PERIODONTAL THERAPY
GOOD MEDICAL PRACTICE?
The American Academy of Periodontology states: "Periodontal (gum) diseases, including gingivitis and Periodontitis, are serious infections that, left untreated, can lead to tooth loss. The word 'periodontal' literally means 'around the tooth'. Periodontal disease is a chronic bacterial infection that affects the gums and bone supporting the teeth." [http://www.perio.org/consumer/2a.html]
The periodontal academy web site goes on to say: "Periodontists do know that periodontal disease is a bacterial infection, and all infections are cause for concern. Periodontal bacteria can enter the blood stream and travel to major organs and begin new infections." [/consumer/mbc_top2.htm]
The same site further states: "Your periodontist may recommend periodontal surgery. Periodontal surgery is necessary when your periodontist determines that the tissue around your teeth is unhealthy and cannot be repaired with nonsurgical treatment. Following are the four types of surgical treatments most commonly prescribed: Pocket Reduction Procedures, Regenerative Procedures, Crown Lengthening, Soft Tissue Grafts."
Here, then, are the facts on Periodontal Disease, according to the American Academy of Periodontology:
1. It is an infection caused by bacteria (actually, use of the term micro-organisms would be more accurate, as amoebae, yeasts and even viruses are frequently involved).
2. The infection site is in the tissues around teeth.
3. It is mostly chronic in nature.

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Let us examine good medical practice, as applies to the principles of treating infectious pathology. Patient is diagnosed with pneumonia, and is immediately placed on anti-microbial therapy. Sputum culture to identify the organism and the specific anti-microbial is utilized. There is no consideration of surgical removal of infected lung tissue!

Perhaps this is not a fair analogy. Consider an infection anywhere in the body; kidneys, throat, sinuses, toenails, etc. These infections are all addressed according to the principles of good medical practice!

1. Identify the pathogenic micro-organism causing the infection. This entails culturing, when possible.
2. Attempt to destroy, or at least control, the identified micro-organism with the most appropriate anti-microbial agent available.
3. Track the progress of the infection, and the therapy utilized. (In dental therapy, this procedure would entail the use of a microscope. How else could the progress of the infection be tracked?) Surgical removal of infected tissue is utilized only as a last, and usually life saving, resort and only when accompanied with the highest degree of anti-microbial therapy and under the most sterile operating conditions possible. In fact, with rare exceptions, surgical removal of infected tissue is considered only in conditions of appendicitis, gangrene, or perhaps chronic tonsilitis. The first two of these are critical life saving conditions, and the last is a decision of last resort. Anti-microbial therapy is always used in conjunction.

In traditional periodontal surgery, are good medical practice requirements followed? Are the microorganisms brought under control before the surgery is conducted? Although there is some movement to utilize antibiotic impregnated cords and chips in the gingival crevice, no attempts are made to determine the status of the infection before the tissues are surgically removed. If antibiotic therapy is utilized, it starts one hour before the appointment with a bolus dose, and continues for 7-10 days thereafter. This is obviously intended to prevent adverse systemic events (the “focal infection” phenomenon that the dental profession maintains does not exist) from a bacteremia, rather than a purposeful regimen to control the infection at the surgical site.

Periodontitis, by definition, entails the presence of micro-organisms in the infected alveolar bone. Surgical removal of some of the infected gingiva and alveolar bone in no way ensures that the micro-organisms are eliminated from the infected area, or at least reduced to a level the body’s defenses can manage. Can this be considered good medical practice?

Perhaps this is the reason that so many periodontal patients require frequent re-treatment. Every general dentist has seen many patients who have experienced periodontal surgery at least once, more often two to four times, and who have vowed never to do so again.

Let us next examine the traditional “conservative” approach to periodontal therapy. The periodontal academy web site noted above states that plaque is the main cause of periodontal disease, which is a contradiction in itself. If the disease is truly an infection, as they state, then the cause has to be micro-organisms. These micro-organisms can be found in the plaque, but not exclusively there. Micro-organisms must be in the tissues to cause the infection.

