



SYMPOSIUM

K01

Immediacy Concept Incorporating Digital Workflow in a Contemporary Implant Practice: The Digilog™ planning

Edmond Bedrossian DDS, FACD, FACOMS, FAO, FITI

Diplomate, American Board of Oral & Maxillofacial Surgery

Professor, Department of Oral & Maxillofacial Surgery, University of the Pacific Honorary Member,
American College of Prosthodontist



After extraction of a non-restorable tooth, preservation of the soft and hard tissue volume by immediate reconstruction with a dental implant is more predictable than is its reconstruction as a delayed procedure.

In the contemporary implant practices, a paradigm shift has taken place as the "Graftless Concept" has gained credibility. Due to the reduced treatment time, a single stage surgical reconstructions and immediate loading, has resulted in a higher degree of case acceptance. Therefore, more than ever, a systematic interplay between the surgical and prosthetic treatment planning is paramount for successful outcomes.

This presentation will discuss the fundamental surgical and prosthetic principles for adopting the

immediacy concept as well as introduce the role of the digital work flow for the treatment of single, partially edentulous as well as fully edentulous patients.

Learning Objectives:

1. Immediacy: Fundamental surgical principles for immediate loading
2. Defining the Digital Workflow: What technologies are available and how to implement them in your practice
3. Treatment planning the edentulous arch: Understanding the pre-treatment systematic treatment planning for terminal dentition
4. Analog vs digital workflow for planning and restoring the full arch implant case
5. Material considerations for the full arch implant prosthesis

K02

Aligner orthodontics: evolution of biomechanics, material and clinical application

Dr. Francesco Garino

M.D degree, University of Torino, Specialty in orthodontics, University of Padova



During his talk, Dr Garino will share several topics on aligner orthodontics and the evolution that took place in the last 20 years.

The first topic will cover biomechanics and its advancements with all features and protocols that have been introduced and that made many tooth movements more predictable due to the introduction of features such as optimized attachments. It will be shared also through the use of many reference in literature which are the strong point of evidence and which are the areas in which we need further improvement.

The second aspect will cover the evolution of materials and how far this made possible improve tooth movements also through the introduction of several protocols in aligner treatment.

Then Dr Garino will share with the audience which are the clinical efficiency of the system on the most

frequent malocclusions such as Class II malocclusions, both with a pure approach and with a hybrid approach, Class III malocclusion with a orthodontic only approach. In addition to that ,vertical and transversal aspects will be highlighted both in non-growing and growing patients and how far we can go today in treatment with aligners not only in adults but also in teenagers and kids It will be highlighted the great importance of diagnosis in virtual planning and how accurate this tool has to be prepared and handled by the orthodontist.

Since last year the introduction of CBCT within virtual planning made more clear the entire diagnostic scenario and thus warning the clinician by potential mistakes during planning.

The last part of the presentation will also give some highlights about future evolution and wishes on making aligner treatment more mainstream.

K03

Implant Prosthesis design and occlusion consideration

CHIUN-LIN (STEVEN), LIU
School of Dental Medicine
University of Pennsylvania
D.D.S., D.M.D.



Implant Prosthesis design and occlusion consideration

Part 1

Implant Prosthesis design, we will focus on Emergence profile design of implant and pontic site

- History and evolution of emergence profile
- PET (Partial Extraction Technique)
- Critical and subcritical zone

- Ovate pontic and modified ovate pontic design

- Implant position related emergence profile

Part 2

Implant occlusion consideration

- Implant protected occlusion - 12 keys
- How to avoid occlusal complications

N01

Minimally Invasive Prosthetic Therapy: How Far We Can Go?

Chun-Chi PENG

Senior partner, P&H Dental Clinic, Taipei Taiwan
Visiting staff, National Taiwan University Hospital



The minimally invasive therapy in prosthetic treatment is not merely preparing less, but also aiming in the long-term preservation of the remaining natural structure, and the restorative stability as well. Based on the biomimetic principle, which was proposed by Dr. Pascal Magne, the combination of the glass ceramics and composite in restoration, and proper execution of adhesion, can provide the outstanding result in long-

term outcome. The cases presented in this event had 5~11+ years in follow-up period. The nice results point to the necessity of re-visit of previous guidelines we had in the past, such as the preparation design, the need of post, also the importance of ferrule. And the benefits for our patient can be achieved even higher with more dedication of our professional in this field.

N02

Precision implant surgery using real time computer assist.

Atiphan PIMKHAOKHAM
Assoc. Professor, Chulalongkorn University



Three major paradigms shift in dental implant surgery have shown in various literatures. The new paradigm, using advance digital technology recently plays an important role as a game changer in implant surgery. Real time computer assisted implant surgery using advance digital technology such as navigation system or robotic system has been recently introduced. It has been shown that this technology promotes significant accuracy of implant position over the

conventional technic.

Thus, the principle of using real time navigation and robotic system for dental implant surgery in various aspects will be discussed in this presentation. Moreover, our recent published data on accuracy of implant position and improvement of implant skill in novice dentist using this technology will also be discussed.

N03

An update of the clinical application of glass ionomer cement

Yiru Ollie YU

Assistant Dean, Clinical Assistant Professor of The University of Hong Kong



The World Health Organization (WHO) have added glass ionomer cement (GIC) to the WHO Model List of Essential Medicines since 2021, which represents the most efficacious, safe and cost-effective medicines for priority conditions. With this recent WHO endorsement, an increase in the use of GIC is plausible. GIC, including conventional glass ionomer cement (CGIC) and resin-modified glass ionomer cement (RMGIC), are commonly used as fissure sealants, luting cements, liner and bases, and dental restorative materials. Although there are

concerns about moisture sensitivity, low mechanical strength and compromised aesthetic, GIC has several advantages, including adhesion to tooth structures, biocompatibility, simple clinical operation and long-lasting fluoride release. Based on laboratory data regarding sustained fluoride release, CGIC and RMGIC have been associated with caries prevention. In this lecture, we will discuss the clinical application of GIC with the support of most updated evidence.

N04

Future Directions for Regenerative Dentistry

Hiroshi EGUSA

Professor of Tohoku University Graduate School of Dentistry



Regenerative dentistry is originally based on the use of biomaterials; however, they are not always effective, particularly in challenging periodontal tissue defects. Solutions to overcome these limitations may include stem cell-based regenerative medicine. We have successfully fabricated osteoinductive bioengineered bone grafts using stem cells, which possess high bone regeneration capacity even as a freeze-dried material. We also found that

titanium implants with nano-modified surfaces, mimicking properties of tooth cementum, generated periodontal ligament around the implant, which would provide a future alternative to current osseointegrated implants. In this presentation, I will talk about our innovation strategy toward the next generation regenerative dentistry, with an emphasis on cutting-edge research approaches using stem cells and nanotechnologies.

A Blue Ocean Dental Sleep Medicine

Kelvin, Chuan-Hee CHEY
CEO, Asia Pacific Dental Holdings
Group Clinical Director, Asia Pacific Dental Centres



Sleep Medicine has evolved rapidly in the last 50 years as a multidisciplinary field, encompassing the specialties of Dentistry, Neurology, Otorhinolaryngology, Paediatrics, Psychiatry, Psychology and Pulmonary Medicine. Oral appliance therapy (OAT) has been used to manage sleep-related breathing disorders (SRBD) for more than 20 years. However dental sleep medicine standards of clinical practice has not been well defined. SRBD prevalence rates have escalated to double digits in many countries/regions, presenting an increased need for dentists to be proficient in dental sleep medicine. An increasing number of dentists screen for and help treat obstructive sleep apnea (OSA), research-based learning must guide contemporary dental sleep medicine practice

parameters. Dentists must understand the evidence-based medicine behind OSA and OAT in order to provide optimal patient care in this evolving field with a growing body of information that continue to challenge previously accepted concepts.

The lecture presentation will cover the following:

- Overview of Dental Sleep Medicine and the role of the Dental Practitioner
- Discussion of the various treatment modalities in the management of OSA
- Clinical Practical Guidelines and Protocols for the Treatment of OSA and Snoring with OAT
- Ten Misconceptions on the Treatment of OSA

Managing patient with Obstructive Sleep Apnea in General Dental Practice

S.M. BALAJI

Director & Consultant of Balaji Dental & Craniofacial Hospital



OSA is a common, under-diagnosed disorder characterized by repetitive episodes of nocturnal breathing cessation due to upper airway collapse, mostly due to decreased space. The condition could lead to daytime somnolence and may predispose to significant cardiovascular morbidity and mortality. GDPs could be the first person to identify the condition. In severe cases, performing dental treatment could even trigger an episode of apnea. Currently, different treatment options are available – from devices to maintain nasal continuous positive airway pressure to those requiring space-creating surgeries like mandibular advancement, or Uvulopalatopharyngoplasty to advancing the hyoid by genioid exclusively by maxillofacial surgeons.

Author in this presentation will outline the clinical

features, diagnostic modalities of OSA including nasal endoscopy, imaging, sleep studies and demonstrate the treatment planning with appropriate cases from his case files.

The presentation will help the GDP to identify OSA and provide idea for management or ideally referring to specialists.

Learning Objectives:

1. Help the GDPs to identify the OSA and its impact on dentistry as well as quality of life
2. Help GDPs to provide proper directions to treatment of OSA including specialist referral
3. Help GDPs to institute proper treatment for milder forms of OSA

Keywords :

Sleep Apnea; Oxygen deprivation; Sleep dentistry

N07

The Extent in Each Area of the Oral and Maxillofacial Surgery Practiced in the United States Today

Sung-Kiang CHUANG

Clinical Full Professor, Oral and Maxillofacial Surgery, University of Pennsylvania
Oral & Maxillofacial Surgeon, Brockton Oral & Maxillofacial Surgery Inc



In the United States, the field of Oral and Maxillofacial Surgery (OMS) is a specialty of dentistry that focuses on the treatment of injuries, diseases, and defects of the head, neck, face, and jaws. At the present time, there are approximately 100 OMS residency programs and 4,500 practicing oral and maxillofacial surgeons in the United States. In addition, there are approximately 30 fellowship programs that provide oral and maxillofacial surgeons additional advanced training post-residency in craniofacial surgery, reconstructive surgery, oncologic surgery, and cosmetic surgery.

