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### **Lack of smell and taste**

Inability to smell or taste food is a great misfortune. Both smell and taste are important for savoring food. Remember the last time when you had a bad cold, how miserable you felt because of not being able to taste or smell food. Inability to taste food could cause anxiety, depression and even nutritional shortages because of reduced food intake. Being unable to smell could also place your life at risk by being not able to smell smoke in a fire or gas leaks. You can develop food poisoning by eating spoiled food if you are unable to smell it. Medical name for lessened capacity to smell is hyposmia and for absence of smell is anosmia. According to one report 2.7 million Americans have problems with their sense of smell.

### **Anatomy of the problem**

There are twelve pairs of nerves arising directly from the brain. They are called cranial nerves. Sense of smell from the nose is carried to the brain by cranial nerve I (Olfactory nerve) and V (Trigeminal nerve). The nerve endings of the olfactory nerve are placed at the roof of the nose and are responsible for smelling even subtle odors. Strong odors such as ammonia are needed to stimulate the Trigeminal nerve which has its nerve endings all over the nose. Any odor causing substance is carried to the nose by air currents during inhalation. The odor causing substance dissolves in the mucus covering the nerve endings (known as receptors) and combines with the receptors. This sets up a nerve current which is carried by nerve fibers to specialized parts of the brain which are responsible for sensing and interpreting odors and tastes.

### **Causes**

Any interference with this could cause anosmia or hyposmia. Both conditions can be temporary or permanent. Head cold, sinus infection, allergic rhinitis (hay fever), vasomotor rhinitis, nasal polyps, significant deviation of nasal septum, exposure to toxic fumes, heavy smoking, head trauma and tumors involving nose are some of the common causes of hyposmia or anosmia. Infections involving the brain, nerve damage from lack of oxygen or following viral infections, degenerative brain diseases such as parkinson's and multiple sclerosis and brain tumor and hydrocephalus are uncommon causes. Systemic disorders such as diabetes, hypothyroidism, cystic fibrosis and certain diseases involving kidneys and liver could be occasional culprits. Rarely lack of smell could be genetically arbitrated and run in families.

## **Diagnosis**

A good medical history and physical examination could often pinpoint the probable cause for hyposmia or anosmia. Evaluation by an allergy specialist and by an ENT doctor is often useful in ruling out local causes involving the nostrils. Neuroimaging studies such as CT scan or MRI of the brain with contrast is useful in unraveling pathology affecting the nerve pathways and brain especially when medical history and physical examination point in this direction. Standard tests for diabetes, hypothyroidism and tests for kidney and liver function and nutritional shortages are useful in ruling out these conditions.

University of Pennsylvania Smell Identification Test checks the capacity of patients to smell and identify 40 different odors. Patients with anosmia may not be able to smell and identify more than 10 odors. Rarely nasal biopsy is needed to prove the diagnosis.

## **Treatment**

Treatment of nasal allergy with regular use saline nasal irrigations, oral and topical steroids and treatment of underlying infection with antibiotics is all that is needed for common conditions such as nasal allergy, cold and sinus infections. Aggressive management of nasal polyps by surgery, medications and allergy injections may help people with nasal polyps. Satisfactory control of diabetes and hypothyroidism may help patients with these disorders. Removing exposure to heavy smoke and toxins is important in some. Despite best management hyposmia or anosmia may never get better in some. In others it may improve partially after prolonged treatment. Most importantly, patients should be aware of the hazards associated with the inability to smell odors such as smoke, natural gas leaks, and spoiled food. Smoke detectors, as well as natural gas and propane gas detectors, are commercially available to help remove such risks.

### ***About the author:***

*Natarajan Asokan, M.D., F.A.A.P. is a board certified allergist and immunologist and a board certified pediatrician with over 25 years of experience as a physician and 9 years of experience as a practicing allergist & immunologist. He treats adults and children with various allergy & immunology problems. He can be reached at 1739, Beverly Ave, Suite 118, Kingman, AZ 86409, Tel: 928-681-5800 or at 1975 HWY 95, Bullhead City, AZ 86442, Tel: 928-758-6200 or at [www.trinityallergy.com](http://www.trinityallergy.com)*