However, removal of the plaque source of the infectious agents cannot be criticized. Neither can the removal of tartar (dental calculus), provided that tooth structure is not damaged in the process. The traditional procedure of “root planing” must be considered to be highly questionable. Research previously noted in this newsletter [BPNL, 15(5):3, Aug 1999] clearly demonstrates that the root planing process opens the dentin tubules to invasion of organisms from the oral cavity and that this invasion progresses to the pulp canals of the teeth. How can this be considered good medical practice?

In the existing conservative standard of care for periodontal therapy, no attempt is made to eliminate or control the pathogenic organisms before the therapy is initiated. Invasive procedures are initiated on infected, sometimes highly infected, tissues. Can this be considered good medical practice?

In the therapy for periodontal infections, good
medical practice should dictate that the principles of addressing infectious disease be followed. These are listed early in this article, but are so important as to bear repeating and elaboration:

1. Identify the infectious micro-organisms whenever possible, by culture and/or phase contrast microscopy.
2. Administer the appropriate antimicrobial agent for the micro-organisms in question, as determined by culture and antimicrobial specificity testing or previous documentation of specificity for the micro-organisms involved. This may be addressed systemically, but preferably locally through the process of subgingival irrigation. Systemic antibiotic therapy provides a greater risk for the development of resistant strains of micro-organisms.
3. Provide appropriate home care instructions.
4. Address the host resistance/susceptibility factors identifiable, providing all possible support. This may be considered standard of care, as some of these factors are addressed in the website of the periodontal academy cited earlier in this article.
5. Remove local irritants, i.e. plaque and tartar, only after infectious organisms are minimized, exercising care to minimize damage to vital tissues.
6. Track the progress of treatment through monitoring with a (phase contrast) microscope.

This is good medical practice!

It just so happens that this is the protocol for addressing periodontal infection developed by the Periodontal Committee of the International Academy of Oral Medicine and Toxicology (IAOMT), led by Chair Dr. Thomas Baldwin. So - the question becomes: “WHO IS WEARING THE WHITE HATS? The dental profession in general and the periodontal specialty specifically are advocating periodontal therapy that is contrary to good medical practice. The IAOMT is advocating periodontal therapy that is in perfect harmony with the principles of good medical practice.

Why would a professed learned occupation willingly violate well established principles of care? Why is an infection not treated as an infection? There can be only one explanation - TRADITION! “This is the way we do it, therefore this is the way you must do it. All dentists are taught this way, most dentists do it this way. Therefore, it is the Standard of Care and you will be punished if you depart from our policy.” This philosophy for the conduct of a medical profession is questionable, and certainly not in the best interests of the patients or the public health.

What, then, is the venue for addressing this obvious departure from good medical practice? The possibilities are:

1) The dental profession (dental schools, boards, organizations, journals); 2) the medical community; 3) the scientific community; 4) government agencies; 5) the public, through the media; 6) the courts.

Obviously, the proper forum is the dental profession itself, and specifically the periodontal specialty. This must be accomplished before the other venues enter the picture. There is a ray of hope appearing! Recent studies in the Journal of Periodontology have demonstrated the value of anti-microbial therapy, both local and systemic, in the treatment of periodontal infections. [see “Science” section.] One study (Garrett, S et al, Jan 2000) even found that local antibiotic administration was as effective as scaling and root planing. Perhaps the publication of this type of research will help guide the profession. Given the prevailing attitude of the dental profession, including the dental schools (which are accredited by the American Dental Association), it is not likely that they will change on their own volition in the near future. Concerned health professionals must make their voices heard, through lectures, articles and letters to journals, and formal requests from organizations.

It is possible that the medical community is a good venue for revealing the issue. They, at least, are adhering to the principles of good medical practice when addressing infections.

How about the discerning practicing dentist? It would seem that caring and conscientious dentists would have to follow some guidelines. It is no secret that a large proportion of dental malpractice lawsuits deal with failure to adequately address periodontal infections.

1. Informed consent is a must! Prepare written instructions on periodontal infections for every patient. Include the approach taken by traditional
dentistry and an option for referral to a periodontist if periodontal infection, to any degree, is present. Have the patient sign the option for referral or to choose your program. Include the provision for referral to a periodontist if your therapy is not successful in a given time. Include written instructions on home care.

2. Be prepared for diagnosis by phase contrast microscopy and possible culturing of infectious sites.

3. Learn the IAOMT protocol for controlling infection by sub-gingival irrigation.

4. Initiate your nutritional support policies. Even the periodontal academy lists “poor nutrition” as one of the causes of periodontal disease.

