Using Virtual Human Technology to Capture Dentists’ Decision Policies about Pain

This is the first study to examine demographic cue use in dentists’ decision-making for pain.

Incomplete Caries Removal: A Systematic Review and Meta-analysis

This study systematically reviewed randomized controlled trials investigating one- or two-step incomplete compared with complete caries removal.

The Biology of TMJ Growth Modification: A Review

This review discusses the histochemical evidence and theories regarding TMJ growth modification, and underlines regulatory growth factors and tissue markers used for cellular and molecular evaluation of the TMJ during its adaptive response to biomechanical forces.

Regeneration of Condyle with a Functional Appliance

The authors’ results indicate a favorable regeneration process in the condylectomized area owing to the use of a functional appliance and, due to condylar regeneration, symmetrical masticatory muscle activity was achieved.

Adult Human Gingival Epithelial Cells as a Source for Whole-tooth Bioengineering

Adult human gingival epithelial cells are a realistic source for consideration for use in human biotooth formation.

Endothelin Receptor-mediated Responses in Trigeminal Ganglion Neurons

This study demonstrates endothelin-induced cellular responses in trigeminal ganglion neurons.

The Role of Osteocytes in Bone Resorption during Orthodontic Tooth Movement

The authors demonstrate in vivo findings of osteocyte involvement in osteoclastic bone resorption during orthodontic tooth movement.

Effects of Initial Stresses and Time on Orthodontic External Root Resorption

A specific stress threshold that induces direct bone resorption and can help prevent orthodontic external root resorption.

Role of Occlusion in Masseter Muscle Acetylcholine Receptor Clustering

This work demonstrates abnormal formation of the nicotinic acetylcholine receptor (nAChR) cluster in the neuromuscular junction (NMJ) of the masseter of the microphalmic mouse, suggesting that occlusion is essential for the normal progress of nAChR clustering in the NMJ of the masseter.

Local Regulation of Tooth Mineralization by Sphingomyelin Phosphodiesterase 3

Snup expression in odontoblasts is required for tooth mineralization.

N-cadherin is Required for Cytodifferentiation during Zebrafish Odontogenesis

These data on zebrafish tooth development demonstrate the up-regulation of N-cadherin expression during the cytodifferentiation stage, as well as co-expression of E- and N-cadherin in the inner dental epithelium.

Odontoblastic Syncytium through Electrical Coupling in the Human Dental Pulp

The authors present the data on dual-cell patch-clamp recordings from human odontoblasts, and also electrophysiological evidence for electrical coupling and synchronization of gap junctions between human odontoblasts.
Effects of Fluoridated Drinking Water on Dental Caries in Australian Adults

G.D. Slade, A.E. Sanders, L. Do, K. Roberts-Thomson, and A.I. Spencer

In a nationally representative sample of Australian adults, caries-preventive effects of water fluoridation were at least as great in adults born before widespread implementation of fluoridation as after widespread implementation of fluoridation.

Hydrodynamic Flow through Loading and in vitro Secondary Caries Development


Mechanical loading, in combination with a failed bond at the tooth-restoration interface, creates a hydrodynamic flow that enhances secondary caries development.

ABOUT THE COVER

A schematic illustration showing that tooth odontoblasts respond to external stimuli. Electrical and/or chemical signals can be directly transmitted through adjacent odontoblasts that function as a syncytium with a large electrical capacitance.

For more details, see pages 371-375.