia can be treated with normal saline nose drops administered with the head lowered (the top of the head should be pointing to the floor). It may also improve with some medications, such as gabapentin—a medication normally used for

seizure disorders but that has also been shown to prevent unpleasant odors arising from injured smell receptors or their nerve branches. The use of gabapentin in this instance is considered off label, which means it is not approved by the FDA for this indication. This doesn't mean the medication is not effective and safe, but rather that the drug has not been officially studied and evaluated by the FDA for this condition.



The source of olfactory hallucinations could be an abnormal electrical discharge or “firing” in the brain (a seizure).

Ronald DeVere, M.D., Fellow of the American Academy of Neurology (AAN), is the director of the Taste and Smell Disorder Clinic in Austin, TX.

He has been in private practice for more than 30 years and has 15 years of experience in evaluating patients with taste and smell disorders. Dr. DeVere is also the coauthor, with Marjorie Calvert, of the AAN's patient book, *Navigating Smell and Taste Disorders* (Demos Health, 2010).

**DO YOU HAVE A QUESTION TO ASK THE EXPERTS?**  
Send it to [neurologynow@lwwny.com](mailto:neurologynow@lwwny.com)

## SARCOIDOSIS

**Q** *Should I see a neurologist for sarcoidosis?*



**DR. JEFFREY  
GELFAND  
RESPONDS:**

**A** The immune system is the body's way of protecting against infection and injury. In sarcoidosis, the immune system becomes misdirected and attacks part of the patient's own body as if it were a foreign invader, causing inflammation and tissue damage. What causes the immune system to go awry in people with sarcoidosis is unknown. What is known is that in sarcoidosis, tiny clusters of immune cells, called granulomas, form in certain parts of the body, including the lungs, lymph nodes, eyes, skin, and other tissues. Why are certain organs affected in some patients with sarcoidosis and not others? That is an important question, but one that remains unanswered.

Infiltration of the nervous system by sarcoidosis—neurosarcoidosis—occurs in up to 10 percent of people with the disease. For example, sarcoidosis can infiltrate the central nervous system, including the brain, spinal cord, pituitary gland, optic nerves, and meninges, which are the membranes that envelope the central nervous system. (This is typically assessed by clinical examination, MRI, spinal fluid examination, neuro-ophthalmologic testing, and tests of nerve function.) In this case of central nervous system involvement, the neurologic problems may be the first sign that a patient has sarcoidosis.

The disease can also invade the peripheral nervous system, which consists of the nerves outside of the brain and spinal cord. (This is typically assessed by clinical

examination, nerve conduction studies, electromyography, and, sometimes, additional testing for involvement of small nerve fibers in the skin.)

But a much larger proportion of sarcoidosis patients without direct evidence of central or peripheral nervous system involvement still report neurologic symptoms, such as thinking problems, mood changes, pain, fatigue, headaches, sensory changes, weakness, and imbalance. Neurologic consultation can be helpful for these individuals in order to sort out the cause of the symptoms and provide expert recommendations for treatment. It is important to remember that the presence of neurologic symptoms in a patient with sarcoidosis does not necessarily mean that the person has neurosarcoidosis—he or she may have sarcoidosis in addition to another neurologic condition.

Diagnosis and treatment of neurosarcoidosis can be challenging, so consultation with a neurologist with expertise in sarcoidosis is advised. Because sarcoidosis can affect so many different parts of the body, it is also critical that the various doctors and providers involved in the patient's care communicate with one another.

More research is needed to understand why neurosarcoidosis occurs, how to improve diagnosis, and how to make treatment more effective and tolerable. We have created a neurosarcoidosis referral and research program ([sarcoidosis.ucsf.edu](http://sarcoidosis.ucsf.edu)) with these aims in mind. Our hope is to work closely with clinicians and other experts worldwide to aid in successfully diagnosing, treating—and curing—this mysterious disease.



**MRI of the brain of a patient with neurosarcoidosis. The brighter areas show involvement of the optic nerves and hypothalamus.**

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