The purpose of the following brief presentation is

to summarize the findings of a survey that we conducted to determine the extent to which each core area of OMS is practiced, the scope of the OMS practice, and the frequency, patterns, and trends that the corresponding procedures are performed in the United States today.

Reference:

Stanbouly D, Yaminian J, Lee KC, Chuang SK. To What Extent is Each Area of Oral Maxillofacial Surgery Practiced in the United States Today? *J Oral Maxillofac Surg.* 2022 Mar 5:S0278-2391(22)00155-0. doi: 10.1016/j.joms.2022.02.015. Online ahead of print. PMID: 35366420

Denture Care for Elderly Person

Guang HONG

Professor/Vice-Dean of Tohoku University Graduate School of Dentistry



The number of people wearing dentures with dentures is increasing due to the progress of the super-aging society, and denture care, including relining the denture, cleaning dentures, managing dentures, and using denture adhesive becomes more critical for those elderly persons who wear dentures to improve oral-related QOL. Denture lining materials have several types and also have different mechanical properties. When we focus on the development of new dental materials we should understand the properties of materials. The denture adhesives are roughly classified into denture

adhesives and home reliner. Furthermore, denture adhesives are classified into three types: cream type, powder type, and sheet (tape) type. Denture cleansers also have several types such as Hypochlorite, Peroxide, Enzyme, and so on. Correct use of those materials and correctly introduction of those materials to patients is a critical issue. Otherwise, these materials can make some side effects. In this lecture, I will introduce the basics of denture lining materials, denture adhesives and denture cleansers, how to use them, and patient guidance.

N09

Multipurpose bioceramic materials in endodontics and clinical applications

Henry, Hyeon-Cheol KIM

Vice-Chair, Busan Metropolitan City Dental Industry Support Committee



In contemporary endodontics, the bioceramic materials are commonly used for clinical procedures. Especially the root canal obturation using the calcium silicate sealer has been reported as an effective pressure-less technique. Recently introduced pre-mixed putty type bioceramic materials are getting popularity as a MTA substitute and used for vital pulp therapy such as direct capping and pulpotomy as well as the materials for root-end filling in surgical procedures.

This lecture will present various clinical indications of calcium silicate based bioceramics. Cases of

intentional replantation and pulp revascularization using pre-mixed bioceramics will be detailed with some clinical video clips.

- Basic understanding of endodontic bioceramics
- Bioceramic root canal sealer and its advantages
- Pre-mixed MTA and clinical applications
- Indications and clinical cases of "Intentional Replantation"
- Clinical technique of "Pulp Revascularization procedure"
- Putty type calcium-silicate and its usage as extraordinary endodontic procedures

End Goals of Oral Rehabilitation: Functions and Aesthetics

Liang-Lin SEOW
Dean, Professor, International Medical University



Dental practitioners aspire to provide high standard of care for their patients, with end goals of bringing back brilliant smiles for the patients and also improving oral functions. Usually, dental practitioners think of an oral rehabilitation as restoration of all the teeth in a given mouth. However, restoring only the defective teeth in any mouth could be defined as an oral rehabilitation. A combination of various treatment approaches and procedures can be employed to achieve the ultimate aim of renewing the functions

and aesthetics. This allows patients to smile more confidently and improve their quality of life. Oral rehabilitation can be carried out for patients with excessive tooth wear, certain dental conditions that have been treated improperly, congenital abnormalities etc. This presentation aims to provide an overview of treatment planning for oral rehabilitation, detailing the principles, procedures and materials to achieve the desired functions and aesthetics.

Dental Implants in Aesthetic Zone

Suresh SHANMUGANATHAN

Senior Lecturer/ Head of Dept. Of Oral & maxillofacial Surgery, Consultant Oral & Maxillofacial Surgeon, Faculty of Dental Sciences, University of Sri Jayewardenapura



The bone regeneration is an important challenge in the field of implantology. The placement of dental implants can be restricted by deficiency of the alveolar ridge caused by resorption of bone after extraction of a tooth which is invariably followed by significant dimensional changes in the alveolar bone dimension, leading to reduction of the height and width of the alveolar ridge and to a reduced amount of available residual bone for implant placement. Thus, preserving the dimensions of alveolar ridge is an essential factor.

The regeneration solutions aim to develop

novel treatments to restore tissue function. Many surgical principles and materials can be used to fill the extraction socket, aiming to keep the shape and the size of the extracted tooth socket and facilitating in placing the dental implants. The grafting materials traditionally used include autogenous, allografts xenografts, or alloplast materials and use of autologous bone is considered the gold standard in bone regeneration.

This presentation will discuss the presently practiced techniques in regeneration of bone in dental implantology.

Systemic Diseases, Oral Mucosal lesion and the Health care Practitioner

M Thomas ABRAHAM
Consultant of Bukit Tinggi Medical Centre



Many of the oral lesions are closely associated or occur as a result of the underlying systemic diseases. Many a time as a dental health care practitioner we recognize the oral lesion without paying too much importance of its association with systemic diseases. Recognizing these oral mucosal lesions can help in making an early and accurate diagnosis of some of the systemic diseases. Some of these systemic diseases which we see in our day to day clinical practice may present itself as diseases involving oral & perioral tissues prior to the full blown clinical systemic presentation.

In this presentation we select a few important systemic diseases and it's relationship to oral diseases.

We hope to highlight these important conditions, that we come across in our practice, it is necessary to identify them and make an accurate differential diagnosis in order to come to a definitive diagnosis which is important for its definitive management. It is also important to highlight our medical colleagues about the oral lesions which are due to the systemic conditions and it's management. We offer practical guidelines to diagnosis, and management of these conditions for the dental health care practitioner. An early diagnosis and management of these lesion help in treating these conditions successfully or making an appropriate referral which would alleviate the patients suffering or anxiety.

Free Flow of Dental Practitioners across ASEAN: From Politics to Dental Education Development

Suchit POOLTHONG
Former_ Dean of Chulalongkorn University
Quality control of dental education in Thailand



The Association of Southeast Asian Nations (ASEAN) was formed in 1967 and its members currently comprise 10 countries. This political and economic organization has emphasized regional cooperation and finally formed the ASEAN economic community (AEC) in 2003 with the aim of making ASEAN more dynamic. Consequently, AEC expects to become a competitive economic community by initiating a single market. The single market comprises five core elements; the free flow of goods, services, investment, capital and skilled labor. The free flow of qualified dental professionals and services across the ASEAN region therefore are one of the missions as the

single market is formed.

This presentation will review the development of higher education in ASEAN as a part of a single market in which the free flow of dental services and professionals is facilitated from the past to present. The ASEAN Joint Coordination Committee for Dental Practitioners (AJCCD) that is responsible for this task has appointed a group named the Technical Working Group – ASEAN Dental Education (TWG-ADE) to prepare a roadmap for the free flow of dental practitioners. The roadmap will be described in detail and the efforts that have been made as well as obstacles will be discussed.

N14

Unconventional Endodontic Management in the Posterior Region

Gary, Shun-Pan CHEUNG

Consultant (Dental Service), HKU Health System, LKS Faculty of Medicine, The University of Hong Kong



A tooth become "hopeless" and not worthwhile to treat endodontically when its residual tooth structure could not be restored satisfactorily. However, and realistically, restorability of the tooth is more likely to be determined by the "forceps level" of the operator, which invariably differs from one dentist to another, and among dentists with different interests (or specialty) and skill sets. The treatment plan often depends on which practice the patient chooses to visit, rather than the indications that are stated in dental textbooks. From a technical viewpoint, nearly all roots can be managed endodontically, if placement of a definitive restoration should be feasible. The advent of digital dentistry has facilitated many aspects of restorative and surgical dentistry, but it does not replace logical treatment planning process and proper informed consent. Patient

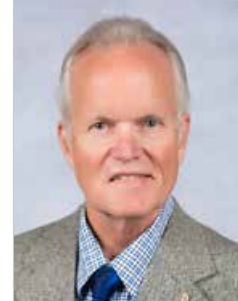
expectation is another variable that must be managed.

For the badly broken-down posterior teeth, there are many treatment options available, as well as factors influencing that choice. Are root canal treatment and extracoronary restoration, or extraction then single-tooth implant, the best offer to restore form and function? Should autotransplantation be a preferred option? This presentation will discuss on what constitute the best treatment for those hopeless and badly broken-down teeth from the viewpoint of function, cost-effectiveness and prognosis. Treatment options, such as root resection and hemisection from the olden days, to the more recent autotransplantation, will be discussed. It will also describe how digital manipulation may facilitate the autotransplantation procedures.

Current Considerations in Minimally Invasive Endodontics: Vital Pulp Therapy, Guided Access, and Enhanced Irrigation Technology

Bradford R. JOHNSON

Professor, Department Head, and Director of Postgraduate Endodontics of University of Illinois Chicago
(USA)



New technology in endodontics and changing appreciation for the preservation of natural tooth structure during endodontic treatment has changed the way we practice root canal therapy in the past decade. Vital pulp therapy procedures, ranging from direct pulp cap to complete pulpotomy, have emerged as viable alternatives to traditional root canal treatment (complete pulp extirpation, canal disinfection, and obturation). The emerging recognition of VPT as an option in specific situations has become possible with a better understanding of pulp biology and biocompatible restorative materials (for example: calcium silicate cements and restorative materials).

