



LOMA LINDA UNIVERSITY

School of Dentistry

2025 Homecoming

LLUSD Student Poster Competition

February 28, 2025



LOMA LINDA UNIVERSITY

School of Dentistry

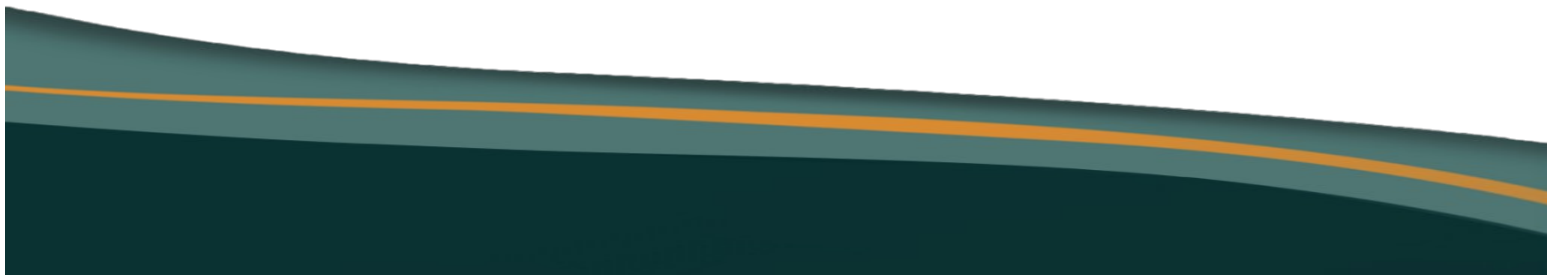
Welcome to the 2025 LLU Homecoming Student Poster Exhibition!

This is the time to celebrate one united alumni weekend and share the exciting results of our amazing student researchers and clinicians!

The poster session includes a total of 52 projects that have been categorized into 5 sections.

The program book outlines,

1. Poster Competition Schedule and Awards
2. Poster Competition Judges
3. Poster Event Student Volunteers
4. Poster Title and Authors by Section
5. Poster Abstracts
6. Poster Competition Judge Form



POSTER COMPETITION SCHEDULE AND AWARDS

	Advanced Education	DH Students (Clinical & Community)	DDS Students (Clinical, Community & Scientific)
Presentation & Judging	Friday February 28, 2025 at 8:00 – 11:30 AM (Centennial Complex 4th Floor)		
Awards Ceremony	Friday February 28, 2025 at 1:00 – 2:00 PM (Prince Hall Amphitheatre 1101/1102)		
1st Place	\$600.00	\$600.00/per category	\$600.00/per category
2nd Place	\$300.00	\$300.00/per category	\$300.00/per category
3rd Place	\$150.00	\$150.00/per category	\$150.00/per category
AADOCR/Dentsply Sirona Award	Award to honor the individual selected to represent LLUSD at the 2026 AADOCR/SCADA Program in San Diego, CA March 25-28, 2026.		
2025 OKU Award*	Award (\$300.00) presented by the OKU ChiChi Chapter to honor a predoctoral student on an EBD case report or literature review that will benefit the scientific community.		
2025 Student Research Mentor of the Year (DDS/DH)	The award recognizes faculty who have demonstrated a longstanding commitment to mentoring students that align with LLUSD's mission.		

**New Award*

POSTER COMPETITION JUDGES

General, DH, and DDS OKU	Advanced Education	DDS Clinical	DDS Community	DDS Scientific
First Round Judges				
Ms. Britney Pos	Dr. Anupama Grandhi	Dr. Rami Jekki	Dr. Erin Hicks	Dr. Leroy Leggitt
Dr. Susan Roche	Dr. Montry Suprono	Dr. Zina Johnston	Dr. Euni Cho	Dr. Yoon Kim
Dr. Balsam Jekki	Dr. Alireza Hayatshahi	Dr. Judy Kang	Dr. Raghad Sulaiman	Dr. Jenny Munoz
Dr. Priscilla Choi	Dr. Houda Tebcherany	Dr. Manoochehr Parsi	Dr. Ryan Becker	Dr. Jaimee Lozada
Second Round Judges				
Dr. Soh Yeun Eileen Kim	Dr. Gina Roque Torres	Dr. Clyde Roggenkamp	Dr. Reema Younan	Dr. Jessica Kim
Dr. Scott Lee	Dr. Shivani Karre	Ms. Esther Forde	Dr. Gary Kerstetter	Dr. Elvin Tolentino
Dr. Sofia Rodriguez Fitzpatrick	Dr. Kelly Bhumpattarachai	Dr. Kamyar Forghanparast	Ms. Charlene Jackson- Collins	Ms. Loredana Trica
Dr. Richard Gray	Dr. Rex Liao	Dr. Kiddee Poomprakobsri		
Reserve Judges: Dr. Steve Powell, Dr. Ron Sorrels, Dr. Ed Albrecht				
(N=41)				

