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## Anosmia





### Not intended as Medical Advice

- This lecture is informational only and not intended to diagnose or suggest treatments to any individual listening to this lecture.
- We advise you to seek medical direction with your licensed primary care provider.



## Learning Objectives:

What defines Anosmia
Possible Causes

• Solutions

# Definition of Anosmia

- Anosmia is known as smell blindness and the inability to detect smells.
- It can be temporary or permanent
- Anosmia is an absolute inability to detect one or more smells
- Hyposmia is a decreased sensation of the sense of smell

## Causes:

- Many causes:
- Inflammation of the nasal mucosa
- Blockage of nasal passages
- Destruction of the temporal lobe
- Chronic meningitis or neurosyphilis
- Trauma
- Primary ciliary dyskinesia
- Chronic infections
- Cigarette smoking
- Medication side effects
- Aging
- And of course, a case of acute COVID19 or Long COVID

### **Treating the obvious**



- Treatment of an obvious cause such as an infection with antibiotics or botanicals
- Trauma and obstructions can be helped at times by ENT surgery
- Cessation of tobacco use (Smoking)
- Isolation of the medications that cause anosmia and removing or replacing them
- Intranasal zinc products
- Decongestant nose sprays
- Nifedipine
- Phenothiazines
- Antibiotics
- Antidepressants
  - NSAIDS
  - Cocaine abuse





One of the most common reasons in the past few years has been acute and chronic SARS-coV2 infections (COVID-19) that placed this condition at the top of mind.

One of the most common features of the early signs of COVID-19 infections is the lack of sense of smell and taste.

80% of COVID-19 patients exhibit a lack to sense of smell Anosmia was found a better predictor of COVID-19 than symptoms that include fever, cough or fatigue and this was based on a survey of 2-million participants in the UK and the US



### **Broader list of causes**



URI COVID-19 Nasal Polyps Hypogonadism Hypothyroidism TBI Dementia w/ Lewy bodies Tumors of frontal lobe Fibromyalgia MS DM

COPD Alcoholism Cushing's syndrome Stroke Epilepsy Radiation therapy Liver and Kidney disease Parkinson's disease AD Age Kallmann syndrome

Foster Kennedy syndrome Cadmium poisoning Tobaccoism Zinc deficiency Bell's Palsy Refsum's disease Sarcoidosis Zinc deficiency Paget's disease Myasthenia gravis



# Pathophysiology

#### MOA:

Olfactory receptor neurons extend from the olfactory bulb that sits on the cribriform plate of the brain. Each nasal cavity contains about 5 million receptor cells or neurons. There are 500 to 1000 different odor-binding proteins on the surface of these olfactory receptor cells. Each olfactory receptor cell expresses only one type of binding protein. These afferent olfactory neurons (cranial nerve I) facilitates the transfer of a chemical signal (particles in the air) to an electrical signal (sensed by afferent receptor neurons) which is then transferred and ultimately perceived by the brain. From the olfactory bulb, the signal is further processed by several other structures of the brain, including the piriform cortex, entorhinal cortex, amygdala, and hippocampus. Any blockage or destruction of the pathway along which smell is transferred and processed may result in anosmia.

COVID-19 has an effect on reduction in olfactory bulb volume and altered functional connectivity but with no discernible morphologic differences in cerebral olfactory regions.

(https://www.ncbi.nlm.nih.gov/books/NBK482152/ and doi: 10.3174/ajnr.A7713)



# Work Up

### Making the diagnosis:

Most important is a history and physical exam

Make sure you rule out the "physical stuff" like nasal polyps, chronic sinusitis, tobaccoism, etc.

May need to order some blood work to determine low levels of Zinc, Bvitamins, etc.

May need to order a CT/MRI of the head is you suspect a mass in the brain

But no need for any fancy or expensive blood biomarkers or other testing



# Treatment

#### Treatments

TBI causes are usually not successfully treated

Inflammatory causes are treated with intranasal or mucosal steroids

Nasal polyps if the problem can be surgically removed

With COVID-19 induced anosmia or ageusia a single dose of 1000mg of Curcumin had reported findings of improvement in one study. (2 subjects in a 2021 study; <u>doi:10.7759/cureus.17829</u>)

Case studies of the use of acupuncture on auricular points shows much promise. Found in a small 2022 study; doi: 10.1007/s00405-021-06872-9



#### Treatments

High dose of vitamin B12 (especially in those with insufficient serum B12 levels)

Other B-complex vitamins (B1-Thiamine) especially when elevated levels of HCY are found

Zinc

PEA especially in combo with Luteolin [PEA is: beta-phenylethylamine]

Lipoic Acid

NAC and Vitamin A

(www.wellnessresources.com/news/vital-nutrients-for-sense-of-smell with other references)





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