Teeth with heavily calcified pulp canal spaces have

always presented a challenge for clinicians and often render a tooth non-treatable. The growing acceptance and availability of CBCT imaging and 3D intraoral scans opens possibilities for custom guides to assist in the location of calcified or receded canals. A variation of this technology can also allow for the fabrication of custom surgical guides.

Complete canal debridement and disinfection has always been a weak link in root canal therapy. New devices allow for enhanced disinfection of the canal space with multi-sonic irrigation and/or laser-assisted irrigation. Bench top studies demonstrate improved canal cleanliness, although clinical outcomes studies to support the use of these devices is currently limited.

Navigating the Oral Health and Cancer Link: Implications in Advancing Human Health

Margaret SAELLBERG CHEN
Professor of Karolinska Institutet



The growing link between poor oral health and cancer has captured considerable attention in biomedical research, unveiling compelling insights that expand the boundary of dentistry. Recent studies shed light on potential associations between insufficient oral hygiene and an increased risk of specific cancers. Conditions such as periodontal diseases contribute to chronic systemic inflammation, creating an environment conducive to cancer development, particularly in the digestive and respiratory tracts. Notably, distinct oral pathogens have been identified within tumor tissues in distal body sites, unraveling the intricate relationship between oral diseases and cancer pathogenesis. This

advancing comprehension not only underscores the crucial role of oral hygiene in dental and overall health but also introduces a proactive healthcare dimension – preventing cancer and enhancing longevity. Maintaining good oral health emerges not only as a cornerstone of dental health but also as a robust defense against oral health-related cancers.

In the pursuit of longevity and an improved quality of life, integrating oral health into comprehensive health strategies becomes imperative. Public awareness and education are crucial, where the integral role of oral care in fostering a healthier life is essential in the era of personalized health.

Improvement of the Interface Between the Restoration and the Tooth

Junji Tagami 田上順次

Professor Emeritus · Tokyo Medical and Dental University



Integrity of the interface between restoration and tooth is one of the most important issues to ensure the quality of restoration. Especially in the case of the direct composite restoration, the internal interfacial integrity and the marginal integrity must be achieved. Selection of the adhesive, handling of the material, and filling technique of the composite resin influence the sealing between tooth and filling. Particularly, the control of shrinkage stress of the composite resin should be carefully performed. Restoration margin is also recognized as the most significant part to determine the esthetic quality as well as the sealing property of the restoration. To create the integrity of the restoration margin, prevention of the enamel fracture at cavo-surface margin should be avoided.

Phosphoric acid etching is generally applied with both etch and rinse type and self-etching type adhesives, however, the phosphoric acid etching to the cavo-surface enamel was confirmed to cause more enamel fracture than self-etching procedure. The frequency of the enamel fracture is also influenced by the direction of enamel prisms at the cavity wall. The applications of marginal bevel and less invasive surface treatment are recommended. For obtaining the color matching between the restoration and surrounding tooth, the newly developed composite resin with the structural color effect exhibit the unique performance, providing us the invisible margin of the restoration. The photonic characteristic of the composite resin and enamel is also discussed in the lecture.

A clinical update on Invisible Orthodontic Appliances

Wilson LEE

Honorary Clinical Assistant Professor at the University of Hong Kong



1. Abstract:

Invisible orthodontic appliances have undergone a significant paradigm shift since millennium began, revolutionising the way orthodontic treatment is delivered. Previously, metal braces were the traditional mode of treatment, which were visible and often uncomfortable. However, advancements in orthodontic technology have led to the development of invisible orthodontic appliances including lingual appliances and aligners, which are designed to be virtually invisible and more comfortable for patients. The biomechanics and indications are different in both appliances and we have to be aware of the limitations in each appliances. Although aligner is a popular invisible orthodontic

appliance, clinician should be aware that there are others available option in expert orthodontist's hands. Dr. Lee will discuss with illustration of clinical cases about the various treatment options in contemporary orthodontic practice.

2. Learning objectives:

- a) To understand the indications and contraindications of aligners
- b) To understand the indication and contraindications of lingual appliances
- c) Learn basic biomechanics of orthodontic treatment
- d) Update on research in invisible orthodontic appliances

3. Keywords: aligners, lingual appliances, orthodontics



N19

Periapical Lesions – Size, Shape, Diagnosis and Clinical Management

Boon Tik TAN
Tan Endodontic Dental Specialist Centre



Abstract:

Periapical lesions of endodontic origin may be presented radiographically as periapical radiolucencies of various sizes and shapes. Their treatment modalities will depend on the understanding of their disease process and the architectural components of the lesions. It is important to point out that not all periapical radiolucencies are endodontic origin. Therefore, accurate diagnosis and management are very important in effectively treating all these different types of lesions. In this lecture, various clinical cases will be utilized to elaborate the clinical diagnosis and management

of periapical lesions of both endodontic and non-endodontic origin.

Learning Objective (3-4 objectives)

1. Understand the differential diagnosis of periapical lesions.
2. Understand the aetiology and pathogenesis of periapical lesions.
3. Formulating effective treatment modalities and steps to prevent recurrence of periapical lesions.

Key words (4-5 key words)

Periapical lesions, diagnosis, treatment plan.



N20

Diet as a novel and innovative strategy for dental caries prevention

Christine Da-Ruh WU

University of Illinois Chicago, College of Dentistry, Pediatric Dentistry Department



Dental caries is a multifactorial disease and is the most common chronic oral disease that affects all ages. Dental plaque, an adherent microbial biofilm community on the tooth surfaces, ferment dietary carbohydrates to produce acids leading to carious lesion formation. Classic approaches to dental caries prevention have mostly been based on administration of fluoride, removal of plaque bacteria mechanically or by anti-plaque oral hygiene products and substitution of dietary sucrose by less-cariogenic sugars. In recent years, health-conscious consumers are receptive in natural ways to help improve oral health and overall well-being, e.g., through diet. Dietary recommendations for caries prevention have traditionally emphasized the avoidance of cariogenic diet high in sugars and fermentable carbohydrates. However, research has shown that certain foods and food components, especially plant-derived polyphenols, in edible vegetables and fruits may have caries protective effects and reducing caries risk. Studies have shown that tea polyphenols inhibit growth and cariogenic virulence factors such as acid production, plaque biofilm

formation and adhesion, metabolic activity, gene expression and mechanical integrity. Rinsing with tea extracts significantly reduced plaque pH fall, lowered plaque index and plaque regrowth and acid production. Berries polyphenolic bioactives also inhibits plaque growth, enzymes and biofilm. Polyphenols stimulate salivary flow and enhance salivary antibacterial properties. They also enhance protein absorption to enamel surface, increase the thickness of pellicle, and protect enamel against dental erosion. Dairy products including milk and cheese are considered cariostatic by neutralizing and maintaining a healthy dental plaque pH and reduce plaque pH drop after sugar consumption.

CONCLUSIONS: The role of diet on caries should not solely be seen from a caries causing standpoint, but from the caries protective perspective. Emphasis on food components that may protect against caries represents an alternative, novel and innovative approach to prevention of the disease. Further in vivo studies are needed to evaluate the protective role of diet in caries prevention.

N21

Predicting the success of bone grafting in the alveolar bone and jaw reconstruction

Jay Hansel TABIJE
College of Dentistry, University of the East Manila



Bone reconstruction whether it is for implant site development or to reconstruct following ablative surgery is necessary to restore function and improve aesthetics. As such it has now become essential in improving patient's quality of life.

The available publication regarding bone reconstruction is replete. From Case reports, technical reviews, and researches. Although there is a large amount of published data on bone reconstruction

a definitive assessment showing what method or technique work for a patient is still undetermined or at the least varying.

A Technical review of accepted methods of reconstructing bone alveolar bone and jaw will be presented as well as a Review of available literature and meta-analysis to see the current status of various bone reconstruction techniques and determine how predictable bone grafting can really be.

Dental Considerations Before and After Alveolar Bone Grafting in Cleft Patients

Glenda H. DE VILLA

Consultant, OMFS Asian Hospital and Medical Center



Our Lady of Peace Craniofacial Center sees an average of 634 cleft patients per year for various multidisciplinary procedures and does an average of 295 cleft surgeries per year. We see patients who can undergo the ideal protocol of nasoalveolar molding at 0-3 months of age, cheiloplasty at 3 months old, palatoplasty at 1 year old and alveolar bone grafting at 7-9 years old. However, we also see patients who have missed the ideal timing of surgery.

One important part of the treatment is alveolar bone grafting for those with complete unilateral or bilateral clefts of the lip and palate. The ideal timing is before the canines erupt into the alveolar cleft gap. What are the dental considerations that must be attended to prior to the surgery? Healthy teeth beside the alveolar cleft, no pathologies in the maxillary teeth, moderate to narrow cleft gap, well-aligned lateral

segments and premaxilla at the level of the lateral segments. After the bone grafting is done, care must be taken to avoid dehiscence of the surgical wound, orthodontics may be started 8 weeks after surgery, and the unerupted teeth must be observed for their proper eruption. If they do not erupt, then a second surgical procedure must be done to expose the canines and do orthodontic forced eruption. The outcome of a well-formed and well-aligned maxillary arch is the goal. Skeletal discrepancies must also be observed, to find out if there is a need for orthognathic surgery.

This lecture will describe our experiences with alveolar bone grafting in various ages and stages of growth of the cleft patient and the dental considerations we have had to deal with before and after the surgery.



