This is the text of President-elect Dianne Rekow's inaugural address, presented at the Opening Ceremonies of the 35th Annual Meeting of the American Association for Dental Research, Orlando (FL), March 8, 2006.

The author summarizes the cellular and molecular mechanisms controlling bone remodeling and the influence of sex hormones on these processes.

The author presents evidence for and against the hypothesis that the lack of estrogen influences the activities of bone cells and immune cells such that progression of alveolar bone loss will be enhanced.

Radiation-induced taste deficits can be recovered by six months.

The acquired pellicle reduces dental erosion, but this effect is limited to the less severe erosive challenge on enamel surfaces.

Co2 laser treatment of enamel inhibits demineralization in the human mouth, being more effective when associated with fluoride;
Survival of ART and Amalgam Restorations in Permanent Teeth of Children after 6.3 Years

J.E. Frencken, D. Taifour, and M.A. van ‘t Hof

The present study is the first in which ART restorations with high-viscosity glass ionomer were compared with traditionally produced restorations.

Increase in RANKL:OPG Ratio in Synovia of Patients with Temporomandibular Joint Disorder

T. Wakita, M. Mogi, K. Kurita, M. Kuzushima, and A. Togari

The authors demonstrate, for the first time, that artificial-sample and synovial fluid of osteoarthritides patients has the potential to cause osteoclastogenesis formation in vitro.

BIOMATERIALS & BIOENGINEERING

Transplanted Endothelial Cells Enhance Orthotopic Bone Regeneration

D. Kaigler, P.H. Krebsbach, Z. Wang, E.R. West, K. Horger, and D. J. Mooney

In an orthotopic site, traîsplanted endothelial cells can influence the bone-regenerative capacity of bone marrow stromal cells.

Mandibular Biomechanics and Development of the Human Chin

I. Ichim, M. Swain, and J.A. Kieser

The development of the human chin is unrelated to the demands placed on the mandible during function.

Gelled Calcium Polyphosphate Matrices Delay Antibiotic Release

S.C. Schofield, B. Berno, M. Langman, G. Hall, and M.J. Filiaggi

The authors describe a non-aggressive process of introducing a gelling step, during antibiotic incorporation, that effectively trapped cefuroxime and reduced its release rate, suggesting its potential applicability with molecularly diverse therapeutic agents.

BIOLOGICAL

Omega-3 Fatty Acid Effect on Alveolar Bone Loss in Rats


The authors demonstrate the effectiveness of an omega-3-fatty-acid-supplemented diet in modulating alveolar bone resorption following P. gingivalis infection, and suggest that this may be a useful adjunct in the treatment of periodontal disease.

Condylar Mineralization Following Mandibular Distraction in Rats

Z.J. Liu, G.J. King, and S.W. Herring

Mandibular distraction decreases the condylar mineral apposition rate, but only in rapidly growing rats, which is related to surgery and its functional consequences, not to the distraction rate.

Increase of Galanin in Trigeminal Ganglion during Tooth Movement


The increase of galanin in the periodontal ligament during experimental tooth movement at least partly originates from trigeminal ganglion neurons and may play a role in pain transmission and / or periodontal remodeling.

Single-channel Recordings of TREK-1 K+ Channels in Periodontal Ligament Fibroblasts

A. Ohara, Y. Saeki, M. Nishikawa, Y. Yamamoto, and G. Yamamoto

This is the first study to clarify the single-channel properties of ion channels in PDL fibroblasts by patch-clamp techniques.

ABOUT DE COVER

Example of double-labeled condyles from rapidly growing animals at D24

For more details see pages 653 – 657.