5. Monitor your therapy with a phase contrast microscope.

6. Initiate your local prophylactic program at the appropriate time.

Phase contrast microscopes are admittedly expensive. However, consider the benefits as a practice builder. Patients are not fools! They are much more discerning than most professionals credit them. They know when they have a doctor who really cares for them, and will provide treatment without suggesting that they mortgage their home to provide payment! They also know full well the difference, in terms of expense and comfort, between surgical and non-surgical therapy. The very best source for building a practice is patient referrals, not public advertising.

Further, consider the future of dentistry, and the resulting impact on your own practice. It is clear that the incidence of dental decay is decreasing. It is also clear that the use of mercury amalgam is rapidly decreasing in restorative dentistry. These two factors combine to provide great impact on the practice of dentistry. There will be: 1) reduced need for fillings, 2) reduced need for full coverage restoration of teeth destroyed by amalgam, 3) reduced need for endodontic therapy, and 4) reduced need for tooth replacement.

However, even the dental establishment acknowledges that at least 75% of adult Americans have periodontal disease (how’s that for an endorsement for over 100 years of traditional periodontal therapy?). The success of your practice may be determined by how you address periodontal therapy.

In conclusion - WEAR A WHITE HAT; PRACTICE GOOD MEDICINE!

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Mercury Anti-Toxic Therapy
Where are we on mercury anti-toxic therapy? Do we know what we are doing? At the present time, there are as many protocols for addressing the patient that is potentially mercury intoxicated as there are practitioners addressing the issue! Some techniques being utilized are based primarily on faith, with little if any documentation supporting their use. This approach is potentially dangerous - to the patient if the technique has unknown potential for adverse effects, and to the practitioner if he/she ends up in court or before a board.

We do know: That virtually every technique being utilized works on someone; that no technique being utilized works on everyone; that adverse effects have occurred from most presently utilized materials and techniques. Beyond that, it has been mostly a combination of guesswork and hope.

It is time that a solid foundation for mercury anti-toxic therapy is developed; one that is not only reliable clinically, but will stand up legally. The International Academy of Oral Medicine and Toxicology (IAOMT) has embarked on this momentous task. This requires the expertise of dentists, physicians, scientists and other health practitioners.

IAOMT will feature mercury anti-toxic therapy at its 2000 Annual Meeting in Austin, TX on 22-23 September! The IAOMT Anti-Toxic Program has been divided into the following areas: 1. Prevention [a. exposure, b. absorption, c. damage]; 2. Elimination [a. pharmaceutic, b. non-pharmaceutic]; 3. Neutralization (of toxic properties of foreign agent); 4. Restoration (to previous state of health); 5. Determination
(diagnosis and monitoring). IAOMT members, starting with those members in the Accreditation Program, are being asked to conduct a Scientific Review on an individual topic. Files of documentation on these topics will be established. Hopefully, the gathering of documented knowledge will allow the formulation of reliable and legal protocols.

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SCIENCE

Iatrogenic Exposure to Mercury After Hepatitis B Vaccination in Preterm Infants.
Stajich, GV; Lopex, GP; Harry, SE; Sexson, WR.
ABSTRACT: Thimerosal, a derivative of mercury, is used as a preservative in hepatitis B vaccines. We measured total mercury levels before and after the administration of this vaccine in 15 preterm and 5 term infants. Comparison of pre- and post-vaccination mercury levels showed a significant increase in both preterm and term infants after vaccination. Additionally, post-vaccination mercury levels were significantly higher in preterm infants as compared with term infants. Because mercury is known to be a potential neurotoxin to infants, further study of its pharmacodynamics is warranted.