N23

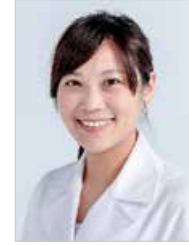
Embracing Innovation in Dental Education: Breaking Barriers and Shaping the Future

Chien-Ju LIN

Adjunct Attending Staff in Prosthodontics of National Taiwan University Hospital

Chen-Ying WANG

Clinical Associate Professor, Attending Staff in Periodontics of National Taiwan University



Despite the challenges posed by the pandemic, it has also spurred innovation. In this speech, we will explore how online learning can break geographical barriers, making dental education more flexible. Additionally, digital simulation education provides students with practical clinical experiences and helps develop their operational skills. This transformation not

only challenges our traditional notions but also begins a new era in dental professional education.

This speech will guide us in understanding how to leverage the power of technology to reshape the future of dental education. We look forward to discussing with you how we can collectively create a more innovative and resilient learning environment.

N24

Digital Dentistry 2.0: Connecting the Clinical Digital Workflow for Improved Patient Care

MARK E. PALMER
Henry Schein VP & GM, Zahn Dental



In today's rapidly evolving global dental market, digital technology has emerged as a transformative force, revolutionizing the way dental professionals approach implant and prosthetic cases. Henry Schein is driving the evolution of the digital workflow from patient acquisition to the actual final restoration. The Henry Schein Digital Workflow makes treatment easier, faster and results in repeatable quality patient care with enhanced experiences. We will explore the progress and influence of digital technology, showcasing guided implant and prosthetic cases that highlight its capabilities. In particular, we will delve into prosthetic resin technology, emphasizing its role

in enhancing precision and efficiency. With a focus on Desktop Health printers and resins, we will demonstrate how these cutting-edge solutions empower dental practitioners to deliver superior patient outcomes. Additionally, we will discuss advancements in Henry Schein technology for the digital workflow and communication between dentists, specialists, and dental laboratories, showcasing how these innovations streamline collaboration and enhance patient care. We will finish with opportunities for what's next in the exciting possibilities for the future, including advancements such as bone plotters capable of printing actual bone.

N25

Dental Education for Students at HKU - the Use of Simodont in Preclinical Education and Its Transition to Clinical Education

Century, Hin-Kei TSANG
Hong Kong Dental Association



Dental simulators are gaining popularity in modern dental education. These simulators offer an immersive, lifelike, and interactive learning environment that enables students to practice and refine crucial clinical skills before treating actual patients. They serve as a bridge between theoretical concepts taught in

classrooms and the practical experience needed in clinical settings. In this session, Dr. Tsang will provide insights on the impact of transitioning from DentSim to Simodont on dental education at the University of Hong Kong.

The Development and Role of Thai Dental Association in Tobacco Cessation in Thailand

Dr. Adirek S.Wongsa
President, The Dental Association of Thailand



Tobacco cessation in Thailand was initially developed under the courageous leadership of Minister Sudarat Keyuraphan, the former Minister of Public Health, in 2001. This initiative saw a significant increase in excise taxes and the generation of health revenue through earmarked taxes, leading to the institutionalization of the Thai Health Foundation, which later became a financial backbone for preventive and promotive activities against tobacco & alcohol consumption in Thailand.

The Dental Association of Thailand, sponsored by Thai Health Foundation has played a crucial role as an initiator and coordinator for the "Tobacco Control by

Dentist Project" since 2005. This project encompasses five work plans targeting five sectors within the dental profession: dental clinics of the Bangkok Metropolitan Administration, the Ministry of Public Health (MoPH), private dental practices, dental schools, and dental researchers.

Each work plans run by offering capacity building for dental profession, social campaigns, cessation services, innovative techniques, and oral cancer screening. Participation exceeds 100,000 people per cycle, and this number continues to grow significantly, demonstrating a growing impact on tobacco cessation efforts in Thailand.

N27

Tobacco Cessation in the Dental Practice

Hiroshi Ogawa

FDI council

Member for International Affairs, Japan Dental Association

Graduate school of Medical and Dental Sciences, Faculty of Dentistry, Niigata University



All health professionals have a prominent role to play in tobacco control. It is now accepted that helping tobacco users to quit is part of the role of health professionals, including dentists and other oral health professionals.

FDI Tobacco Cessation project was launched in 2020 to provide oral health professionals with smoking cessation and control resources that can be

implemented in the dental setting in collaboration with other relevant health professionals.

This presentation will summarize what is currently known about the concepts and theories associated with smoking cessation and illustrate practical implementation of tobacco cessation measures in dental settings through the scope of FDI as well as WHO.

Surface Modifications for Dental Implants

Her-Hsiung HUANG

Department of Dentistry, National Yang Ming Chiao Tung University, Taiwan



Dental implants have been widely used in dentistry. The surface properties of dental implants (titanium and zirconia) play an important role in the osseointegration of the implant. Therefore, proper surface modification is essential for titanium and zirconia dental implants, which usually have biologically inert surface character. In my talk, I will first introduce the background and some current status of dental implants. Then, I will focus on surface modifications of titanium and zirconia dental implants. Depending on the cross-sectional morphology, surface modifications

will be categorized into three groups, including (1) concave surfaces (meso-/nano-/submicron-/micron-scaled porous oxide on rough surfaces), (2) convex surfaces (multifunctional biomolecule immobilization on rough surfaces), and (3) smooth surfaces (ionic implantation on smooth surfaces). In general, surface modifications, including mechanical, chemical/electrochemical, and/or biological methods, can be used to improve osseointegration of dental implants, with considerations being the use of simple, rapid, cost-effective, and/or environmentally friendly processes.



C02

Simple GBR Technique with Novel Bone Graft Material for General Implant Dentistry

In-Woong UM
 Dental Director, Seoulin Denatal Clinic
 Director of R&D institute, Korea Tooth Bank



As the autogenous bone graft still remains "Gold Standard" in implant dentistry, several bone graft substitutes have been developed and tied to come up with "God Standard" in terms of components and function such as osteoinduction, osteoconduction and osteogenesis.

Based on the highly ranked evidence-based literature and highly qualified certification, I will introduce the bone graft technique using Hu-BT on socket preservation (ridge preservation), ridge augmentation, guided bone regeneration, ridge split and sinus augmentation as Simplest Bone Graft Technique.

Since the introduction of tooth derived bone graft substitute in 2015 (Hu-BT, Korea Tooth Bank, Seoul, Korea), the clinical safety and efficacy has been approved by KFDA and KAHW as similar as "Gold Standard" in component and function.

In addition, I will provide clinical studies and long term clinical results whether or not we achieve the final

goal of bone graft in dental implant as the "Evidence-Proof" of "Successful Implant".

Reference

1. Allogeneic Demineralized Dentin Matrix as rhBMP-2 Carrier: A Retrospective Clinical Study
 Int J Oral Maxillofac Implants 2022;37:1138–1144.
 doi: 10.11607/jomi.9692
2. Dentin-Derived-Barrier Membrane in Guided Bone Regeneration: A Case Report. Materials. 2021; 14(9):2166. <https://doi.org/10.3390/ma14092166>
3. Allogeneic Demineralized Dentin Matrix Graft for Guided Bone Regeneration in Dental Implants. Applied Sciences. 2020; 10(13):4661. <https://doi.org/10.3390/app10134661>
4. Long-term follow-up of autogenous tooth bone graft blocks with dental implants. Clin Case Rep. 2017 Jan 8;5(2):108-118. doi: 10.1002/ccr3.754.
5. Autogenous Tooth Bone Graft Block For Socket Preservation: A One-Stage Technique. Dentistry 2017, 7:2 DOI: 10.4172/2161-1122.1000414



C03

Achieving aesthetic orthodontic outcomes with the latest CAD/CAM driven solutions

Lawrence, Than-Fui YONG
Founder of PKWY Dental Specialist Practice



The quest for efficient and predictable treatment is the goal of every orthodontic plan. CAD/CAM driven solutions have been touted to possess the advantages of customised teeth movement sequencing, targeted and optimal force delivery. The speaker will be sharing

his tips on how today's CAD/CAM technology can aid the dentist in achieving better 3-dimensional control of the dentition and aesthetic treatment outcomes that our patient desires.



C04

Doing a Business Check of Your Dental Practice

Cheryl Y. Del Rosario
President of We Smile Dental Center, Inc.



Managing and running a dental practice in 2024 requires a considerable revamp of the daily operations necessary to keep it going and growing. As trained clinicians, we focus our development in mastering our clinical skills. To smoothly implement dental treatments, the tedious business side of dentistry must

also be given the same attention. Failing to do so is resource and time consuming. In this session, we revisit simple principles of "dental economics" to cope with the hustle and bustle of the clinic goings-on to achieve our long-term professional success.

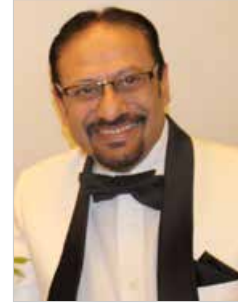


C05

Emax Excellence: Elevating Aesthetic Restorations

Deepak MUCHHALA

- Maintains a state-of-the-art practice in Mumbai since past 40 years with special attention on Conservative & Aesthetic Dentistry/Smile designing and Implantology.
- Consultant Dentist at Bhartiya Arogya Nidhi Hospital in Juhu (Mumbai).
- Consultant Dentist at Stoma Dental, Mumbai.



Abstract-

In the realm of aesthetic dentistry, the pursuit of excellence is perpetual, driven by the ever-evolving demands of patients for natural-looking, durable restorations. Among the array of materials available, lithium disilicate (Emax) stands out as a frontrunner, offering a unique blend of strength, translucency, and versatility.

