



Symposium

Halitosis - how to manage in your dental office

GABA International AG, Therwil, Switzerland

Friday, 2nd of September 2011, 10:30 – 12:30

Theoretical Building of the Semmelweis University, Hall 2

Programme

GABA International AG

Grabetsmattweg
CH-4106 Therwil
www.gaba.com

Symposium
Halitosis – how to manage in your dental office

Programme

Friday, 2nd of September, 2011

- 10:30 Professor Crispian Scully
Dental and clinical aspects of halitosis
- 11:10 Professor John Greenman
Biofilms and oral malodour
- 11:50 Dr. Karin Kislig
Halitosis – recommendations for the dental practitioner

Chairing: Professor Jolán Bánóczy

Co-Chairing: Professor John Greenman

Chair: Professor Jolán Bánóczy, Budapest



Professor Emeritus, Dept. of Oral Biology, Faculty of Dentistry, Semmelweis University of Medicine, Budapest, Hungary

EDUCATION

- o M.D. 1953 Medical University, Budapest, Hungary
- o D.M.D. 1956 Faculty of Dentistry, Semmelweis University of Medicine, Budapest, Hungary
- o Ph.D. 1970 Hungarian Academy of Sciences, Budapest
- o D.Sc. 1978 Hungarian Academy of Sciences, Budapest

PROFESSIONAL EXPERIENCE

- o Assistant Professor Dept. of Maxillo-Facial Surgery and Dentistry, Semmelweis University of Medicine, Budapest, 1953-1970
- o Professor and Director Dept. of Cariology and Endodontics, Semmelweis University of Medicine, Budapest, 1974-1993
- o Dean School of Dentistry, Semmelweis University of Medicine, Budapest, 1980-1986
- o Professor, Dept of Cariology and Endodontics, Dept. of Oral Biology, Semmelweis University of Medicine, Budapest, 1993-1999
- o Professor emeritus 1999-present

FIELD OF INTERESTS

Cariology, preventive dentistry, oral medicine, oral precancerous lesions, dental education.

PUBLICATIONS

- o Books, bookchapters: 33 (in English, Japanese, French, German and Hungarian language)
- o Scientific papers: 386 (about 195 in foreign languages)
- o About 400 lectures, from these appr. 300 as invited speaker at several Universities of Sweden, Finland, Denmark, Germany, France, Switzerland, Italy, Netherlands, England, Poland, Czechoslovakia and Belgium. Lecture trips in several cities of USA, two in Cuba, Bombay, India and Japan.

MEMBERSHIPS AND POSITIONS HELD

- o W.H.O. Head of Collaborating Center for Oral Precancerous Lesions, 1967-1980
- o ORCA Co-President, 1980-1982
- o Finnish Dental Society, Corresponding Member, 1981-present
- o W.H.O. Advisory Expert, 1981-2000
- o FDI, Fédération Dentaire Internationale, CORE Consultant, 1983-1993
- o German Dental Society, Honorary Member, 1984
- o MFE, Hungarian Dental Association, President, 1991-2000
- o Borrow Dental Milk Foundation, Trustee, Chairman, 1988-present
- o Hungarian Academy of Sciences, Consultant Member, 1990-2009
- o ADEE President, 1992-1993
- o ADA American Dental Association, Honorary Member, 1992
- o University of Zagreb, Visiting Professor, 1994-present
- o ORCA Honorary Member, 1995
- o ADEE Honorary Member, 2005

EDITORIAL BOARD MEMBER:

- o Caries Research, 1980-1989
- o Zahn-, Mund- u. Kieferheilkunde, 1980-1990
- o Fogorvosi Szemle (Hung.), 1974-present
- o Community Dentistry and Oral Epidemiology, 1991-1999
- o Lege Artis Medicinae (Hung.), 1991-2005
- o Journal of Clinical Dentistry, 1993-2006
- o Acta Stomatologica Croatica, 1996-present
- o European Journal of Dental Education, 1996-present