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Chronic Insomnia in Workers Poisoned by Inorganic Mercury: Psychological and Adaptive Aspects.
Rossini, SR; Reimao, R; Lefevre, BH; Medrado-Faria, MA.
ABSTRACT: Insomnia is one of the symptoms of inorganic mercury poisoning (IMP). The objective of this study is to analyze the chief psychological aspects in the adjustment of workers with chronic insomnia associated with IMP. For this purpose the Preventive Clinical Interview and the Ryad Simon Operational Adaptive Diagnostic Scale (Escala Diagnostica Adaptativa Operacionalizada - EDAO) were utilized. Fifteen subjects with mean age of 40 years (10 males and 5 females) were studied. Nine were diagnosed with High Adaptive Inefficacy, five with Moderate Inefficient Adaptation and only one with Mild Inefficient Adaptation. Impairment occurred in four adaptive sectors: affective relationship, social-cultural, productivity and organic. Adaptive efficiency indicated that in all the 15 subjects studied the adaptive solutions were frustrating and led to psychic suffering and/or environmental conflict confirming the severity of the involvement in chronic IMP.

BIO-PROBE COMMENT: This study dramatically demonstrates the effect inorganic mercury can have on the ability of humans to cope with life! One can only speculate, at this time, the influence that chronic exposure to mercury from amalgam dental fillings may have on the quality of life of countless numbers of people.

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Total Mercury in Human Renal Cortex, Liver, Cerebellum and Hair.
Hac, E; Krzyzanowski, M; Krechniak, J.
ABSTRACT: The aim of this study was: a) to estimate the concentration of total mercury in the renal cortex, liver, cerebellum and hair of 46 persons who died suddenly in the Gdansk region, northern Poland, between the ages of 17 and 90; and b) to assess whether a correlation occurs between mercury content in the investigated biological media. The mean concentrations of mercury in the human hair, renal cortex, liver and cerebellum were: 378 +/- 315.4 ng/g; 68.6 +/- 92.3 ng/g; 29.9 +/- 22 ng/g and 5.3 +/- 6.9 ng/g respectively.
Positive correlations were found between mercury levels in: cerebellum and liver (r = 0.873), cerebellum and hair (r = 0.853), cerebellum and renal cortex (r = 0.578), hair and liver (r = 0.771), hair and renal cortex (r = 0.478), liver and renal cortex (r = 0.66). The geometric mean levels of mercury in the renal cortex, liver, cerebellum and hair in the residents of the Gdansk region are 15-19 times lower than in the population of Tokyo and its environs [Suzuki, T; Hongo, T; Yoshinaga, J; et al. The hair-organ relationship in mercury concentration in contemporary Japanese. Arch Environ Health, 44:361-5, 1993.]

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The Activity of Erythrocyte Enzymes and Basic Indices of Peripheral Blood Erythrocytes From Workers Chronically Exposed to Mercury Vapors.

Zabinski, Z; Dabrowski, Z; Moszczyński, P; Rutowski, J.
ABSTRACT: The influence of occupational exposure to mercury vapours on the activity of the red cell enzymes [glucose-6-phosphate dehydrogenase (G-6PD), acetylcholinesterase (AchE), glutathione reductase (GR) and superoxide dismutase (SOD), as well as on peripheral blood indices [erythrocyte number (RBC), HCT, Hb, MCHC] and on serum concentrations of iron, ferritin, transferrin and total iron binding capacity (TIBC), was assessed.

Studies were carried out on 46 men aged between 21 and 56 years (X = 39 +/- 10.4) exposed to mercury vapours during their work from 7 months to 32 years (X = 14.7 +/- 10.8). The control group consisted of 35 healthy workers aged between 20 and 54 years (X = 33.6 +/- 9.8) not exposed to chemical nor physical agents. In both groups studied, there were 50% and 34.3% smokers, respectively. The activity of studied red cell enzymes – G-6PD, AchE, GR and SOD – was estimated according to the colorimetric methods described by Beutler and expressed as international units per gram of hemoglobin (IU g Hb(-1)). Peripheral blood cell parameters were determined using an automatic cell counter. The concentration of serum iron and TIBC was determined using colorimetric methods (Beckman), while that of ferritin and transferrin by nephelometric methods. The time-weighted average (TWA) of mercury concentration in the air determined before the study was 0.0028 mg m(-3). Statistical analysis of the data was performed using either the Cochran and Cox C-test or the Student’s t-test. The medium mercury concentration in the urine was 77.44 +/- 48.15 mcrog l(-1).

In the group exposed to mercury vapours, a significant decrease was found in G-6PD activity (23.9%, P <0.001), GR (18.8%, P <0.001), and SOD (5%, P <0.001) with a concomitant increase in AChE activity (35.9%, P <0.001) was found. Moreover, a statistically significant increase occurred in HCT and RBC, and a decrease in MCV and MCHC as well as increases of ferritin (130.9%, P <0.001), transferrin (118.4%, P <0.001) and TIBC (11.2%, P <0.05).