We shall understand the role of Emax in elevating aesthetic restorations through a synthesis of scientific literature and clinical experiences. These elucidate the

superior aesthetic outcomes achievable with Emax, highlighting its ability to mimic natural dentition while providing exceptional durability. Furthermore, the evolving techniques and advancements in Emax fabrication, including CAD/CAM technology and digital smile design, which further enhance its precision and customization. By embracing Emax excellence, dental practitioners can redefine aesthetic standards, empowering them to create seamless, enduring restorations that inspire confidence and satisfaction in patients.



SYMPOSIUM

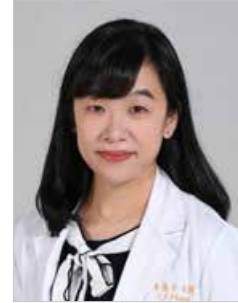


S01

Prosthodontic Rehabilitation and Oral Care in Patients with Head and Neck Cancer

Yi-Fang HUANG

Department of General Dentistry, Chang Gung Memorial Hospital, Linkou Branch, Taiwan.



The different treatment modalities of head and neck cancer often severely alter oral function and conditions to reduce the quality of life. Oral mucositis and osteoradionecrosis are the most common complications derived from chemotherapy and radiotherapy. Utilizing dental prophylaxis to reduce the oral infections then prevent oral complications should be taken seriously and promoted. Prosthodontic rehabilitation is essential to regain the oral function

after tumor excision but the changed oral conditions usually compromises prosthetic design and functional outcomes. How to overcome this physical limitations to recover the masticatory performance is an important issue. Many increased dental insights from prevention to reconstruction has developed to improve quality of cancer care. This lecture addresses the role of dentist in the multidisciplinary treatment of head and neck cancer patients from start to finish.



S02

Root Coverage and Care

Ji-Jong YAN

National Taiwan University Hospital Bei-Hu Branch



People in modern life and work are often tight and stressful. Additionally, orientals are born with thinner periodontal phenotype and gingival recession easily occurs. Over time, people often suffer from dentin sensitivity. In the treatment of gingival recession,

connective tissue grafting combined coronal positional flap is an effective way. On the other hand, using products on the market for removing tooth sensitivity as early as possible because it can prevent or reduce the problems of tooth sensitivity.



S03

The Biotype of Peri-Implantitis and Its Regenerative Therapy

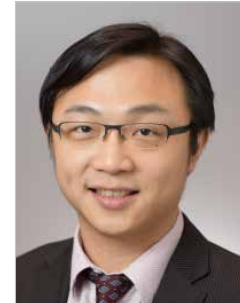
Chin-Wei WANG

Associate Professor, School of Dentistry, Taipei Medical University (TMU)

Director, Division of Periodontics, TMU Hospital

Adjunct Clinical Associate Professor, University of Michigan School of Dentistry

Adjunct Associate Professor Graduate Institute of Clinical Dentistry, National Taiwan University



Peri-implantitis is an emerging endemic that strikes major challenge for dental professionals. Despite with new technology, there is still no established predictable treatment. We not only need to arrest disease progression, but also the ultimate goal is to regain peri-implant supportive bone with regenerative therapy for re-osseointegration. Limited long-term studies

have critically evaluated its outcome and validated the stability of such approach. During this presentation, we will update our understanding of a prognostic biotype for peri-implantitis with immunoscore and share lessons learned from a prospective clinical trial on laser-assisted regenerative therapy. Future optimization is positive.

S04

How to Create, Maintain and Enhance the Health of Dental Implants

I-Ting WU

Director, Division of Periodontics, China Medical University Hospital
Assistant professor at China Medical University



With the advancements in technology and healthcare, coupled with the global increase in the aging population, artificial tooth implantation has become a common option in dental treatment. While the health benefits brought by this treatment are undeniable, the accompanying complications are also on the rise. Creating, maintaining, and enhancing the health of dental implants have become essential knowledge and skills for professionals in this field. Since tooth implantation treatment covers a wide range, including basic surgery and prosthetic knowledge, as well as collaborative treatments such as orthodontics and endodontics, this content will focus on the following three aspects:

1. Pre-implant periodontal assessment and treatment:
How to quickly determine whether a patient requires advanced periodontal care or can proceed directly to implant reconstruction.
2. Extraction strategies: tissue guidance and reconstruction treatments with collagen-based biomaterials.
3. Maintenance treatment: Clinical assessment and maintenance techniques.

The aim is to prevent problems before they arise by providing easily applicable professional knowledge and surgical skills, thereby creating a favorable oral health environment that can be easily maintained in the future.

Health Humanities in Oral Health Care

Li-Sheng CHEN
Professor, Taipei Medical University



Health Humanities after medical humanities has been proposed as a new avenue for integrating creative arts and humanities into evidence-based studies, medical education and practices, and public health for health professionals. While it continues to play an important role in humanity with the integration of anthropology, archaeology, social science, philosophy into health, the recent anthropogenic changes on human health have broaden the scope of health humanity with the urgency to synthesize more interdisciplinary researches to improve the global oral health on the earth under the principle of sustainable development goal.

Currently, the world is facing threats from extreme weather events and the international conflicts, which

could possibly bring impacts on oral health care. Global warming causes ecosystem disruptions, leading to food, fuel, and water shortages, exacerbating global health crises and increasing vulnerabilities worldwide.

The enormous effects on oral health were clearly seen particularly during the COVID-19 pandemic. It had a significant influence on the progress towards achieving the SDGs. These included uneven distribution of primary prevention and the delivery of treatments, health inequality on racial and marginalized population, additionally economic repercussion resulting from polycrisis and persistent health inequality from person, community, country, and globe. There could be new challenges in universal oral health care affects progress toward the SDG.

S06

New Technology for Effective Oral Healthcare Training

Hsiao-Ling HUANG

Professor, Department of Oral Hygiene, Kaohsiung Medical University
President, Taiwan Academy for Dental Hygiene



The use of augmented and virtual reality (AR/VR) technology in higher education has been regarded as a promising development because its combination of immersive and interactive features enables experiential learning. The VR/AR training system enables learners to learn on their own, even in the midst of the COVID-19 pandemic. This talk will provide the effectiveness of using AR/VR training system on geriatric oral care performance among oral hygiene student and health care assistants (HCAs). For dental hygiene students, a randomized controlled trial was conducted. The participants were randomly assigned to experimental (EG; n=11) and control (CG; n=12) groups. The students in EG received a 2-hour intervention of VR training for elderly oral health care at 2-week (Time 1), 4-week (Time 2) and 6-week (Time 3) follow-ups. After intervention, the EG exhibited

a more significant improvement in oral care-related knowledge, attitude, and self-efficacy at Time 4 than the CG did. The students' intention to assist the elderly improved significantly at Time 3. For HCAs study, we combined an AR and VR training system with the aim of improving the geriatric oral care performance. Overall, 80 certificated HCAs were randomly assigned to a VR/AR group (n=40) or control group (n=40). HCAs in the VR/AR group received 2.5 hours of combining VR and AR simulation training on geriatric oral care. The CG did not receive any interventions. Compared with the control group, the level of oral care-related knowledge, attitude toward oral care, self-efficacy of oral care, and intention to assist in oral care behaviors in the VR/AR group significantly increased at the post-test. The combined use of AR/VR simulation system to train HCAs can effectively improve the oral care ability of the elderly.

S07

The Evolution of Aesthetic Restoration — — The Fabrication and Adhesion of Super-transparent Zirconia Veneers

Chien-Ming KANG

Technical Director , Huayi Dental Laboratory
Vice President, Taiwan Association of Dental Technicians
Vice President, Chinese Academy of Esthetic Dentistry



Since the zirconia material entered the dental market in the early 20th century, this material has been widely used. Its good biocompatibility and excellent operating characteristics have made it a mainstream restorative material in modern dentistry. However, since the zirconia material is a polycrystalline ceramic, it does not contain silica components. Therefore, it is impossible to use the clinical glass-ceramic adhesive-etching process to increase its bonding strength, which makes it difficult to make thin zirconia veneers

clinically. In this course, I would like to share how to operate the lithium disilicate coating to improve the bonding strength of the zirconia restoration, so that the thin zirconia veneer can successfully obtain good bonding strength in clinical practice. The author will share my operation skills, how to make personalized surface features and textures on ultra-thin ceramic veneers. And how to use the ceramic stain paste makes matching to achieve a simulated aesthetic effect.



S08

The Digital Aesthetic Anterior

Yu Fei CHEN
YH DENTAL LAB



How to design esthetic anteriors with digital software? How to choose the material for ceramic crowns?



S09

Unraveling the Mysteries: Advancements in Ameloblastoma Pathogenesis Research and the Journey towards Targeted Therapies

Yu-Fong CHAN

National Taiwan University School of Dentistry and National Taiwan University Hospital Department of Dentistry



In the tireless pursuit of comprehensive oral health, the riddles surrounding ameloblastoma have become a central focus of scientific exploration. This summary encapsulates the recent progress made in unraveling the intricacies of ameloblastoma pathogenesis through cutting-edge research. Recent breakthroughs highlight a more profound comprehension of the complex mechanisms governing the initiation and progression of this odontogenic tumor. By delving into the genetic and molecular nuances, researchers have unearthed crucial insights that illuminate the path toward targeted therapies.

This expedition towards targeted therapies signifies

a transformative phase in the realm of ameloblastoma treatment. The abstract navigates through the promising avenues of precision medicine, where tailored interventions have the potential to redefine patient outcomes. Standing at the threshold of a new era in oral healthcare, the integration of advanced research and targeted therapeutic strategies emerges as a guiding light for individuals affected by ameloblastoma. The summary captures the collective endeavors propelling us towards a future where the enigmas of ameloblastoma yield to the precision of targeted therapies, ushering in enhanced treatment modalities and improved patient well-being.

