

**Name:**

George T-J Huang



**Bio:**

Dr. Huang is a board-certified endodontist, currently Acting Director of Graduate Endodontics, Professor in the Department of Bioscience Research and Joint Professor in the Department of Physiology at University of Tennessee Health Science Center. He is the former Chair at Boston University and Columbia University. Dr. Huang has published >230 research articles, abstracts, review articles, including papers in Stem Cells, Stem Cells and Development, and Journal of Endodontics, and 22 book chapters in books such as Ingle's Endodontics. His research has been funded by NIH and AAE Foundation with current research interest on stem cells and regenerative medicine. He received the Distinguished Scientist Award, IADR, 2015.

**Contact info:**

George T.-J. Huang, DDS, MSD, DSc  
Professor  
Former Director for Stem Cells and Regenerative Therapies  
Department of Bioscience Research  
Acting Director, Graduate Endodontics  
College of Dentistry  
University of Tennessee Health Science Center  
19 S. Manassas St. Lab Rm 255, office 256  
Memphis, TN 38163  
gtjhuang@uthsc.edu  
Phone: 901-448-1490; Fax: 901-448-3910  
[https://scholar.google.com/citations?hl=en&user=HR6-moMAAAAJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.com/citations?hl=en&user=HR6-moMAAAAJ&view_op=list_works&sortby=pubdate)

**Presentation title:** Vital pulp therapy and regenerative endodontics

**Presentation synopsis:**

This presentation will overview the progress of regenerative endodontics. There are two categories of clinical approaches to regain vitalization of pulp. One is stem-cell based therapy that involves implanting exogenously processed stem cells into the root canal space, termed cell-based regenerative endodontic therapy (CB-RET). This approach has shown the regeneration of pulp- and dentin-like tissues in the canal space from animal and human clinical trial studies, suggesting potential practice of true “regenerative endodontics” in the future. On the other hand, revitalization or also termed revascularization, that does not involve the delivery of exogenously processed stem cells into the canals therefore is termed cell-free regenerative endodontic therapy (CF-RET). The various animal and human clinical studies have shown that the tissues developed in CF-RETs are fibrous connective tissue, some resembling periodontal ligament, not pulp-like, and the mineral tissue as cementum-like or bone, not dentin-like. One outcome regarding revitalization treatment is canal space obliteration by calcification which accounts for a high percentage of such cases. Vital pulp therapy is a form of CF-RET and its current concept and progress will be reviewed. The use of materials for vital pulp therapy, the outcome and biological response, tissue repair and regeneration will be discussed.

**Learning objectives:**

At conclusion, participants should be able to:

1. Describe the definitions of CB-RET and CF-RET.
2. Describe the progress of CB-RET,
3. Describe the progress of CF-RET.
4. Describe the current optimal strategies for vital pulp therapy.