

# “Oral Malodour and Halitosis”- A Brief Review on Assessment and Management of Simple Rather Disturbing Condition

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## ABSTRACT

Halitosis is any disagreeable breath odour. The origin of halitosis may be related both to systemic and oral conditions, but a large percentage of cases, about 85%, are generally related to an oral cause. Oral causes are related to deep carious lesions, periodontal disease, oral infections, peri-implant disease, pericoronitis, mucosal ulcerations, impacted food or debris and, mainly, tongue coating. Volatile sulphur compounds (VSCs) and other elements appear largely responsible for the malodour. Thus, the aim of the present review was to describe the etiological factors, diagnosis and the therapeutic mechanical and chemical approaches related to halitosis.

**Keywords:** Halitosis; oral malodour; volatile sulphur compounds; organoleptic analysis.

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## INTRODUCTION

### “Oral Halitosis”

Bad breath is an unpleasant problem that affects people socially and psychologically. It is a subjective perception after smelling some ones breathe. It can be pleasant, unpleasant or even disturbing, if not repulsive. **Bad breath**, medically called **halitosis**, can result from poor dental health habits and may be a sign of other health problems. These terms are not synonymous with the oral malodor which has its origin in oral cavity.<sup>1</sup>

Breath malodor should not be confused with disturbing odor cause by food intake example garlic and smoking because this odor does not reveal a health problem. Same is true for morning breath habitual experience on awakening. This malodor is cause by decrease salivary flow and increase putrefaction during the night and spontaneously disappears after breakfast or oral hygiene. A persistent breath malodor, by definition, does reflect some pathology.<sup>2</sup>

### Genuine Halitosis

- a. Physiological Halitosis
- b. Pathological Halitosis
  - i. Oral
  - ii. Extra-oral

### Pseudo Halitosis

Individuals complain of the existence of halitosis though it is not perceived by others. This condition can be managed effectively by counseling (using literature support, education and explanation of examination results) and simple oral hygiene measures.

## Halitophobia

Some individuals continue to insist that they have halitosis even after they have been treated for genuine or pseudo-halitosis. Such individuals are categorized as halitophobic. Halitophobia may be considered when no physical or social evidence exists to suggest that halitosis is present.

### ETIOLOGY AND ASSOCIATED FACTORS

#### Physiological

**Morning breath** → Stagnation of saliva, lack of movement of the cheek and tongue and also to a decrease in the BMR during sleep which inhibits self-cleansing of the oral cavity<sup>3</sup>

**Young children 2-5 yrs** - exhibit malodor due to tonsil crypts lodging food & debris.

**Old age group** – due to unclean dentures & putrefaction of stagnated saliva

**Excessive smoking** - not only causes fetid breath but also decreases the salivary flow and further increases the severity of the condition.

**Ill fitting dentures causing "Denture breath"** "Due to vulcanite resins –its porous nature encourages accumulation of food.

**Hormonal cause:** - with increase in progesterone level during menstrual cycle, a typical breath odor can develop. Evidence also indicates that VSC levels in the expired air are increased twofold to fourfold about the day of ovulation and in the peri-menstrual period.

**Table 1:**

Disease	Odor characteristics
Diabetes	Acetone, fruity
Liver failure	Sweetish, musty
Lung abscess	Foul, putrefactive
Xerostomia (dry mouth)	Fetid
Scurvy (Vit. C deficiency)	Foul breath from stomach inflammation

#### Drugs Causing Oral Malodor

Medications containing iodine, such as iodinated glycerol, Antihistamines, Anti neoplastic agents, Diuretics, Antihypertensive drugs

### DIAGNOSIS

**"Listen to the patient and the patient will tell you diagnosis"**. It is important to determine initially whether the complaint of bad breath is a primary reason for seeking help or if it is one of the several complaints that a patient is having. Complaints of disturbed taste should also be noted, since taste dysfunction may be caused not by problems with taste but by alterations in the perception of smell.

Patient asked about the **medical history**, the frequency (e.g. every month), time of appearance with in a day (e.g. after meals can indicate stomach hernia), whether others (non confident) have identified the problem (excludes imaginary breath odor), what medication are taken, whether the patient has dryness of mouth or other symptoms.

Particular emphasis should be placed on a thorough history of nose, nasopharynx and sinus diseases. A history of GI disorders like gastritis, or duodenal or gastric ulcers also show malodor. Medications can also cause bad breath including antimicrobial agents, antirheumatic, antihypertensive and psychopharmacologic drugs. The drugs, which cause halitosis due to xerostomia, include analgesics, anticholinergics, antidepressants, antihypertensives and psychotherapeutics.

### Dental History

A detailed history of oral hygiene habits is required to assess the patient's education, ability and commitment to the maintenance of oral hygiene. The patient's frequency of brushing and flossing use of mouth rinses, types of toothbrushes and toothpaste, is useful information for improving oral care.