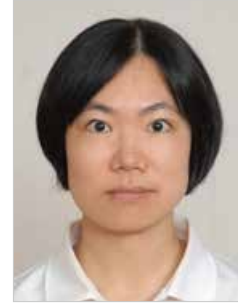


S10

Application of Optical Coherence Tomography in the Diagnostic Dentistry: Experiences from A Medical Center

Ching-Yi WU

Institute of Oral Biology, National Yang Ming Chiao Tung University



Optical coherence tomography (OCT) is a rapidly developing in vivo microscopy technique that has the advantages of being non-invasive, fast, and non-radiative. This technology has the potential to observe oral tissues and diagnose diseases, including dental caries, periodontal disease, and oral mucosal disease. In recent years, the Department of Dentistry at Yang-Ming University and the Department of Stomatology at Taipei Veterans General Hospital have collaborated to explore the application of a locally developed OCT system in dental diagnosis. This system has been shown

to be useful for detecting dental caries and subgingival plaque, as well as for observing the differences in optical coherence tomography scan images of the labial mucosa of patients with different degrees of inflammation in their minor salivary glands or those with and without dry mouth. The possibility of using this system as a screening tool for dry mouth will also be discussed in this talk. We will share our experience using OCT and discuss the advantages, limitations, and potential developments of this system in the diagnosis of oral diseases.

How to Implement A School-Based Toothbrushing Program?

Min-Ching WANG
Pediatric Dentistry, Department of Dentistry,
Taipei Municipal Hospital, WanFang Branch



School-based supervised toothbrushing programs have been substantiated as efficacious community-oriented interventions for the control of dental caries in children. International guidelines and literature have advocated for the commencement of daily toothbrushing with fluoride toothpaste prior to the age of one. Nevertheless, empirical evidence suggests that a significant proportion of caregivers fail to oversee their children's brushing endeavors. Consequently, school-based toothbrushing programs present a viable alternative for instilling appropriate toothbrushing habits among children. It is conceivable that children may not consistently adhere to daily brushing regimens following health education by volunteer dentists. However, the presence of a routine involving a communal brushing session signaled by a brushing bell, accompanied by seeing their peers participating in the brushing activity, may serve as a pivotal catalyst for the

cultivation of children's toothbrushing habits.

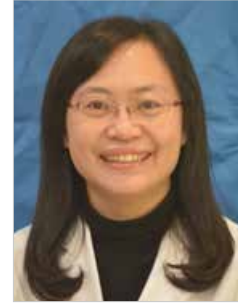
Moreover, it is plausible that children from economically disadvantaged backgrounds may derive greater benefits from participation in school-based toothbrushing programs, thereby potentially mitigating health inequalities. The willingness of school personnel to facilitate the implementation of such programs assumes paramount importance. However, numerous contextual factors, including school size and overall school atmosphere, may directly influence the motivation of school staff. Furthermore, the disposition of school staff may have a cascading effect on the willingness of their colleagues to participate. These factors may beyond the control of program designers, who may endeavor to enhance staff motivation indirectly by designing programs that are straightforward and adaptable.

S12

Dental Treatment of Pediatric Sleep Disorder Breathing

Lichuan CHUANG

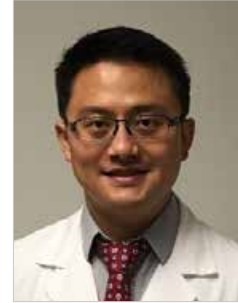
Department of Pediatric Dentistry, Chang Gung Memorial Hospital



1. Introduction and Diagnosis of Pediatric Sleep Disorder Breathing
2. Etiology of Pediatric Sleep Disorder Breathing
3. Symptom and Sign of Pediatric Sleep Disorder Breathing
4. Craniofacial Effects of Pediatric Sleep Disorder Breathing
5. Dental treatment of Pediatric Sleep Disorder Breathing: oral appliance and myofunctional therapy

The Role of Dentists in the Treatment of Obstructive Sleep Apnea

Dennis Chun-Yu HO
Taipei Municipal Wan Fang Hospital



Sleep is a brain physiology, which could be divided into Non-REM and REM sleep. Sleep is controlled by genes and sleep structures are changed by age. Sleep is related to the growth, learning, and memory. Obstructive sleep apnea (OSA) was initially reported by Dr. Guilleminault et al in 1976. OSA is characterized by repetitive episodes of complete or partial collapse of the upper airway during sleep, resulting in periodic cessation of breathing, and intermittent hypoxia. The alteration of craniofacial structures has been associated with OSA. Therefore, dentists have an important role in diagnosis and treatment of OSA.

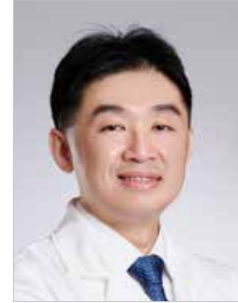
The diagnosis of OSA includes history taking, physical examination, medical images, sleep study and so on. Among them, the standard examination is sleep study. The sleep study is also called polysomnography, which is a painless test that measure how well you sleep and how your body responds to sleep problems. The treatment of OSA includes reduction of body

weight, nasal dilator or nasal allergy treatment, positional therapy, hypoglossal nerve stimulation, oral appliance, continuous positive airway pressure (CPAP) machine, and surgeries. Among them, the CPAP machine has been considered the 1st-line treatment of OSA because of its potential high efficacy. However, patient compliance represents a problem. Oral appliance treated by dentists could be effective in mild to moderate OSA and could be helpful in moderate to severe OSA. The surgery of maxillomandibular advancement (MMA) is one of the effective treatment option for OSA. Among Caucasian patients, an advancement of 10 to 12 mm or more has been recommended. However, a maxillomandibular protrusion can pose a cosmetic issue in Far East Asians. Some modifications should be considered during surgical planning to achieve the balance between airway changes and esthetic outcomes.

The Vital Role of Microsurgical Free Flap Reconstruction in Head and Neck Region

Chia-Yu WU

Department of Dentistry, Taipei Medical University Hospital



Due to tumor resection, trauma, infection and other reasons, the oral cavity and maxillofacial area may require tissue transfer for reconstructive surgery. For medium and large hard or soft tissue defects, reconstruction with free flaps has become a routine treatment method. Commonly used sources of flaps include the forearm, upper arm, anterolateral thigh, and fibula. When dealing with smaller defects, the acceptance of free flaps by physicians and patients is relatively low. However, for some special structures,

such as the tongue, floor of the mouth, retromolar area, etc., if appropriate tissue reconstruction is not carried out, their defects or subsequent scars will cause serious functional damage. Today's expectations for reconstruction should not be limited to helping wound healing but should be aimed at restoring oral and maxillofacial functions. Free flaps are often the first choice for solving these problems. This lecture will explain the application of free flaps for reconstruction of the oral cavity and maxillofacial region.



S15

Restoration of Endodontically Treated Tooth

Yu-Chih CHIANG

School of Dentistry, National Taiwan University



Endodontically treated tooth may experience a reduction in structural integrity, rendering them susceptible to the risk of fracture. Consequently, the overall survival rate of endodontically treated tooth is compromised.

This presentation explores strategies for rehabilitating endodontically treated tooth to extend their functional

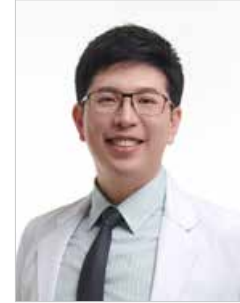
lifespan. Emphasis will be placed on optimizing the interplay between cavity design and the selection of materials for endodontically treated tooth. Additionally, the enhancement of the integrity in between the endodontically treated tooth and the restorative materials is a critical consideration that warrants careful attention.



S16

The Biomimetic Journey from Root Canal Orifice to the Restorative Margin

Wei-Hung HE
Vision Dental Clinic Director



The relationship between dental restoration and endodontics is inseparable. Both need to be considered simultaneously during treatment. How to effectively utilize physiological and anatomical characteristics in treatment to maximize success rate, quality, and efficiency is a topic worthy of in-depth exploration.

Additionally, in the digital age, the flexible use of digital tools like Cone Beam Computed Tomography (CBCT) and Intraoral Scanners (IOS) is also crucial in practice. This lecture will analyze these aspects from a holistic perspective.



S17

My Digital Workflow in Full Arch Screw Retained Implant Prosthesis

Ku-Ming CHEN
Director of Best Dental Clinics



The immediate rehabilitation with a screw-retained implant prosthesis is a reliable treatment option for patients with edentulous ridge.

Digital workflows may increase the efficiency and predictability in full mouth rehabilitation comparing conventional workflow.

This speech will be divided into three topics.

First, we introduced the the conventional workflow

and the role of multi-unit abutment in full mouth rehabilitation.

Second, the speaker would like to introduce how to connect the face scan, intra-oral scan, CBCT, navigation system and digital lab procedure into a whole workflow.

Last but not least, there's a case presentation, and the speaker will make his point about the digit in full mouth rehabilitation.



S18

Digital Removable Dental Prosthesis

Fu-Chuan TSAI

Visiting staff. Division of Prosthodontics, Department of Dentistry, Wan Fang Hospital, Taipei Medical University



Due to constraints related to financial resources, patient physiological and psychological conditions, clinicians often encounter the challenge of crafting aesthetically pleasing and functionally effective removable dentures to cater to the unique needs of their patients. The digital transformation in dentistry has become increasingly prevalent, and the integration of digital techniques in the fabrication of removable dentures has shown varying degrees of influence on both the clinical and laboratory aspects of dental practice.