Our results indicate that long-term exposure to mercury vapours induces changes in the activity of red cell enzymes – G-6PD, AchE, GR and SOD – and may also influence other important hematological parameters of the peripheral blood.

BIO-PROBE COMMENT: The occupational exposure to mercury vapor in this study was WELL below the U.S. OSHA standard of 50 micrograms Hg/M3 air (0.05 mg Hg/m3air); in fact, it was almost 20 times lower than the standard. This new study clearly demonstrates adverse effects to these very low exposures to mercury vapor.

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The Effect of Locally Delivered Controlled-Release Doxycycline or Scaling and Root Planing on Periodontal Maintenance Over 9 Months.

Garrett, S; Adams, DF; Bogle, G; Donly, K; Drisko, CH; Hallmon, SS; Hancock, EB; Hanes, P; Hawley, CE; Johnson, L; Kiger, R; Killoy, W; Mellonig, JT; Raab, FJ; Ryder, M; Stoller, N; Polson, A; Wang, HL; Wolinsky, LE; Yukna, RA; Harrold, CQ; Hill, M; Johnson, VB; Soouthard, GL.


ABSTRACT: This research report evaluates clinical changes resulting from local delivery of doxycycline hyclate (DH) or traditional scaling and root planing (SRP) in a group of patients undergoing supportive periodontal therapy (SPT).

Methods: In all, 141 patients received either DH (67) or SRP (74) treatment in sites > or =5 mm on one-half of their dentition at baseline and month 4.

Results: Clinical results were determined at month 9. Baseline mean probing depth recordings were similar between the two groups (DH = 5.9 mm; SRP = 5.9 mm). Mean month 9 results showed similar clinical results for attachment level gain (DH 0.7 mm; SRP 0.8 mm) and probing depth reduction (DH 1.3 mm; SRP 1.1 mm). Percentage of sites showing > or =2 mm attachment level gain at month 9 was 24.7% in the DH and 21.2% in the SRP group. Thirty-nine percent (39%) of DH sites and 38% of SRP sites showed > or =2 mm probing depth reduction. When treated sides of the dentition were compared to untreated sides, DH showed a difference in disease activity (> or =2 mm attachment loss) from 19.3% (untreated) to 7.2% (treated); and SRP from 14.3% (untreated) to 8.1% (treated).

Conclusions: Results show that both DH without concomitant instrumentation and SRP were equally effective as SPT in this patient group over the 9-month study period.

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Treatment With Subantimicrobial Dose Doxycycline Improves the Efficacy of Scaling and Root Planing in Patients With Adult Periodontitis.

Caton, JG; Ciaccio, SG; Blieiden, TM; Bradshaw, M; Crout, RJ; Heffi, AF; Massaro, JM; Polson, AM; Thomas, J; Walker, C.


ABSTRACT: In a previous study, subantimicrobial dose doxycycline (SDD) significantly improved clinical parameters associated with periodontal health in patients with adult periodontitis (AP) when used as an adjunct to a maintenance schedule of supragingival scaling and dental prophylaxis. In this double-blind, placebo-controlled, parallel-group, multicenter study, the efficacy and safety of SDD were evaluated in conjunction with scaling and root planing (SRP) in patient with AP.

Methods: Patients (n = 190) received SRP at the baseline visit and were randomized to receive either SDD 20 mg bid or placebo bid for 9 months. Efficacy parameters included the per-patient mean changes in clinical attachment level (CAL) and probing depth (PD) from baseline, the per-patient percentages of tooth sites with bleeding on probing. Prior to analysis, tooth sites were stratified by the degree of disease severity evident at baseline.

Results: In tooth sites with mild to moderate disease and severe disease (n = 183, intent-to-treat population), improvements in CAL and PD were significantly greater with adjunctive SDD than with adjunctive placebo at 3, 6, and 9 months (all P<0.05). In tooth sites with severe disease, the per-patient percentage of sites with AL > or =2 mm from baseline to month 9 was significantly lower with adjunctive SDD than with adjunctive placebo (P<0.05). Improvements in clinical outcomes occurred without detrimental shifts in the normal periodontal flora or the acquisition of doxycycline resistance or multiantibiotic resistance. SDD was well tolerated, with a low incidence of discontinuations due to adverse events.

