



What the Nose Knows

How to cope with loss of smell due to Alzheimer's, Parkinson's, Huntington's, and MS.

BY AMY PATUREL, M.S., M.P.H.



Smell is the sense that drives behavior. Over the course of millions of years, whether foraging, mating, bonding, or recognizing predators, the nose has been a powerful source of information—far beyond answering the question, “What’s for dinner?” The areas of the brain that process smell are also involved in emotion and memory, which is why a whiff of cinnamon can conjure up childhood memories of mom’s apple pie.

In the 1970s, researchers learned that smell is compromised in neurodegenerative conditions like Alzheimer’s disease, Parkinson’s disease, Huntington’s disease, and multiple sclerosis (MS). Now, they are discovering that loss of smell can be a hallmark symptom in the earliest stages of many diseases.

“Recent studies of brains from Alzheimer’s and Parkinson’s disease patients reveal structural and biochemical alterations in regions associated with the sense of smell,” says Richard Doty, Ph.D., professor and director of the Smell & Taste Center at the University of Pennsylvania. Loss of smell

occurs 90 percent of the time in Parkinson’s disease. This is greater than the prevalence of tremor, a cardinal sign of the disorder.

Yet in one study of Parkinson’s patients, 72 percent were unaware they had a smell disorder before undergoing standardized testing. Only two out of 34 Alzheimer’s disease patients reported suffering from smell and/or taste problems—even though 90 percent of the patients scored lower on standardized smell tests than healthy subjects.

IS YOUR SNIFFER UP TO SNUFF?

Odors enter the nasal cavity and travel a set of cells at the roof of the nose called the olfactory receptor. When an aroma reaches the receptor, it sends a signal to the brain that says, “Oh, that’s vanilla,” or “Bacon!” If the receptors are blocked or dead due to aging or certain medical conditions, the smell won’t be perceived.

How do you know if your system is functioning appropriately? Ask your doctor for a sniff test. Most neurologists don’t test olfactory function or ask patients about their sense of smell, says Dr. Doty.

The University of Pennsylvania Smell Identification Test consists of four booklets, each containing 10 odorants. A multiple-choice question with four possible answers for each item is located above the “scratch and sniff” odorized strips, and the subject must choose one of the four alternatives.

“On the 40-item test, Alzheimer’s and Parkinson’s patients average a score of 20—even at the earliest stages of the disease—while healthy subjects typically score 34 and above,” Dr. Doty says. The higher the score, the more accurate your sense of smell. And there is no association between the type of drug therapy and the degree of olfactory dysfunction, which means the drugs aren’t causing the loss of smell—it’s the disorders.

Prevent odor-related disasters

- ▶ Place a smoke detector in every room that might have a fire or where people sleep.
- ▶ Opt for an electric stove over gas, but if you must go the gas route, make sure it is equipped with an automatic pilot light.
- ▶ Purchase propane detectors, natural gas detectors, and gasoline detectors (available through the gas company, recreational vehicle dealers, or marine electronics stores).
- ▶ Take care when preparing food, particularly leftovers, since spoiled food can wreak havoc on your intestinal tract.

Smell loss is a **more common** symptom of Parkinson's than tremor.

WHEN THE NOSE DOES NOT KNOW

"When people lose their sense of smell, it can be devastating," says Ronald Devere, M.D., director of the Alzheimer's Disease and Memory Disorders Center in Austin, TX. "It severely diminishes a person's quality of life and safety."

People with smell loss are almost twice as likely as people with normal olfactory function to have cooking-related accidents, be exposed to an undetected fire or gas leak, or eat spoiled foods or toxic substances. There are no medical treatments to restore your sense of smell, but making a few simple changes can keep you safe:

- ▶ Cook foods on the grill or use an oven with automatic shut-off features.
- ▶ Label foods with dates as soon as you return from grocery shopping.
- ▶ Install smoke alarms and sensing devices for gas.
- ▶ Don't stop trying to use your nose.

"Animal studies suggest that exposure to odorants may enhance some regeneration at the periphery [olfactory cells in the nose] and stimulate the formation of additional synaptic connections in central brain structures, including the olfactory bulb," says Dr. Doty. One unpublished study found that people with compromised smell improved their function by sniffing a number of odorants twice upon awakening and twice before going to bed.

FLAVOR SAVERS

Experts claim that 80 percent of food appreciation comes from the olfactory system, which is why foods seem tasteless when the nose is blocked by a cold. When you chew your food, odors go to the back of the mouth where the olfactory system translates them into flavor.

Even if your sense of smell is compromised, the basics of taste often remain

intact: sweet, salty, sour, bitter, and umami, which is a Japanese word meaning "savory" or "meaty." You'll also be able to appreciate temperature and texture. It's the more subtle nuances of flavor that are lost, such as the complexity of dark chocolate or the deep tannins of a robust merlot. For some people, this is hard to bear.

"Patients are idiosyncratic in terms of how smell loss affects them," says Dr. Doty. "Some people eat colorful foods with a lot of texture and aren't fazed at all; others are suicidal over it. They don't find food satisfying and start to waste away."

One common solution is to drown food in salt, which is still recognized by

taste buds that can't detect other flavors. Unfortunately, adding salt can raise blood pressure and increase one's risk for stroke. Instead enhance flavors by chewing thoroughly and alternating bites of different foods in one meal. Both tactics stimulate taste and smell receptors and prevent your taste buds from getting so accustomed to one flavor that the food tastes flat. "Play with texture and temperatures to create sensations in your mouth," suggests Dr. Devere. "Add spices to food, marinate chicken in fruit juices, and experiment with flavors you used to like." NN

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