In this presentation, we will delve into the clinical protocols and production methods that have

been employed in the creation of full arch removable dentures in recent years. These methods encompass a spectrum of characteristics and distinctive features that are essential in achieving the desired outcome. In the subsequent section, we will shed light on innovative manufacturing processes that are still undergoing exploration. We will explore the potential benefits that these processes may bring, as well as the practical constraints that could arise during their implementation. To conclude, we will showcase a range of clinical cases along with their follow-up assessments, demonstrating the real-world impact of these techniques on patient care.



S19

Ceramic and Cementation

Chan-Te HUANG

Chairman, Dental Department, Keelung Chang Gung Memorial Hospital



Ceramic has been used widely during these years. The reasons behind this include the innovation of CAD/CAM process and the advancement of high-translucent ceramic materials. Among these ceramic materials, lithium disilicate and zirconia are the most popular in the market. In this lecture, the characteristics of different ceramic materials regarding their mechanical properties, esthetic properties, and clinical applications

will be covered. Besides, the differences between the way to bond lithium disilicate and zirconia materials will be discussed in detail. Participants will learn how to choose ceramic materials for different clinical scenarios and the technique to effectively bond lithium disilicate or zirconia materials. The newly invented bioactive materials for cementation will be also discussed.



S20

Digital Workflow for Complete Removable Dental Prosthesis -Clinical Procedure, Research & Education-

Tsung-Chieh YANG

Associate Professor, National Taiwan University, School of Dentistry

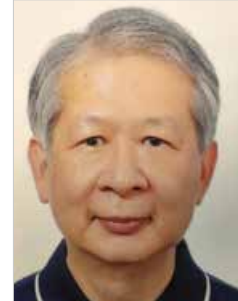


Computer-aided design and computer-aided manufacturing (CAD-CAM) technology has become an effective option to fabricate removal dental prostheses (RDP) for patient with edentulous ridge. With the progressive development of this technology, it improves the characteristic of the materials using in RDPs and makes treatment procedure more efficient. However,

it is still challenging for the patient with severe bone resorption. In the presentation, I would like to present some clinical cases using the digital workflow for RDPs. The challenges regarding the use of this technique will also be evaluated furtherly. Additionally, I would like to introduce the current research and education in our university for this innovative technique.

Experience in 1000 Cases of Oral Sedation Used in Dental Treatment of Patients with Special Needs

Tat-Ming LAI
Cardinal Tien Hospital, New Taipei City



Abstract:

For patients with special needs who have difficulty in clinical cooperation with dental care, the use of general anesthesia, intravenous sedation and nitrous oxide inhalation anesthesia is a well-known necessary method to effectively assist dental care. There are not many clinical reports on the application of oral sedative drugs, but it is convenient and simple to use in dental clinics, and does not require any expensive equipment and monitoring. The use of oral sedatives is a reliable and inexpensive tool to assist the dentist if there is a definite diagnosis and recognized drug limitations before prescribing.

In the past 14 years, the Catholic Cunningham Hospital has provided dental care to more than 1,000 patients with special needs who have difficulty in clinical cooperation using the short-course barbiturate-

Midazolam (Dormicum) as an oral sedative. Midazolam can induce drowsiness, reduce anxiety, relax muscles, and cause loss of new memory. It can help patients with strong muscle rigidity and poor communication such as dementia, autism, and multiple disorders have better clinical outcomes.

During the use of more than 1,000 person-times, less than 5% of the patients could not do any treatment after taking the medicine, and the users had no obvious side effects and sequelae after sedation and dental treatment. Oral sedation is a safe, effective and convenient way to help dentists and special needs patients receive better dental care. In particular, patients with autism and dementia who require regular return visits can reduce the manpower and time of caregivers and dental staff.

What's the Role of Dental Implant in Dementia?

Hsin-Ming CHEN

Associate Professor, School of Dentistry, National Taiwan University

President, Taiwan Association for Disability and Oral Health



Dental implants, with their remarkable success rate of up to 99%, have become a crucial strategy in various dental treatments. However, as the elderly population continues to grow, so does the number of individuals suffering from dementia to be increased. Dementia patients, predominantly older individuals, face not only the challenges associated with aging, such as systemic health issues and oral hypofunction but also the progressive nature of dementia. This poses difficulties when formulating oral treatment strategies for this demographic. One common issue among the elderly, and a significant factor contributing to reduced

oral function, is missing teeth. Dental implants have the potential to address this problem, yet ensuring the necessary oral hygiene and care for maintaining healthy dental implants can be a challenging goal for dementia patients. Understanding the distribution and successful maintenance mechanisms of dental implants in individuals with dementia becomes paramount. This knowledge can play a crucial role in promoting the overall health and enhancing the quality of life for this vulnerable population.

Key words: dental implants, dementia, oral health, aging population, quality of life



S23

How to Face the Challenge and Treatment on the Impacted 2nd Mandibular Molar Impactions

Johnson Hsin-Chung CHENG
College of Oral Medicine, Taipei Medical University



Though the prevalence rate of mandibular second molar impaction is very rare (0.3-2.3%), the orthodontic treatments on these cases are troublesome and challengeable. The problems faced such as difficult for operation, narrowing treatment area, upper 2nd molar supraeruption, 3rd molar interference, near ascending ramus, mobile mucosa tissue..., etc. This report will

present different kinds of orthodontic treatment on these troublesome cases with mandibular second molar impaction. The cohort clinical study was also performed to analyze over 31 orthodontic cases with mandibular second molar impaction. The research results will offer a treatment guideline and principle for these cases.

The Management of Orthodontic Relapse Cases

Chia-Tze KAO

Orthodontic department, Chung Shan Medical University Hospital



Orthodontists often face the challenge of making diagnoses and treatment plans that may not be the most suitable or optimal for patients, driven by market competition. This can potentially lead to the need for patients to undergo a second round of orthodontic treatment in the future.

The optimal timing for orthodontic treatment has been a subject of debate in the literature. Some argue for early intervention to prevent future malocclusion, while others advocate waiting until the patient's growth and development are matured, especially in cases of skeletal malocclusion. In recent years, the concept of myofunctional orthodontic treatment has gained popularity, suggesting that malocclusion is related to soft tissues, habits, or breathing and swallowing functions, thus promoting early orthodontic intervention.

Skeletal Class III malocclusion with mandibular protrusion is more common in Asians than Westerners, and posteriorly displaced mandible with high angle malocclusion can lead to temporomandibular joint disorders or obstructive sleep apnea. Patients with these issues receiving treatment at inappropriate times may experience uncertain and unstable occlusion, potentially resulting in medical disputes.

The purpose of this speech is to introduce the changes in occlusion that occur after early orthodontic treatment in patients with malocclusion who have received improper diagnoses or treatment plans. Through long-term follow-up, we aim to share and discuss this topic with everyone in hopes of further understanding and advancing our knowledge in the field.

S25

講題：「為自己而戰」預防植牙醫療糾紛，你應該做對的三件事

Cheng-Hsiung TENG
Dentist, Yang Xin Dental Clinic



醫療糾紛頻繁及病人濫訴的社會大環境中，牙醫師在執業過程中幾乎每個科別都有機會被找麻煩，特別是目前牙科最夯的植牙，如何保護自己變成是件重要的課題，「告知」、「病歷」、「錄音」做對這三件事，就是保護自己在植牙過程中最好的方式，而其目的就是為了能提得出可以證明自己的證據，「告知」絕不是被告才知道，什麼是「四不一要」及「四緩則圓」？而病歷除了大家最會寫的

「醫療上病歷」或「健保上病歷」外，常忽略了還有更能保護自己的另一種病歷，也就是「法律上病歷」，到底什麼是「法律上病歷」？最後除了病歷之外，牙醫師還能提出什麼證據可以來保護自己？醫療過程中會面對病人或家屬的明錄或暗錄，他們有違法嗎？怎麼應對及處理？病人敢錄，那我們也敢錄嗎？這些就讓老鄧來告訴你。

病人自主於醫療爭議事件之探討 - 以法院實務判決為例

Hsin-Jui WU
Lawyer, Yao-men Attorneys at Law



病人自主權為醫學倫理之四大原則之一，此原則不僅有理論上之重要性，醫療實務也不斷強化病人自主權之重要（尤其是針對不具醫療專業之病患，課予醫師告知同意義務），而此不僅影響醫師執行醫療業務，更對於醫事法律有重要意義，許多醫療爭議事件亦由此而生，不僅相關醫療法規逐步增訂，相關法院實務判決見解亦逐步推陳出新。

整體而言，法律規定以及法院判決所課予醫師之告知義務有逐年加重之趨勢，所謂「告知後同意」，

依目前法院通說判決，亦不僅單純以有無簽署同意書為依據，對於違反告知義務之法律責任，亦有許多重要判決，從事醫療工作者宜有一定程度之認識，使自己得在診治病患之同時，保障自身權益。

本課程旨在說明告知義務之內涵，並輔以具體案例，包含牙科相關判決以及其他科別之醫療實務判決，提供上課學員了解目前法院實務見解之變化，並提出相關意見供學員相互討論、參考。

How to Create a Diverse Gender-Friendly Healthcare Environment

Jheng-Min YU

Chairperson, Gender Equity Committee, Taipei Doctors Union



While Taiwan has legalized same-sex marriage, and implemented the Gender Equality in Employment Act, the Gender Equity Education Act, the Sexual Harassment Prevention Act, and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), gender-related issues have regained attention and sparked discussions amidst the #MeToo movement in Taiwan in 2023. This resurgence of gender discourse encompasses various fields, including instances of gender-related incidents within the medical sector, revealing areas that still require improvement. Integrating these legal frameworks and principles into the medical domain and workplaces necessitates ongoing attention and adaptability. The upcoming

presentation will focus on common gender challenges and occurrences in medical workplaces and clinical settings. Drawing from domestic and international cases and research, it will address gender inequality and controversies. With the recent legalization of same-sex marriage drawing attention to LGBTQ+ issues, the discussion will also encompass terms describing sexual orientation, gender identity, gender expression, and delve into lesser-known transgender issues within sexual minority communities. The aim is for healthcare professionals not only to foster gender-friendly work environments but also to provide comprehensive healthcare services, collectively fostering a friendly and supportive healthcare environment.

