TREATING THE BAD BREATH PATIENT

Anne Bosy RRDH MEd MSc
PRESENTATION CONTENT

• Discussion of possible causes of breath odour.

• Psychological and physical harm suffered by those who have breath odour.

• Diagnosis and treatment of the bad breath patient.
Bad Breath & Periodontal Disease

• High prevalence
  ▫ 50% of the population have halitosis, in 20% of the population it is chronic or severe
  ▫ Current statistics indicate 75% of the population have periodontal disease
Do you have patients in your practice that have breath odour?

- How do you tell your patient that he/she has bad breath?

- What treatment do you use for this problem?
Research

- No significant difference between levels of bad breath in subjects with and without periodontal disease. Substantial breath odour may be present in individuals without periodontitis.

- Tongue dorsum and approximal plaque are important sources of bad breath.

- Tongue and tooth sites indicated the presence of red complex bacteria.

- Rinsing with 0.2% chlorhexidine resulted in significant reductions of VSC’s and breath odour. (VSC change was 41% and mouth odour change was 65.5%)

Fresh Breath Clinic, Toronto

• Fresh Breath Clinic began in 1993 – adapted the system developed at U of T and continued to research bad breath issues.

• Began microbiological testing of tongue and teeth and soon added throat sampling. This was very helpful in assessment of the problem.

• Treatment using 0.2% CHX insufficient – so new treatments needed to be developed. Experimented with many OTC products then developed a system of antibiotic rinses and creams.
BAD BREATH IN A “HEALTHY” POPULATION

• Good oral hygiene with a few localized pockets and a few bleeding points.

• Biofilms on tongue base, tongue dorsum and subgingivial biofilm are sources of odour.

• Cryptic tonsils with tonsilloliths often add to odour and discomfort.

• Medical conditions, side effects of pharmaceuticals and patient’s diet contribute to breath odour.
Tonsilloliths or Tonsil Stones
FACTORS THAT CONTRIBUTE TO BREATH ODOUR

**Microbial Sources:** Account for 85 to 90% of breath odour

- Gram-negative bacteria, spirochetes, vibrios
  - There **MAY or MAY NOT** be significant periodontal markers in the form of periodontitis, gingivitis, caries

**Nasopharyngeal Conditions:** sinus infections (postnasal drip), tonsillitis, tonsilloliths (very common)

**Pathological Sources:** diabetes, hiatal hernia, reflux, oral cancers*, renal failure*, liver cirrhosis** Not often seen

**Oral Conditions:** poor salivary flow/dry mouth
FACTORS THAT CONTRIBUTE TO BREATH ODOUR

Pharmaceutical Sources: antihistamines, tranquilizers may have slight odour and bad taste

Food and Hunger Odours:
- Garlic, onions, spices, coffee
- Irregular meal pattern, for example, no breakfast-late lunch/no lunch will result in ketone breath.

Strenuous exercise: without sufficient food intake will also result in ketone breath. Need to do carbohydrate loading prior to exercise.

Habits: smoking, alcohol intake
EFFECT OF BAD BREATH ON PERSONALITY OF PATIENT

- Neurotic behavior
- Social withdrawal
- Poor self image
- Compulsive use of mints and gum
- Considerable stress related to this condition
HALITOSIS CLASSIFICATIONS

True halitosis – moderate to severe, may or may not experience bad taste. May become habituated to the odour. VSC’s harm the olfactory senses so can’t taste or smell.

Trimethylnurila – rare metabolic disorder resulting in both mouth and body odour. Treatment not available.

Halitophobia – no odours but strong belief that odours are strong, disgusting, out of control and cannot be convinced otherwise. Avoids social contact. Very difficult to treat.
TRUE HALITOSIS CLASSIFICATIONS

True halitosis

- **Severe Halitosis**: strong breath odour, usually no bad taste, very high numbers of microorganisms. Taste and smell senses affected. Often cannot tell there is a problem. Responds well to treatment.

- **Moderate Halitosis**: moderately strong, often experiences bad taste. Has substantial microorganisms. Responds well to treatment.

