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Dr. Farman is a dentist holding doctorates both in Oral Pathology and in Oral and Maxillofacial Radiology.

He is a specialist in Oral and Maxillofacial Radiology actively licensed to practice in the Commonwealth of Kentucky and in the United Kingdom as well as being actively licensed as a specialist in Oral Pathologist in the Republic of South Africa. He is Professor of Radiology and Imaging Science within the Department of Surgical and Hospital Dentistry, The University of Louisville and also holds appointments in the Departments of Diagnostic Radiology and Anatomical Sciences and Neurobiology within the Health Sciences Center of the same institution. He conducts private practice in Oral and Maxillofacial Radiology

Dr. Farman is current President of the American Academy of Oral and Maxillofacial Radiology. He is a Professor at the University of Louisville Health Sciences Center and also conducts private practice in his discipline. He is widely publishes and lectures internationally.]

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## **Title: Maxillofacial Cone Beam Computed Tomography in Endodontics and Dental Implantology.**

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### **Abstract :**

**Educational Objectives:** To gain knowledge of selection criteria for Cone Beam Computed Tomography (CBCT) with special reference to dental implantology and endodontics. To minimize patient radiation risk while maximizing diagnostic yield based upon setting task-specific parameters. To differentiate between disease and CBCT artifact.

**Background and Overview:** CBCT is an application that is taking dentistry by storm. In a single rotation or 180 degrees or more CBCT provides precise, essentially immediate, and accurate three-dimensional (3-D) radiographic images. The data acquired by the scan can also be used for diagnosis, treatment planning and image guidance in such procedures as dental implantology and for evaluation of failed endodontic procedures. The significant advancements and applications provided by this technology do not compete with standard digital radiographic applications. Rather, CBCT is a complementary modality for specific applications.

**Conclusions:** Three dimensional imaging is fast becoming the standard of care for planning dental implant placement, a task that is relatively low resolution. In selected cases, CBCT is invaluable as an adjunct for endodontics, especially where small field of view and very high resolution are best employed.

**Clinical Implications.** The selection of technical parameters for CBCT are task dependent and this should be considered when making purchase decisions for a CBCT system.

**Key Words.** Computed Tomography, Cone Beam, X-ray; Dental Implants; Endodontology; Oral and Maxillofacial Radiology

Dr. Jie Yang is Professor and Director of Oral and Maxillofacial Radiology at Temple University Kornberg School Dentistry and Professor of Radiology at the School of Medicine. He is also the Chairman of Research Committee of the Dental School. Dr. Yang graduated from Shanghai Second Medical University, China in 1984 and earned Doctor of Dental Medicine at Temple University in USA in 2001. He went through two well-structured oral and maxillofacial radiology programs at Peking University School of Stomotology in 1990 and University of Iowa College of Dentistry in 1996. He has been a diplomate of American Board of Oral and Maxillofacial Radiology (ABOMR) since 1996.

Dr. Yang currently is North American Regional Director and Board Member of the International Association of Dento-Maxillo-Facial Radiology. He is the Councilor for the Educational Affairs of the America Academy of Oral and Maxillofacial Radiology. He serves as the Academy's Voting Representative to the American Dental Association's Standards Committee. Dr. Yang has published numerous articles and research abstracts in the fields of dentistry and radiology. He has been serving on the editorial boards of Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontology, Chinese Journal of Dentistry, and Journal of Investigative and Clinical Dentistry. He has supervised many international visiting scholars and presented lectures worldwide.

#### **WHAT ARE THE POTENTIAL IN USING FLUOROSCOPY IN DENTISTRY**

Fluoroscopy is a dynamic imaging and x-ray movie when compared to conventional static radiography. Fluoroscopy has been widely used in medicine over the last decades; however its contributions to dentistry have never been assessed. A systematic review was conducted to identify papers showing the uses of fluoroscopy in dentistry. Human, animal and phantom/skull/mannequin studies on fluoroscopy with regard to its diagnostic value, research performance and clinical and safety applications in dentistry were included in the analysis. In addition, a preliminary study was conducted to evaluate the potential safety applications of fluoroscopy in dentistry by comparing resolution and radiation exposure at a phantom for three modalities: fluoroscopy, intraoral radiography and CBCT imaging. Systematic review evidence and preliminary study results have shown that fluoroscopy may have diagnostic and research potentials in dental profession.