



ORL. Issue 1; February 2022

# Otorhinology

## AIIMS RAJKOT

# NOSE KNOWS NAUGHT

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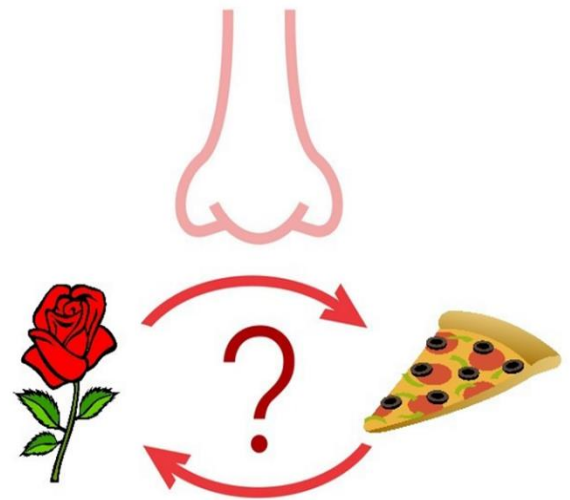
- Covid related olfactory dysfunction
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### Message from the Executive Director

I heartily congratulate the Department of Otorhinology for their initiative to release e-newsletter in their speciality.

My Best Wishes to the entire team.....

- Dr. (Col) C. D. S. Katoch



## ANOSMIA AWARENESS DAY

27th February

### Message from Team ENT

This newsletter intends to inform about the recent trends and raise awareness on pertinent themes related to the field of otorhinology. Hope you enjoy reading this. Feedback and suggestions are welcome.

**Dr Garima Upreti (Assistant Professor)**

**Dr Payal Vadher (Senior Resident)**

**Dr Kishan Pandit (Junior Resident)**



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# Otorhinolaryngology

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### COVID-19 related olfactory dysfunction

Post-viral olfactory dysfunction accounts for upto 40% cases of olfactory dysfunction in various series. Prior to COVID-19 it was estimated to complicate about 1% of viral upper respiratory infections, caused by previously described rhinoviruses.

Olfactory dysfunction maybe the first (and sometimes the only) symptom of COVID-19. Apart from anosmia, parosmia and phantosmia also occur. It is the best predictor of a positive test result and should prompt self-isolation and testing.

ACE2 receptors, which mediate viral entry, are expressed by the supporting cells of the olfactory epithelium leading to widespread epithelial injury. Evidence suggests olfactory loss is a positive prognostic factor for COVID outcome, with higher prevalence in mild disease. Some suggest the sacrifice of olfaction maybe a remarkable defense mechanism against a neurotropic virus (though not evidence backed).

Although a significant proportion recover within the first four weeks, at least 10% self-report severe persistent olfactory deficits, lasting at least six months. On formal psychophysical olfactory tests, 50% have persistent olfactory deficits at six months, many of whom also report parosmia.

The impact on quality of life and mental health is significant. Uplifting smells improve mood and evoke good memories. Taste is 75% smell. Loss in flavor perception results in loss of appetite. There is anxiety, depression and constant doubt about personal hygiene. Smell is an important alerting and coping mechanism. Data suggests that anosmics are at higher risk of food poisoning and exposure to household fires.

Can't smell coffee,  
Can't smell the rain;  
The odors no longer  
reach my brain.



- Can't smell the garden rose or the morning coffee
- Can't enjoy the ice cream flavors or wine.
- Food doesn't excite me anymore.
- Have to cook with timer on
- Everyone complains the food I cook is too spicy
- Wondering if the food has gone stale or is safe to consume
- Can't smell dump or diapers
- Don't know what my perfume smells like
- Self-doubt when someone complains of bad odor
- Always have to carry mint/ gum
- Daily prayers for no gas leak or wire burns



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### Causes of anosmia

#### Conductive

- Structural causes  
e.g., deviated nasal septum
- Allergic rhinitis
- Rhinosinusitis with or without nasal polyposis
- Illicit drug use/ chemical inhalation  
e.g. cocaine
- Sino-nasal neoplasms
- Systemic diseases with nasal manifestations  
e.g. granulomatous conditions, polyangiitis
- Iatrogenic  
(nasal surgery, laryngectomy, medication, radiation)

#### Sensorineural

- Post viral upper respiratory tract infection
- Head injury
- Old age
- Neurodegenerative disorders  
(e.g., Multiple sclerosis, Alzheimer's, Parkinson's disease)
- Central space occupying lesions  
(e.g., esthesioneuroblastoma, meningioma)
- Heavy metals/ solvents  
(e.g., Cadmium, iron, zinc, ammonia)
- Congenital (Kallmann syndrome)

### Work-up of olfactory dysfunction

#### Comprehensive history taking

A thorough history should include duration, possible fluctuation, distortions, events preceding the olfactory deficit, and concomitant sino-nasal symptoms.

Associated loss of taste may actually be loss of flavour perception rather than true gustatory dysfunction. Gustatory dysfunction is known to occur in 42% cases with COVID 19. However, it is unclear as to how much of it is due to loss of olfaction.