Speaker: Professor Crispian Scully, London



Crispian Scully is Emeritus Professor, University College London (UCL); Professor of Oral Medicine at the University of Bristol; Consultant at University Hospitals Bristol NHS Foundation Trust; Honorary Consultant at University College Hospitals NHS Foundation Trust, Great Ormond Street Hospital for Children and Harley Street Clinic, London, and at the European Institute of Oncology in Milan; Chairman of the International Federation of Oral Medicine; President of the International Academy of Oral Oncology; Secretary of the British Society for Oral Medicine; member of the International Committee of the American Academy for Oral Medicine; and Royal College of Surgeons Edinburgh Dental Council. He is an examiner for the European Association for Oral Medicine, and Visiting Professor at the Universities of Athens, Bath, Bristol, Edinburgh, Helsinki, Hertfordshire, Middlesex, Peninsula and West of England. He is on the Specialist lists of the UK General Dental Council, in Oral Medicine, in Special Care Dentistry and in Oral Surgery. Professor Crispian Scully is a Patron of the British School of Osteopathy; Trustee of the Mouth Cancer Foundation; Trustee of the Oral and Dental Research Trust; Advisor on the Oral Cancer Foundation; and an Advisor to the Swinfen Charitable Trust. Professor Crispian Scully is an Editor of *Oral Diseases*, and *Medicina Oral*, and Associate Editor of *Journal of Investigative and Clinical Dentistry*. He founded *Oral Diseases* and *Oral Oncology* and is on several Editorial Boards. He has presented throughout the world and has published over 1000 scholarly works including > 900 papers cited on MEDLINE, over 390 original research papers, 200 review articles, 150 chapters in books and 50 clinical papers. He has described a number of new oral diseases. Professor Scully has published over 40 textbooks mainly on oral medicine, oral surgery, oral pathology and special care dentistry. His book *Medical Problems in Dentistry* was awarded the Doody Prize as one of the top-selling medical or dental books worldwide and the Glaxo prize; his *Atlas of Oral and Maxillofacial Diseases* has won British Medical Association (BMA) High Commendation; and *Oral and Maxillofacial Medicine* won the Society of Authors /Royal Society of Medicine Prize and also BMA High Commendation. He has personally received the Colgate-Palmolive Research Prize of the International Association for Dental Research, the University of Helsinki Medal of Honour, the University of Granada Gold Medal, the University of Santiago de Compostela Dental Award for Clinical Research, and eponymous University lectureships in USA (California, Harvard), UK (London, Oxford), Europe (Belgrade, Helsinki, Lubjiana), the Royal Colleges of Surgeons in England and in Glasgow, and the Royal Army Medical Corps. Professor Crispian Scully has received the Fellowship of UCL; Doctorates from the Universities of Athens, Granada, Helsinki and Pretoria; the Award of the Spanish Society for Oral



Medicine; and Fellowship of the Greek Society for Oral Medicine. He was awarded the UK Dental Award for the Most Outstanding Achievements in Dentistry, and Commander of the Order of the British Empire for Service to Dental Patient Care.

Professor Crispian Scully has been a dental Dean for 20 years (5 at Bristol and 15 at UCL) leading the institute to receive the first Queen's Award for Higher and Further Education in dentistry. Highlights from UCL Deanship:

- o Queens Award for Higher Education
- o Research Quality Rating 5
- o Teaching Quality Rating 23
- o Highest Research Publication Record
- o Increased Quality Staffing > 45% increase
- o Increased Grant Funding >115% increase
- o New Taught Courses and CPD
- o Novel Academic Departments; Continuing Education; Dental and Medical Informatics; Implantology; Special Care Dentistry; Transcultural Oral Health; WHO centre
- o New Research and Education Facilities
- o International Recognition of Unit & School.

