In 1999 a multi-disciplinary halitosis clinic was established at the University Hospital in Leuven, Belgium. Specialists from periodontology, internal medicine, ear, nose and throat (ENT), and psychiatry collaborated on the clinical findings of patients seeking treatment. The first 2,000 patients to seek treatment in this clinic were evaluated to determine the cause and severity of oral malodor.

Prior to their appointments, patients received written instructions to refrain from eating onions, garlic or spicy food for two days prior to their visit and to avoid drinking alcohol or coffee for 12 hours before the visit. They were instructed to eat breakfast and brush without toothpaste on the morning of their visit. All exams were conducted in the morning and consisted of organoleptic testing of smelling the patient's mouth air while holding the mouth open without breathing. Next, mouth air was smelled as the patient counted from 1 to 11. Expelled nose air was also smelled and scored. A periodontal examination was completed and tongue coating was scored. Following these tests, a Halimeter was used to measure volatile sulphur compounds in mouth air.

Oral causes for bad breath were found for 76 percent of subjects, with tongue coating being the predominant cause in 43 percent of subjects. Gingivitis and periodontitis accounted for 11 percent and when combined with tongue coating, reached 18 percent. Pseudo-halitosis or halitophobia accounted for 16 percent of cases while ENT and extra-oral causes amounted to only four percent.

Clinical Implications: Since the primary cause of halitosis is oral in nature, dentists and dental hygienists are the ideal professionals to address this condition.

Toothbrushes don't increase recession

According to published studies, almost 60 percent of adults older than 30 years of age have at least one site with 1mm of recession. There are many factors that influence recession, so identifying a specific factor is difficult. Some have speculated that brushing with a powered toothbrush might increase recession, however a recent study showed a 0.1mm reduction in recession around implants after using a powered toothbrush for 12 months.

Researchers at Newcastle University in the UK compared changes in gingival recession after using either an Oral-B 35 manual toothbrush or the Philips Sonicare Elite. Subjects were instructed to brush twice daily for two minutes with Colgate Total toothpaste. The 52 subjects had recession of at least 1mm at the start of the 12-month study.

Examinations and dental hygiene care were performed every three months and toothbrushes and toothbrush heads were collected and replaced at that time to evaluate bristle wear.

No differences were seen between the groups for recession, attachment loss, bleeding upon probing and probing depths. Thirty-one percent of recession sites in the Sonicare group and 18 percent in the manual brush group showed 1mm reduction in recession. Ten percent of recession sites in the Sonicare group and 12 percent in the manual brush group showed an increase of 1mm in recession. One patient in the Sonicare group showed a reduction of 2mm at one recession site.

Clinical Implications: Switching patients from a manual toothbrush to a Sonicare Elite powered toothbrush is not likely to result in an increase in gingival recession. You may even see a slight reduction in recession for some patients.


Ulcer bacteria reduced with good oral hygiene

_Helicobacter pylori_ (H pylori) is responsible for gastritis, peptic ulcers and is a risk factor for gastric cancer. One in 10 Americans will develop an ulcer during their lifetime while 20 percent of those younger than 40 and half of those older than 60 have _H pylori_ in their system. It can live in oral bacterial biofilm and is responsible for reinfection of the gut after treatment.

Triple therapy is most effective in treating ulcers and consists of two antibiotics and an acid suppressor. Effectiveness of this therapy is confirmed with a urea breath test. Patients drink a urea solution containing carbon atoms. If _H pylori_ is still present in the gut, it breaks down the urea, releasing the carbon atoms which are carried in the blood stream to the lungs and exhaled.

Researchers in China measured the effect of professional oral hygiene on reducing reinfection of the gut with _H pylori_ from the mouth. In a group 100 patients tested and treated for gastric ulcers, half were told to continue their regular oral hygiene and the other half received supra and subgingival instrumentation, thorough oral hygiene instructions for brushing three times daily and cleaning between the teeth with floss or toothpicks. This group was seen every other week for six months.

Examinations and dental hygiene care were performed every three months and toothbrushes and toothbrush heads were collected and replaced at that time to evaluate bristle wear.

At six months, all subjects took the urea breath test for gastric _H pylori_. In the control group, 84 percent were positive for the bacteria and in the test group only 19.6 percent were positive.

Clinical Implications: Patients undergoing treatment for gastritis or ulcers should also receive thorough professional dental hygiene care and be instructed in effective daily plaque control measures.

Diet may improve periodontal health

Antioxidant micronutrients provide an important protective role in tissue health. Oxidative stress is part of periodontal tissue destruction associated with periodontal disease. Reduced intake of vitamin C is associated with an increased risk for periodontitis.

Researchers at Queen’s University in Belfast, Northern Ireland evaluated a group of 1,200 men between 60 and 70 years of age to determine if low serum levels of antioxidants are found with increasing levels of periodontal disease. These men are part of a larger heart disease study that has been underway since 1991.

Subjects received a periodontal exam by one of four dental hygienists to determine the presence and extend of periodontal disease. Twenty-five percent of the group were categorized as low-threshold periodontitis (two interproximal sites with 6mm of attachment loss and at least one 5mm pocket) and eight percent fell into the high-threshold periodontitis group (more than 15 percent of sites with attachment loss of 6mm or more and at least one deep pocket 6mm or more). The rest of the group were either healthy or between the two identified disease levels.

Blood was drawn from all subjects for antioxidant testing. Low serum levels of two antioxidants were associated with increased prevalence of periodontitis: beta-cryptoxanthin and beta-carotene. These carotenoids are usually found in yellow, red and orange fruits and vegetables. These substances may help regulate cell to cell communication and gene expression. Beta-cryptoxanthin is helpful in preventing bone destruction, so low levels in periodontitis may be linked with bone loss.

Clinical Implications: Encouraging a healthy diet that includes fruits and vegetables that contain antioxidants may benefit periodontal health.


Antibiotics – right or wrong for perio?

Treating periodontal disease involves reducing the bacterial load to a level compatible with the individual’s immune response. For some, that can be done with supra and subgingival mechanical therapy and effective daily plaque control. For others, smoking, stress, a compromised immune system and systemic diseases are factors that will allow the disease to progress, despite traditional therapy. In these cases, systemic antibiotics have proven helpful.

Several published studies demonstrate the effectiveness of systemic antibiotics in preventing the need for further periodontal therapy, based on the reduction in the number of probing sites measuring 5mm or more that would require further periodontal treatment. The most effective drug combination is metronidazole and amoxicillin (MA). This combination is more effective than tetracycline or azithromycin. Other combinations of antibiotics have been tested, with less dramatic results.

Looking closer at the research shows that those with measurable subgingival P. gingivalis at baseline showed good outcomes while others with no measurable P. gingivalis experienced no difference in probing depth reductions or a reduction in the number of sites measuring 5mm or more when taking either the placebo or the MA antibiotics. Therefore, the systemic antibiotics should not be prescribed for those who do not have measurable P. gingivalis levels at baseline.

Future research studies should provide baseline microbiology prior to administering MA antibiotics to determine if the infection involves P. gingivalis. Based on current findings, not all perio patients will benefit from systemic antibiotics.

Clinical Implications: Deciding to use systemic antibiotics in the treatment of periodontitis should be based on the subgingival bacterial profile presented at baseline, looking for the presence of P. gingivalis.