Unexplained neurological symptoms indicate central space occupying lesion or neurodegenerative causes.

History of substance abuse or occupational exposure to heavy metals/ chemicals incriminated for anosmia should be elicited. Consumption of drugs that cause anosmia (such as certain antibiotics, antipsychotics, antihypertensives, antithyroid and anticancer drugs) must be ruled out.

Anosmia with no improvement in olfactory function in 6 weeks, or association with other neurological symptoms warrant thorough evaluation to rule out a central cause.

Clinical examination should include **diagnostic nasal endoscopy** and formal **olfaction testing**.



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### Investigations

#### Blood tests

Post viral olfactory dysfunction-

Virology screen (RT-PCR)

Dietary deficiency- Vitamin A, B1, B6, B12, Calcium, Folate, Iron, Zinc, Magnesium, Copper

Endocrine dysfunction-HbA1c, thyroid function test, morning serum cortisol, 24-hour urinary cortisol, serum testosterone, prolactin, FSH, LH, estradiol

Vasculitis- ANCA, ACE, VDRL

Allergic rhinitis – RAST, IgE

Congenital anosmia- Genetic testing

#### Imaging

MRI+/- CT for central/ sinonasal pathology

### Olfaction testing

#### Subjective tests (based on patient reporting)

- Sniffin' Sticks Test
- Connecticut Chemosensory Clinical Research Center (CCCRC) orthonasal olfaction test
- University of Pennsylvania Smell Identification Test (UPSIT)
- Brief Smell Identification Test (BSIT)
- Butanol Odor Threshold Test (OLFACT-RL)
- Phenyl Ethyl Alcohol Smell Threshold Test (PEA)
- Jelly Bean Difference Test
- Alcohol Sniff Test

#### Objective tests

- Recording of olfactory evoked potentials
- Functional magnetic resonance imaging

### Counselling for anosmics

- Install smoke detectors at home/workplace.
- Use electric appliances instead of gas appliances.
- Check expiry dates on food packages.
- Label food in refrigerator to avoid confusion.
- Old food items should be checked by someone with normal smell function or discarded
- Since you may suffer loss of appetite, consciously maintain a balanced diet to prevent malnutrition.
- Altering the texture or color of food or addition of taste enhancers may stimulate interest in food or appetite.
- Make sure your home and workplace are open and well ventilated.
- Regularly service your car, electrical appliances and wiring to avoid short circuit.
- Stop smoking /snuff use.
- You may not be able to smell toxic chemicals in household cleaning fluids, disinfectants, insecticides etc, and may unknowingly exceed the safe dose, especially if working in a closed area. It is safer to use these with the help of family member or friend.
- Check with your doctor if you are using any medications that may cause decreased smell, and modify them according.
- You may need to change/ modify your job and home to accommodate lifestyle changes.



### Anosmia referral

- New onset: initiate management based on suspected pathology
- Persistent anosmia > 3 months: Detailed evaluation including imaging is warranted
- Persistent anosmia > 3 months following COVID-19: Imaging is not indicated in COVID confirmed cases.

### Treatment strategies

- Olfactory training therapy (Recommended)
- Steroid nasal spray (if associated nasal symptoms)
- Steroid drops or rinses (optional)
- Oral steroids (optional)
- Omega 3 supplements (optional)
- Vitamin A intranasal drops (weak recommendation)

### Olfactory Training Therapy

Olfactory training is a way to stimulate and speed recovery. It is a form of physiotherapy for nose. Amongst the various causes of sensorineural anosmia, it is found most useful in post-viral olfaction loss (PVOL). It is advisable to start olfactory training as soon as possible.

Clinical studies have shown that people with PVOL who undergo olfactory training have better sense of smell compared to those who did not. Olfactory training is more effective in younger individuals than the elderly. For patients with PVOL, olfactory training for one year yields better results than training for 16 weeks. Olfactory training with 12 odors is more effective than training with four odors. Higher odor concentrations used for training produce better results than low concentrations of odor.

### Smell the trivia

- Smell is the only sense with direct link to the limbic system of brain, which governs emotions, behavior and memory.
- Like fingerprint, each person has a unique odor print.
- The smell of chocolate triggers theta brain waves and causes relaxation.
- The distinctive, earthy, pleasant odor associated with rain, arises from a combination of volatile plant oils and geosmin (produced by various cyanobacteria and actinomyces).

### Conservative measures for

### Hyposmia/ Parosmia / Phantosmia

- Valsalva manoeuvre
- Head movement
- Nasal douching
- Stimulating the nose with deep breaths
- Stimulating the nose with strong smells, trigeminal nerve stimulants e.g.-menthol, horseradish, capsaicin (pepper) spray
- Medications e.g., Gabapentin



Typically, olfactory training is self-administered with four different odors twice daily for at least 24 weeks. The odors for training are presented in sniff bottles, jars or inhaler sticks. The patient sniffs twice daily for at least 20 to 30 seconds (without a break) on each of the four odors separately. Compliance and progress are monitored through regular office visits.

For further reading:  
[www.FifthSense.org.uk](http://www.FifthSense.org.uk)  
[www.abscent.org](http://www.abscent.org)

