

FOR DENTISTS AND DENTAL TEAMS

Halitosis



Halitosis, commonly known as bad breath, feter ex ore, or malodor, significantly impacts quality of life by causing social discomfort, embarrassment and potential psychological withdrawal. Estimates suggest halitosis affects approximately half of the global population, with 50-65% experiencing it at some point. While most cases (85-90%) originate in the oral cavity, systemic conditions can also cause halitosis.

Types and prevalence of halitosis:

1. Pathological halitosis (True Halitosis):

- **Oral halitosis (~85-90%):** caused by dental issues such as periodontal diseases, oral infections, poor hygiene, dental caries, and tongue coating.
- **Extra-oral (~5-10%):** associated with systemic diseases, including respiratory issues (sinusitis, bronchitis), gastrointestinal diseases (GERD, ulcers), and conditions like liver (feter hepaticus) or kidney disease.
- **Blood-borne halitosis (rare):** results from odorous substances absorbed into the bloodstream (e.g., diabetic ketoacidosis).

2. Physiological halitosis (common transient form)

Occurs mainly upon waking or during fasting due to decreased saliva, inadequate oral hygiene, or consumption of foods like garlic, onions, alcohol, or tobacco.

3. Pseudohalitosis and halitophobia (psychological)

Patients report unpleasant breath odor that is not confirmed by others, often linked to anxiety or fear of social embarrassment.

Causes of halitosis

Halitosis primarily arises due to bacteria in the oral cavity, producing volatile sulfur compounds (VSCs). Common oral bacteria implicated include *Solobacterium morei*, *Treponema denticola*, *Porphyromonas gingivalis*, and *Fusobacterium nucleatum*.

Factors increasing bacterial VSC production:

- Poor oral hygiene
- Dry mouth (xerostomia)
- Smoking and alcohol consumption
- Certain medications and infections



Assessment and diagnosis methods for halitosis evaluation include:

- **Gas chromatography** – objective detection of volatile sulfur compounds (VSCs) with devices like OralChroma, Halimeter, Breathtron. Emerging methods like electronic noses (E-noses) and biosensors offer rapid, real-time, non-invasive assessment.
- **Organoleptic method** – subjective odor evaluation by clinicians.
- **Sensory testing** – additional subjective methods, such as odor intensity scales and triangle tests, can be used to standardize halitosis evaluation.
- **Autofluorescence** – potential research-based tool for detecting bacterial biofilm activity, though not widely applied in routine clinical diagnosis.

Treatment recommendations:

Management of halitosis involves identifying and addressing the underlying cause. Treatment priority:

- **Oral hygiene improvement (primary preventive measure)** – regular brushing, flossing and professional dental cleanings, daily tongue cleaning with a tongue scraper and periodontal treatment.
- **Dietary and lifestyle adjustments** – reducing odorous foods (garlic, onions), alcohol, tobacco, and protein-rich foods. Hydration to avoid dry mouth.
- **Advanced treatments (for persistent halitosis)** – use probiotics to balance oral microbiota, use of mouthwashes, chewing gums, lozenges, toothpaste containing alcohol, chlorhexidine, zinc, and essential oils and laser therapy (Er:YAG, Nd:YAG) and antimicrobial photodynamic therapy (aPDT).
- **Referral to specialists** – consider referrals to healthcare providers for systemic issues to gastroenterologists, ENT specialists, or psychiatrists (for halitophobia).



Complications and health implications

Persistent halitosis can be associated with broader systemic issues, including cardiovascular, gastrointestinal (e.g., GERD, IBD), respiratory conditions, and negative psychological impacts such as social stigma, reduced self-esteem, and anxiety.

Conclusion

Halitosis impacts significantly individuals' physical and psychological well-being. Dentists and healthcare professionals play a crucial role in diagnosis, management, and education about preventive measures. An interdisciplinary approach ensures effective treatment and management, especially in complex cases involving systemic diseases or psychological factors.



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