Dental and clinical aspects of halitosis

Professor Crispian Scully, London

Oral malodour or *halitosis* (Latin *halitus* = breath) describes any disagreeable breath odour. *Genuine halitosis* is where breath malodour is verified objectively. *Pseudo-halitosis* is where objective evidence of malodour is unobtainable. *Halitophobia* is where patients persist in believing they have halitosis despite firm evidence for absence of it.

Malodour originates from the mouth, mainly from poor oral hygiene, ulcers or infections, in about 85% of patients affected. Halitosis is much less frequently associated with extra-oral causes (e.g. respiratory, gastrointestinal, hepato-renal drugs, metabolic).

The odiferous products responsible appear to be (partly) produced endogenously and/or in the mouth and usually arise from microbial action involving a range of micro-organisms. They include volatile sulphur compounds - VSCs (such as hydrogen sulphide and methylmercaptan) - indoles such as indole and skatole, and polyamines (putrescine and cadaverine). Short chain fatty acids (e.g. valerate, propionate and butyrate) may also arise. Acetone, 2-butanone, 2-pentanone and 1-propanol may appear in both mouth and alveolar (lung) air, with indole and dimethyl selenide in alveolar air.

Assessment of halitosis is usually based upon organoleptic assessment of exhaled air - the clinician sniffs air exhaled from the mouth and nose - most apparently objective measurements of halitosis are expensive and time-consuming. Oral and extraoral causes of malodour must be identified and treated.

Smoking, drugs, and foods that might be responsible for malodour should be avoided. Regular meals are important. Current treatment is directed towards reducing accumulation of food debris and malodour-producing oral bacteria, achieved by treating oral/dental diseases, improving oral hygiene - tooth cleaning (brushing and interdental flossing) and use of antimicrobial toothpastes and/or mouthwashes (chlorhexidine, ceptylpyridinium, zinc, stannous or triclosan products may be beneficial), by stimulating salivation (chewing gum), and reducing the tongue coating by brushing/scraping. Emerging strategies are mainly directed against the bacteria, their metabolism, or their odiferous products.

Speaker and Co-Chair: Professor John Greenman, Bristol



John Greenman is Professor of Microbiology at University of the West of England, Bristol

HIS RESEARCH INTERESTS ARE

- Growth, ecology & physiology of microbes: biofilm and planktonic continuous culture
- *In vitro* biofilms: The use of perfusion biofilm as a model to study oral conditions (caries, periodontal disease) and oral malodour. This general theme also supports research in related areas such as screening methods for anti-odour or antimicrobial compounds and effects of exogenous substrates on caries and malodour processes
- Oral Malodour (microbial aetiology and treatment)
- Odour research: The relationship between microbial generation rates *in situ*, partitioning of VC's between gas and liquid phase, sensitivity and specificity of detector systems (including the human nose) and finally "the perception" and other effects of smell on the perceiver.
- Role of oral and skin microbes in health and disease and microbiology of exfoliative surfaces. As part of this, interests include methods for testing antimicrobial efficacy of wound dressings or other active surfaces, antimicrobial photodynamic treatment, effects of antimicrobial compounds (including ECAS) on bacteria, and *in vitro* models.
- Constantly monitored *in vitro* biofilm models

PROFESSIONAL MEMBERSHIPS

- Society for General Microbiology
- International Association of Dental Research
- British Society for Dental Research
- Oral Microbiology & Immunology Group
- Associate of the Royal College of Pathologists
- President - International Society for Breath Odor Research (ISBOR) 2007-2009

EXTERNAL COMMITTEES

- ISBOR Conference organizer and chairman, London Meeting
- ISBOR Conference Proceedings editor, London Meeting
- ISBOR Conference Editorial Board, Chicago Meeting



- o Member of the Advisory Editorial Board of Oral Diseases

Biofilms and oral malodour

Professor John Greenman

Halitosis can be classified according to its site of generation, and if this is within the oral cavity, then it can be classified as “oral malodor” of microbial origin and accounting for >90% of all halitosis-cases. The “cause” is the presence of VOC-generating microbial biofilms on the mucosa and/or teeth, particularly the dorsum of the tongue, which supports high numbers of microbes as biofilms.