(N=41)

POSTER EVENT D2 STUDENT VOLUNTEERS

Registration	Greeters & Crowd Control	Judge Form Organizers	Poster & Photo Booth	Set-up & Clean-Up
Eden Kim-Mularczyk	Joseph Lim	Giana Muchiutti	Kristen Khalaf	Eden and Team
Sonya Lee	Tyler Wright	Hannah Reimche-Vu	Nigel Maxwell	
Noah Scheult	Luciano Manotas Isasi	Madison Hamilton	Maki Tsuchiya	
Jonathan Boules	Brittany Le	Lilly Cheneweth		
Aaron Keniston	Rabera Onyango	Brooke Crosby		

(N=18)

GENERAL & DH & DDS OKU SECTION

Poster 25001 GENERAL

The Student Research Program at Loma Linda University School of Dentistry

*So Ran Kwon**, *Udochukwu Oyoyo*, *Mark Estey*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25002 GENERAL

A Collaborative Poster: Share your Thoughts on Research

*Carmen Fernandez** & *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25003 GENERAL

Clinical Outcomes of Dental Implants in Oligodontia Patients: A Retrospective Study

*S. Kerner*¹*, *P. Monneyron*², *A. Svestonof*², *R. Felizardo*², *M.C. Carra*³, *B. PJ Fournier*²

¹Department of Periodontics, Loma Linda University School of Dentistry, Loma Linda, CA, ²Paris Cite University, Paris, France,

³University of Ferrara, Ferrara, Italy

Poster 25004 DH CLIN

Effectiveness of Nutritional Counseling in Reducing the Amount and Frequency of Sugar Intake

*Aylene Rios**, *Ashley Perdomo**, *Caroline Grainger**, *Cassidy Negrete**, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25005 DH CLIN

Scrub Color Affects Perceived Professionalism of Dental Hygienists

*Connor Hendry**, *Vania Aranda**, *Nouf Maayta**, *Lourd Nafea**, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25006 DH COM

Assessment of Current Dental Hygiene Career Landscape

*Grace Chan**, *Abigail Chin**, *Haley Kang**, *Maya Miranda**, *Udochukwu Oyoyo*, *Danielle Ellington*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25007 DH COM

Under Pressure: Identifying Stressors and Health Promoting Lifestyle in Dental Hygiene Students

*Heather Heacock**, *Elsie Pak**, *Heidi Arnott**, *Julien Park**, *Larysa Baydala*, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25008 DDS OKU

Clinical Case of Anterior Esthetics

*Blake Unsell**, *Hung-Chi Liao*, *John B. Won*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25009 DDS OKU

Minimally Invasive Management of Anterior Spacing in Patient with Cleft Lip and Palate History

*Jingwei Cai**, *Sasiya Bhumpattarachai*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25010 DDS OKU

Management of Anterior Fractured Veneer Case

*Nadine Tawfik**, *Hung-Chi Liao*, *John Won*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25011 DDS OKU

Optimizing Anterior Esthetic Outcome by Utilizing Angulated Screw Channel

*James Akkidas**, *Hung-Chi Liao*, *Sasiya Bhumpattarachai*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24012 DDS OKU

Pre-Treatment Dental Considerations for Patients with Sick Cell Anemia

*Radhika Narra**, *Gabrielle R. Dennis*, *Dwight D. Rice*, *Anupama Grandhi*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25013 DDS OKU

Long Term Dental Consideration in Patients Receiving Chemotherapy and Radiation Therapy During Childhood

*Humaira Samreen**, *Sihwan Sung*, *Gabrielle R. Dennis*, *Dwight Rice*, *Anupama Grandhi*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25014 DDS OKU

Esthetic Smile Rehabilitation: Diagnosis and Treatment Planning, Crown Lengthening and Reverse Smile

*Martina Basta**, *Hung-Chi Liao*, *Steven Powell*, *John Won*

Loma Linda University School of Dentistry, Loma Linda, CA

ADVANCED EDUCATION SECTION

Poster 25015 ADV EDUC

Evaluation of Placement of Apical Plug Using MTA Utilizing Auger and Ultrasonic Condensation Techniques

*Shawn Liu** & *Sean Choi*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25016 ADV EDUC

Retrieval of fractured implant screw: A dental technique

*Sara Alzamel**, *Stephen F. Rosenstiel*, *Mathew T. Kattadiyil*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25017 ADV EDUC

Orthodontic Extrusion: A Smarter Path to Tooth Preservation

*Charlie Kim** & *Max Feinberg*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25018 ADV EDUC

***Streptococcus Mutans* Inhibition by *Lactobacillus Rhamnosus* Probiotic-Supplemented Infant Formula**

*Berenice Cheng**, *Zhe Zhong*, *Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25019 ADV EDUC

Management of Non-Restorable Teeth in Patients with a History of Head and Neck Radiation