Conclusions: The adjunctive use of SDD with SRP is more effective that SRP alone and may represent a new approach in the long-term management of AP.

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normal controls were determined utilizing instrumental neutron activation analysis. 
Comparison of AD and controls revealed elevated Br (whole brain) and Hg (microsomes) and diminished Rb (whole brain, nuclear and microsomes), Se (microsomes) and Zn (nuclear) in AD. The elevated Br and Hg and diminished Rb are consistent with our previous studies in AD bulk brain specimens. Comparison of element ratios revealed increased Hg/Se, Hg/Zn and Zn/Se mass ratios in AD.
Se and Zn play a protective role against Hg toxicity and our data suggest that they are utilized to detoxify Hg in the AD brain. Overall our studies suggest that Hg could be an important toxic element in AD. Whether Hg deposition in AD is a primary or secondary event remains to be determined.

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FORUM

IAOMT 2000 ANNUAL MEETING
DATE: Friday-Saturday, 22-23 September, 2000.
SITE: Austin, Texas.
HOTEL: Radisson Hotel & Suites; 111 Cesar Chavez Street, Austin, TX. T: (512) 478-9611, (800) 333-3333; F: (512) 478-3227. Specify IAOMT. Room rate: $119/night (US); s/d.
MEETING REGISTRATION: IAOMT, P.O. Box 608531, Orlando, FL. 32860-8531. T: (407) 298-2450; F: (407) 298-3075. email: mziff@iaomt.org. [Registration fee to be announced, will include continental breakfast and lunch on Friday and Saturday, and Saturday evening banquet]
MEETING HOST: Dr. Dan Rosen. 512-472-3565.
WELCOME NO-HOST RECEPTION: Thursday, 21 September 2000, 7:30pm.
PROGRAM: Friday morning Clinical Theme: “Mercury Anti-Toxic Program.”
Phillip Sukel, DDS: IAOMT Standards of Care.
J. C. Pendergrass, PhD: ALT Testing To Determine Systemic Effects.
Pamela Floener, PT, RMA,CT: Do’s and Don’ts for the Dentist and Physician.
Friday Afternoon Speakers:
Walter J. Clifford, MS: Material Reactivity Testing.
Richard J. Chanin, DMD: Understanding Dental Mercury.
Saturday Speakers:
Boyd E. Haley, PhD: Mercury Pathophysiology.
H. Vasken Apooshian, PhD: DMPS and DMSA.
Murray J. Vimy, DMD: Why and How to Practice Mercury Free Dentistry.
“Sam” Queen, PhD: The Forensic Approach to Anti-Toxic Therapy.

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Second Annual Dental, Medical and Scientific Conference on Sources, Diagnosis and Treatment of Oral Toxicities
Affinity Labeling Technologies
SITE: Lexington, Kentucky.
HOTEL: Marriot Griffin Gate Resort Hotel, 1800 Newtown Pike, Lexington, KY. 40511. T: 606-231-5100 or 800-228-9290; F: 606-255-9944. ALT rate= $99.00/n; s/d (+9% tax).
PROGRAM: Boyd E. Haley, PhD; J. Curt Pendergrass, PhD; Hal Huggins, DDS; John Roberts; BCchD; Wesley Shankland, DDS; Steven Carini, DDS; Kimberly Anderson, PhD; Joseph Sarkissian, DDS. Dave Swankin, JD; Jim Turner, JD; Charlie Brown, JD on Sunday.

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The International IAOMT Meeting 2000 Dentistry & the Environment.
MEETING REGISTRATION: Dr. John Ahearne, 30 Bournemouth Road, Poole, Dorset, BH14 0ES. Single day: 150 pounds; both days 275 pounds (early bird discount prior to 14 June: 250 pounds, 2 days).
PROGRAM: Friday: Murray J. Vimy, DMD. Paul Moller. Dr. Vera Stajskal.
Saturday: David Kennedy, DDS. Prof. Boyd Haley, PhD. J. Curt Pendergrass, PhD. Thomas Baldwin, DDS.