There is general agreement that the degree of bad breath (as reported by trained odour judges) correlates well with objective measurements by analytic instruments. Since all processes in the mouth are continuous, it seems likely that a continuous level of malodour is coupled to a continuous generation rate from the biofilm. This in turn correlates strongly with the quantity (or load) of microbes that can be recovered from the tongue surface. In other words, the amount or thickness (aerial density) of an individual’s biofilm is the most important predictor of bad breath. Oral malodour, tongue biofilm load and ecological composition have been shown to be stable over many months.

The specific theory of oral malodour suggests that specific microbial species are responsible (i.e. aetiological) whilst the non-specific theory suggests that the tongue biofilm “as a whole” is important, without the need for a specific agent (i.e. amount is more important than specific composition). In a diverse biofilm there may be many species that can transform substrates to VSC and many species can “substitute for others” in different cases.

From a modelling perspective, the tongue surface biofilm can be classed as a continuously perfused matrix biofilm system. An *in vitro* laboratory model using real tongue-derived biofilm as the inoculum may be used to help explain contributing factors that would be occurring in a real mouth, including the application of chemo-preventative treatments.

Speaker: Dr. Karin Kislig, Bern



EDUCATION

- Since Jan 2009 Master Programme of Advanced Studies in Cariology, Endodontology and Pediatric Dentistry at the University of Bern, Switzerland
- Apr 2007 Doctor of Dentistry
Dissertation: Prävalenz der Halitosis in der Stadt Bern – Eine epidemiologische Datenerhebung
- Octr 2005 Master of Dentistry, University of Bern, Switzerland

WORK EXPERIENCE

- Since Jan 2010 Halitosis Consultation Hours at the Department of Preventive, Restorative and Pediatric Dentistry, University of Bern
- Since Jan 2009 Assistant at the Department of Preventive, Restorative and Pediatric Dentistry, University of Bern
- Jan 2006 - Dec 2008 Assistant in a Private Practice near Bern

PRESENTATIONS

- Jul 2010/Mar 2011 Halitosis workshop at the congress of the Departement of Conservative, Preventive, and Pediatric Dentistry for Practitioners in St. Moritz
- Sep 2006 Competition SSOS: Oral Presentation: Clinical examination of Halitosis

AWARDS

- Apr 2007 Prize for the best dissertation in Dentistry at the Medical Faculty of Bern
- Sep 2006 Winner Competition SSOS: Oral Presentation: Clinical examination of Halitosis

PUBLICATIONS

- Bornstein MM, Kislig K, Hoti BB, Seemann R, Lussi A. Prevalence of halitosis in the population of the city of Berne, Switzerland: A study comparing self-reported and clinical data. Eur J Oral Sci 2009; 117: 261-267

Halitosis – recommendations for the dental practitioner

Dr. Karin Kislig, Bern

Data from halitosis clinics around the world reveal that the primary source for oral malodor is bacterial tongue coating. Thus, oral hygiene measures including tongue cleaning, and the use of antiseptic agents can help patients to manage their problem. However, the underlying cause for the development of tongue coating also has to be considered, and therefore a proper diagnosis should always include the source of the odorants and the potential cause for their presence. The first step in the diagnostic procedure of halitosis is to distinguish between persons with and without malodor. In case of the presence of an odor, the second step is to detect the source of it. Several organoleptic techniques and the use of sulfide monitors have been recommended for that purpose. However, both the instrumental and the organoleptic measures require a certain amount of training and experience and might overburden a general dental practitioner without particular training in diagnosis of halitosis. Therefore, we recommend the implementation of a very simple organoleptic scale for the dental practice, which is based on the idea to judge the intensity of oral malodor by the distance between the patient and the investigator. Data reveal that the scale delivers reproducible results and might be recommended for the general dental practitioner.