

Anosmia

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Anosmia refers to olfactory (smell) loss and can be unilateral or bilateral¹.

1 Testing

1.1 Testing Unilateral Anosmia

- Unilateral anosmia is difficult to diagnose since it is a symptom, not a sign, and patients rarely notice this change since the contralateral nostril can compensate¹.
- To avoid contralateral nostril compensation, the examiner must test each nostril separately¹.

1.2 Bilateral Anosmia

- Most patients are aware of bilateral anosmia and may even report decreased taste due to olfaction's contribution to the perception of flavor¹.

2 Possible Causes of Anosmia

- Head trauma
- Viral infection
- Nasal obstruction
- Neurodegenerative conditions
- Frontal lobe lesions

2.1 Head Trauma

- Trauma to the head can cause anosmia by damaging the olfactory nerves as they penetrate the cribriform plate of the ethmoid¹.

2.2 Viral infection

- Viral infections can damage the olfactory neuroepithelium¹.
- Examples include:
 - Covid-19¹

2.3 Obstruction

- Obstruction of the nasal passages can impair olfaction¹.

2.4 Neurodegenerative Conditions

- Bilateral anosmia is also seen in [Kallmann syndrome](#) (anosmic hypogonadism)¹
- Parkinson's disease¹
- Alzheimer's disease¹

2.5 Frontal lobe Lesions

- Intracranial lesions that occur at the base of the frontal lobes near the olfactory sulci can interfere with olfaction¹.
 - Possible lesions in this location include meningioma, metastases, basal meningitis, or less commonly sarcoidosis, a granulomatous inflammatory disorder that occasionally involves the nervous system, often causing cranial neuropathies¹.
- Frontal lobe deficits are often difficult to detect clinically, especially with small lesions¹.

- As a result, lesions at the base of the frontal lobes can sometimes grow very large while still causing little symptoms except besides anosmia.
 - Large lesions of the olfactory sulcus region, especially meningiomas, can cause Foster Kennedy syndrome where the patient experiences anosmia, ipsilateral optic atrophy (d/t tumor compression), and contralateral papilledema (d/t elevated intracranial pressure)¹.
1. Blumenfeld H. *Neuroanatomy Through Clinical Cases*. 3rd ed. Oxford university press; 2022.