**Diet and Habit history-** alcohol and tobacco use, odoriferous foods, such as garlic, onion and some ethnic foods.

**Oral examination-** carious teeth, tongue coating, deposits on teeth.

### ASSESSMENT AND ANALYSIS OF BAD BREATH

#### Self assessment-

- ▶ Cupped breath - The subjects are instructed to smell the odor emanating from their entire mouth by cupping their hands over their mouth and breathing through the nose (figure-1).



Figure 1:

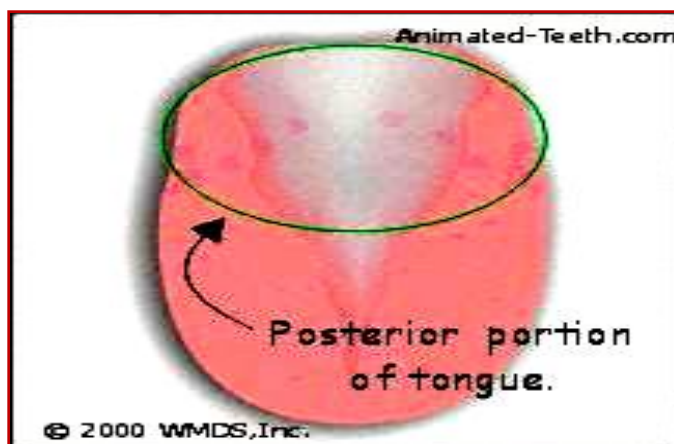


Figure 2

### ► Spoon test:

Assesses the odor emanating from the dorsum of the posterior tongue; (figure- 2) a plastic spoon is used to scrape and scoop material from the back region of the tongue. The odor is judged by smelling the spoon after 5 seconds at a distance of about 5 centimeters.<sup>5</sup>

**Wrist lick test:** Subjects are asked to extend their tongue and lick their wrist in a perpendicular fashion. The presence of odor is judged by smelling the wrist after 5 seconds at a distance of about 3 cm.

### Saliva odor test:

Involves -having the subject expectorate approximately 1-2 ml of saliva into a petridish. The dish is covered immediately, incubated at room temperature for five minutes and then presented for odor evaluation at a distance of 4 cm from the examiner's nose.

### Subjective measurement –

- ☉ Oral cavity odor: smelling the air while the patient counts from 1 to 20 and then scoring it.
- ☉ Breath odor: the subject expire through the mouth while the judge smell both at the beginning (determine by oral cavity and systemic factor) and at the end (originating from the bronchi and lungs) of the expiration.
- ☉ Tongue coating: the judge smells a tongue scraping. This is also presented to the patient or the confident to evaluate whether this smell is similar to the experienced malodor.
- ☉ Nasal breath odor: the subject expired through the nose, keeping mouth close when the nasal expiration is malodorous, where as the air expired through the mouth is not, nasal/ paranasal cause can be suspected.<sup>3</sup>

### Objective instrumental analysis

Organoleptic test: a trained judge sniffs the expired air and accesses the whether or not this is unpleasant using intensity rating normally from 0 to 5.<sup>4</sup>

**Table 2:**

ORGANOLEPTIC SCORES (0- 5)	
0 - no appreciable odor	3 - moderate odor
1 - barely noticeable odor	4 - strong odor
2 - slight but noticeable odor	5 - extremely foul odor

### Specific Character of Breath Odor

A “rotten eggs” smell is indicative of VSCs. A sweet odor, which some describe as that of” dead mice,” has been associated with liver insufficiency; besides VSCs, aliphatic acids (butyric, isobutyric, propionic) accumulate. The smell of “rotten apples” has been associated with unbalanced insulin-dependent diabetes, which leads to the accumulation of ketones.

A “fish odor” can suggest kidney insufficiency characterized by uremia and accumulation of dim ethylamine and trimethylamine.(Trimethylaminuria, a rare metabolic disease)

### Halimeter:

The sulfide meter uses a voltametric sensor that generates a signal when exposed to sulfur-containing gases (figure 3).



**Figure 3:**

### MANAGEMENT

- Patient education and oral hygiene instructions
- Tongue scraper
- Inter-dental cleaning and the tooth brushing.
- MOUTHWASHES- Chlorhexidine, Triclosan
- Topical Antimicrobial Agents: Azulene ointment with a small dose of Clindamycin

### For Pseudo-Halitosis and Halitophobia:

- ▶ Counselling
- ▶ Psychotherapy.

### MASKING THE MALADOR

Treatment with rinses, mouth sprays, and lozenges containing volatiles with a pleasant odor have only a short term effect. A typical example is mint containing lozenges.<sup>5</sup>

Another pathway is to increase the secretion of saliva; a larger volume of soluble volatile sulphur compounds. The latter can also be achieved by ensuring a proper liquid intake or by using a chewing gum.

### CONCLUSION

Bad breath, also known as halitosis, is a symptom in which a noticeably unpleasant breath odour is present. It can result in anxiety among those affected. It is also associated with depression and symptoms of obsessive compulsive disorder. Therefore, a proper diagnosis and determination of the etiology allow initiation of proper treatment and aids in good health.

### CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests regarding the publication of this paper.

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