Guided Endodontics

Chun-Pei LIN

Endodontist, National Taiwan University Hospital

Endodontist, Longwood Dental Clinic/ ER Dental Center/ GeorgeMicro Dental Clinic



The concept of "Guided Endodontics", including static guide and dynamic navigation, was introduced 7 years ago. Guided Endodontics is one of the most popular topic in endodontics in recent years. CBCT as a 3D anatomical map plays a critical role in guided endodontics. By combining CBCT images with 3D printing technology, static template can be customized and fabricated for special purposes such as guiding apical surgery, locating calcified root canals, or acting as a

template for autotransplantation. On the other hand, dynamic navigation system can integrate instruments and CBCT images and give clinicians a real-time guide. These features could help to reduce the risk of unintentional iatrogenic damage to nearby anatomic structures and thus allowing the endodontist to perform minimally invasive treatment. This lecture will focus on the influence of guided endodontics accompanied by clinical cases and experience.



S29

Acrolein Carcinogenic Potential in Dual Betel Quid and Cigarette Users and the Toxic Potential of Acrolein from Heated Tobacco Products

Tsung-Jung LIU

Institute of Food Safety and Health Risk Assessment, National Yang Ming Chiao Tung University



Betel quid with tobacco has been classified as Group 1 carcinogen by IARC (1985). In Taiwan, almost all betel quid chewers are also cigarette smokers. We have demonstrated that the oral alkaline environment following chewing betel quid facilitates the absorption and enhance the carcinogenic potential of nicotine, NNK and cigarette smoke in vitro and in vivo. Acrolein is a major cigarette-related carcinogen that preferentially causes p53 mutations and inhibits DNA repair function in lung cancer. To test the hypothesis that acrolein is associated with oral carcinogenesis. In healthy volunteers, we have further demonstrated that urinary 3-HPMA (acrolein GSH conjugates) levels in betel quid and cigarette dual user are significantly higher than that in cigarette and betel quid solo users. This correlates well with buccal acrolein

adduct levels. The alkaline oral environment (pH 8-11) following the chewing of betel quid containing slake lime might facilitate the absorption of acrolein (pKa 9.6) during cigarette smoking. Heated tobacco products (HTPs) are applying for marketing authorization in Taiwan. To test the toxic and carcinogenic potential of HTPs, we collected the aerosols from HTPs and conventional cigarettes (CCs), and demonstrated that aerosols from CCs caused higher cytotoxicity and oxidative stress levels than similarly collected aerosols from HTPs. The acrolein content in HTPs (2.34 ± 0.41 g/stick) was significantly less ($p < 0.01$) than that from CCs (18.45 ± 1.08 g/stick). We conclude that HTPs generate less acrolein than from conventional cigarettes; however, the combined use of HTPs and betel quid might still pose a risk for oral carcinogenesis.



S30

The Impact of Porphyromonas Gingivalis on Foam Cell Formation: Implications for the Role of Periodontitis in Atherosclerosis

Ren-Yeong, HUANG

School of Dentistry, National Defense Medical Center
 Division of Periodontics, Tri-Service General Hospital



Periodontal diseases are inflammatory conditions that affect the periodontal tissue, resulting in soft tissue recession, bone loss, tooth loss, and a mild increase in systemic inflammatory factors. The development of periodontitis is associated with many pathogens, among which Porphyromonas gingivalis (*P. gingivalis*) plays a critical role. *P. gingivalis* can also degrade tissue and cause local and systemic pathologies. Recent studies suggest an association between *P. gingivalis* and various systemic diseases, including cardiovascular, cerebral, pulmonary, digestive, bone, and perinatal diseases. Atherosclerosis, a disease with significant cardiovascular complications, is particularly noteworthy among the mentioned systemic conditions.

Atherosclerosis is an inflammatory disease driven by lipids, which occurs due to the dysregulation of lipid metabolism. This leads to the accumulation of lipid droplets in the matrix beneath the endothelial layer of arteries. Foam cell formation is one of the major processes that plays a crucial role in the development of atherosclerosis. The elevation of cholesterol levels increases arterial permeability, leading to monocyte

infiltration into the sub-endothelial layer where they differentiate into macrophages. Studies have shown that *P. gingivalis* can accelerate lipid peroxidation and the progression of atherosclerosis in the presence of oxLDL by infecting macrophages in the arterial intima layer. Studies have shown that *P. gingivalis* can accelerate lipid peroxidation and the progression of atherosclerosis in the presence of oxLDL by infecting macrophages in the arterial intima layer. It is important to note that this is a subjective evaluation and further research is needed to confirm this hypothesis.

This role of foam cells in the initiation of atherosclerosis by forming a necrotic core in atherosclerotic plaques will be discussed. Additionally, it highlights the significance of Porphyromonas gingivalis (*P. gingivalis*), a periodontal pathogen, in this process. *P. gingivalis*, a prominent bacterial species in periodontal disease, can induce foam cells and initiate the process of atherosclerosis formation.

Share Practical Experience - Promotion of Dental Smoking Cessation Services in Taiwan

Min-Yu HUANG
SUNNY DENTAL CLINIC



More than 6 million people around the world die from tobacco every year. Restricting tobacco use is the most effective way to save lives and improve overall well-being. Tobacco contains more than 7,000 harmful chemicals, including 70 known carcinogens that can cause damage to human organs and directly or indirectly cause cancer. Cancer has been among the top ten causes of death in Taiwan for more than 40 years; among them, oral cancer ranks among the top ten cancer deaths, killing more than 3,000 people every year.

In 2013, Taiwan Dental Associations undertook the "Dentists Participation in Smoking Cessation Service Training Program" undertaken by the National Health Service of the Ministry of Health and Welfare to train smoking cessation clinical service manpower, so that trained doctors can prescribe drugs for smoking cessation treatment and provide health education consultation. Knowledgeable; and since 2014, it has helped encourage dentists to invest in clinical smoking cessation services.

Dentists are the frontline medical personnel for patients' oral health. They are in a good position to identify smoking patients and provide effective prevention of tobacco use and smoking cessation. Dental treatment courses can be matched with the smoking cessation treatment service cycle, which makes it easier to track and adjust in real time, and has high patient acceptance.

In addition to encouraging dentists to invest in clinical smoking cessation services, Taiwan Dental Associations also promotes cooperation between dental clinics and smoking cessation hotline service centers. If smokers are found, they will provide referral cards with the telephone number of the smoking cessation hotline service center (0800-636363). Physicians provide verbal explanations and advice to quit smoking; a cooperative network has also been established with the Federation of Taiwan Pharmacists Association. In compliance with the provisions of the domestic smoking cessation service subsidy program, dentists will issue prescriptions



for smoking cessation drugs that cannot be directly prescribed by dentists, patients go to nearby community pharmacies to collect medicines, and pharmacists can also provide smoking cessation education in addition to administering medicines to provide more complete smoking cessation services.

Since smoking has a wide range of harms to

the body: oral disease, lung disease, cardiovascular disease, liver disease, diabetes, osteoporosis, sexual dysfunction, etc., dentists serving in hospitals can work closely with medical staff in other departments (western medicine, pharmacists, hygienists and personal therapists, etc.) form a cross-disciplinary team to jointly implement smoking cessation services.

Tobacco Control Strategies in Taiwan with New Regulations and Measures

Shu-Ying LO

Division Director, Tobacco Control Division, Health Promotion Administration, Ministry of Health and Welfare, Taiwan



Since the implementation of the amended Tobacco Hazards Prevention Act in 2009, in line with international standards and the implementation of the "Framework Convention on Tobacco Control" and the "MPOWER" strategy, the smoking rates among adults, junior high school students, and senior high school and vocational students have been decreasing year by year. The rates have decreased from 21.9% in 2008 to 14.0% in 2022 for adults, from 7.8% in 2008 to 2.2% in 2021 for junior high school students, and from 14.8% in 2007 to 7.2% in 2021 for senior high school and vocational students. Furthermore, the exposure rate to secondhand smoke in public non-smoking areas has decreased from 23.7% in 2008 to 4.0% in 2022.

However, the usage rates of E-cigarettes among junior high school and senior high school and vocational students have notably increased from 1.9% and 3.4% in 2018 to 3.9% and 8.8% in 2021, respectively. Within a short span of three years, they have experienced rapid doubling, indicating the growing threat of E-cigarettes to the health of adolescents. In order to strengthen the protection of children and youth at various stages of development, the Ministry submitted a proposed

amendment to the Tobacco Hazards Prevention Act to the Executive Yuan on October 20, 2020. The key points of the amendment include the addition of a definition for "imitation tobacco product" and a Comprehensive ban on the manufacturing, importation, sale, supply, display, advertising, and the use of E-cigarettes and similar imitation tobacco products. It also establishes a mechanism for strict regulation through health risk assessment review of new types of tobacco products that meet the definition of tobacco (such as heated tobacco products), raising the legal age for tobacco use to 20 years, prohibiting flavored tobacco products, expanding indoor and outdoor tobacco-free public places, increasing the size of health warning labels on tobacco product containers, and imposing heavier penalties, among other strategies. The proposed amendment to the Tobacco Hazards Prevention Act was reviewed and approved by the Executive Yuan on January 13, 2022. It was Passed the third reading in Legislative Yuan (parliament) on January 12, 2023. Promulgated on February 15, 2023. Effective from March 22, 2023.