- **Mild Halitosis**: little or no odours but experiences bad taste. Has moderate numbers of microorganisms. Sometimes difficult to get a good response as bad taste may continue. Treatment depends on microbiology of the mouth.
Unpleasant Taste Sources

Taste complaints vary and may be any one of the following: metallic, bitter, salty, sour, foul, fecal, stale, dry, pasty

- Taste results from bacteria and byproducts.
- Taste receptors pick up the chemicals present in the saliva.
- Odour is noticeable when:
  - Saliva cannot absorb all the chemicals and they become volatile (VSC’S)
Methyl Mercaptan

Most potent volatile sulphur compound in breath odour

| Associated with disturbing taste perception | Depression of white blood cell formation | Markedly alters cell shape, inhibits protein synthesis | Degradation of collagen |
**Hydrogen Sulphide**

<table>
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<tr>
<th>Description</th>
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<td>Irritating to mucous membranes and to the respiratory tract</td>
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<td>Affects nervous system</td>
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<tr>
<td>Harmful (toxic) chemical to patients</td>
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<td>Difficult to tolerate the combined odours of hydrogen sulphide and methyl mercaptan</td>
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WHY SHOULD ODOUR BE EVALUATED

Some measurement of odour is required as a base for treatment and for feedback to the very concerned patient.

During evaluation, a comparison of before and after is necessary.

Having the patient smell the mirror and the floss/soft-pick pre and post treatment provides something concrete rather than a “feeling”
Portable Gas Chromatograph
OralChroma® before treatment

Date: 12/03/2005 10:42  Device ID: 0000
Result

High

+ 504

Cognitive threshold

- 112

Low

Gas  Hydrogen Sulfide H2S  Methylmercaptan CH3SH  Dimethyl Sulfide (CH3)2S

Unit: ppb

Judgment

Significant halitosis e malodor - likely with of oral hygiene, perio digestion/metabolism origin.

Halitosis exists and detectable - likely origin

For measurements halitosis may exist not be detectable o

The last data

+  -  -

H2S  CH3SH  (CH3)2S

+  +  -

H2S  CH3SH  (CH3)2S

+  +  +

H2S  CH3SH  (CH3)2S

+  +  +

H2S  CH3SH  (CH3)2S

+  -  -

H2S  CH3SH  (CH3)2S

-  -  -

H2S  CH3SH  (CH3)2S

+ The case of a cognitive threshold or more.

- The case of lower than a cognitive threshold.
## Differences between those participants with BAD TASTE and those with NO BAD TASTE

### Bad Taste:
- **Number of people:** 76
- **Measurements /5**
  - VSC: 118.7
  - Mouth air: 2.7
  - Tongue: 2.4
  - Floss: 2.8
- **Microorganisms:** Moderate Gram-negative cocci and bacilli, spirochetes, yeast
- **Response to chlorhexidine rinses:** improved: 53.9%

### No Bad Taste:
- **Number of people:** 21
- **Measurements /5**
  - VSC: 198.3
  - Mouth Air: 3.3
  - Tongue: 3
  - Floss: 3.9
- **Microorganisms:** Very high numbers of Gram-negative cocci and bacilli, spirochetes, yeast
- **Response to chlorhexidine rinses:** improved: 52.3%
### Differences between participants with ODOUR and those with NO ODOUR

**Reporting Odour:**
- Number of people: 27
- Measurements:
  - VSC: 170.2
  - Mouth air: 3.1
  - Tongue: 2.5
  - Floss: 3.7
- Microorganisms: Many Gram-negative cocci and bacilli, spirochetes, yeast
- Response to chlorhexidine rinses: improved: 59.3%

**Reporting No Odour** - told by family
- Number of people: 6
- Measurements:
  - VSC: 109.0
  - Mouth Air: 1.0
  - Tongue: 1.0
  - Floss: 3.0 *
- Microorganisms: low to moderate Gram-negative cocci and bacilli, spirochetes, yeast
- Response to chlorhexidine rinses: improved: 83.3%
Fresh Breath Clinic Five Step Program

1. **Diagnosis** – included medical history, breath history, organoleptic testing, digital breath evaluation, pH, caries and periodontal evaluation, diet assessment, oral hygiene, saliva type and amount and microbiology testing of teeth, tongue and throat

2. **Treatment** – one of the antibiotic rinses, diet changes, oral care

3. **Evaluation** – two week evaluation of breath odour – included repetition of diagnosis

4. **Maintenance and Check-up** – patients chose a chlorhexidine and an OTC rinse by tasting and selecting best feel- two weeks of CHX then OTC rinse with CHX on Mondays and Thursdays

5. **Retesting** every 6 to 12 months
TREATING THE BAD BREATH PATIENT

Pre appointment instructions are important for treating breath patients

Patients should avoid the following prior to an appointment:

- Strong foods, perfumes and colognes
- Mouthwashes, gums and drinks
- Antibiotic medication (see patient two weeks after prescription is finished)
TREATING THE BAD BREATH PATIENT

Initial Appointment: (remember pre-appointment instructions)

1. Medical history/health history.
2. Breath History Questionnaire – discuss prior to beginning clinical component of appointment.
3. Dietary Record sheet or Food Preference sheet – can be done before or after the clinical component.

4. Clinical Component
   • Measurement of breath odour
     • Electronic measurements
     • Organoleptic measurements
     • Patient feedback
   • Intra-oral and extra-oral evaluation including salivary assessment, pH
   • Oral microbiology sampling
   • Periodontal markers (BOP, Pocket depth)
   • Appliances (dentures, etc) – cleanliness, odours
Discuss the results at the end of the Initial Appointment

- Emphasize those conditions that would contribute to the breath problem
- Grade the breath odour problem (severe, mild, location)
- Discuss the dietary record and make recommendations
- Select the treatment options depending on the problems that were identified.
  - For 80% of these patients, the major cause is gram-negative bacteria protected by a very retentive biofilm
  - Antibiotic rinses were the most effective – these were used for two weeks
Purpose of Nutritional Assessment

- To establish client’s nutritional intake
  - Lack of proper nutrients affects the immune system and promotes the risk of periodontal disease and breath odour.
- To establish client’s eating pattern
  - Irregular patterns contribute to poor health and bad breath
TWO WEEKS LATER – EVALUATE SUCCESS OF TREATMENT

- **Check** for changes, similar to what you do for the periodontal program.

- **Retake** the microbiology samples at this time. Discuss report at the six week appointment.

- **Review** nutrition goals and oral hygiene instruction.

- **Prescribe** maintenance rinses
SIX WEEKS LATER – EVALUATE PROGRESS

- Evaluate progress, ask how the rinses are working – if this is a problem, recommend another type of rinse
  - If meal pattern was one of the problems, discuss goals
  - If odours have returned, find out the reason behind this:
    - Stress
    - Non Compliance
    - Infection from significant other
- Correct the Problem
- Set up appointment in appropriate interval. (3-6 months)
BREATH ODOUR APPOINTMENTS - RECARE

- Patients become anxious and feel that they are not progressing.
- The Breath Recare appointment will catch the problem early. It is also an appointment that reassurces the patient that all is going well.
- Collecting bacterial samples every 6 to 12 months helps to predict whether the biofilm is stable or shifting to disease.
Five Steps in Breath Treatment

1. Diagnosis – important to establish a baseline to measure against. Patients need to see progress.
   ▫ Health history, breath history, oral health, pH, microbial sampling, breath odour, oral care and nutrition (habits, patterns).

2. Treatment
   ▫ antibiotic rinse and home care, improved diet and meal patterns, referral for any systemic conditions

3. Evaluation – very important for patient reassurance
   ▫ Confirm absence of bad breath or identify areas that may contribute, repeat microbiology sampling, check for diet implementation.
Five Steps in Breath Treatment

4. Maintenance
   ▫ Together with the patient, set up a maintenance system to control bacteria and other problems arising from diet, etc
   ▫ Review home care routine

5. Monitor
   ▫ **Six week Check Up and Recare Appointments are important**
   ▫ Re-evaluate on a regular basis to see if maintenance is effective or if changes are needed
   ▫ Maintain regular debridement appointments
PROBIOTICS

• Replacement of bacteria with S. salivarius appears to provide alternative therapy for long term reduction of oral malodor.
• Called Throat Guard, it works well for some patients but not for all.
• May be used right after the two weeks of chlorhexidine.
• Has its own chlorhexidine – rinse, wait for an hour, take a lozenge every four hours to 4 a day.
• Enough for 3 days of treatment