*Jeff Buizastrow** & *Viviane Nguyen*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25020 ADV EDUC

Oral Manifestations of Cherubism: A Case Report

*Ellen Chun** & *Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25021 ADV EDUC

Post-Trauma Prosthetic Rehabilitation Using Autogenous Teeth: A Case Report

*Farin Ezzati**, *Jung-Wei Chen*, *Samah Omar*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25022 ADV EDUC

Management of Root Fracture in Immature Permanent Dentition

*Esther Lee**, *Samah Omar*, *Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25023 ADV EDUC

Interdisciplinary Approach to Optimize Esthetics and Function in Management of Anomalies of Lateral Incisors

Saud Alajmi¹, Hibah Aljutayli², Mohammed Alshaharani²

¹Loma Linda University School of Dentistry, Loma Linda, CA, ²Prince Sultan Military Medical City, Saudi Arabia.

Poster 25024 ADV EDUC

Selecting the Optimal Restorative Approach for Enamel Hypoplasia in Patients with DiGeorge Syndrome

Valerie Penarubia & Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25025 ADV EDUC

Dental Considerations in a Child with Marfan Syndrome: A Case Report

Pooja Katira, Jung-Wei Chen, Samah Omar*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25026 ADV EDUC

Palliative Management of Oral Pemphigus Vulgaris with Herbal Oral Rinse: 3-Years Follow-up

Nabat Davrani, Nima Sarmast, Thaer Alqadoumi, Yoon Jeong Kim*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25027 ADV EDUC

New Bone Formation After Sinus Augmentation Using DFDBA Fibers Mixed with Xenograft/FDBA

Ashley Choi & Yoon Jeong Kim*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25028 ADV EDUC

Withdrawn

DDS CLINICAL SECTION

Poster 25029 DDS CLIN

Impact of Scan Body Bevel Orientation on Digital Impression Accuracy in Full-Arch Implant Scanning

Austin Kim, Kenton Bosch*, Sasiya Bhumpattarachai, Sune Limmeechokchai, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25030 DDS CLIN

Application of Artificial Intelligence to Determine Working Length for Root Canal Treatment

Cameron Carlson, Jonathan Oatis*, Samuel Altman*, Sofia Rodriguez Fitzpatrick, Richard J. Gray*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25031 DDS CLIN

Pilot study: A Comparison of AI-Generated and CAD/CAM IPS e.max ZirCAD Crowns

Daniel Krall, Sunghyo Oh*, Ariella Kerendian*, Shivani Karre, Amelia David, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25032 DDS CLIN

Applications of Artificial Intelligence in RPD Design: A Revolutionary Learning Tool

Elianna Srikureja, Rachel Chung*, Marina Luna, Sofia Rodriguez-Fitzpatrick, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25033 DDS CLIN

Impact of Implant Depth on Digital Impression Accuracy in Implant-Supported Fixed Partial Dentures

Claudia Aguero, Guiliane Djoumekoum*, Hanee Patel*, Maria Parra Colmener*,*

Sasiya Bhumpattarachai, Marina Luna, Udochukwu Oyoyo

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25034 DDS CLIN

Postprocedural Analgesic Use and Adherence to 2024 ADA Guidelines in Dental Patients

Jeff Price, Caleb Smeraldi*, Stephen Patterson*, James Semple*, Alireza Hayatshahi, Soh Yeun Eileen Kim, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25035 DDS CLIN

Influence of graduation requirements on periodontal maintenance productivity

Manal Usmani, Navuen Alamawi*, Kausar Khan*, Houda Tebcherany, Udochukwu Oyoyo, Ahmed Khocht*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25036 DDS CLIN

Retrospective Analysis of the Prevalence of Alveolar Osteitis Following Surgical Extraction of Mandibular Third Molars

Patrick Angelo Lim, Alexey Gurin*, Mahmoud Mahdavian*, Adeyemi Falegan*, Carlos Moretta, So Ran Kwon, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

DDS COMMUNITY SECTION

Poster 25037 DDS COM

Building Faculty Pipeline Programs: The Impact of Peer Tutoring

Andrew Nguyen, Anthony Naranjo*, Valerie Cu*, Raphael Garcia*, Udochukwu Oyoyo, John Won, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25038 DDS COM

Caries Risk Assessment and Management by Dental Institution using BigMouth Data

Clara Kim, Julia Shin*, Sujin Sin*, Elizabeth Suh*, Seth Wiafe, Udochukwu Oyoyo, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25039 DDS COM

Assessment of Severity of Stress of Dental Students and Recipes for Stress Management

Dima Ibnian, Axel Barba*, Sara Mojtahedi*, Debra Friesen, Udochukwu Oyoyo, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25040 DDS COM

A Literature Review of Clear Aligner Allergies in Orthodontic Patients

Jessenia Maciel, Alexandria Stewart*, Mauricio Gonzalez Balut*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25041 DDS COM

Awareness of Registered Dental Assistant role limitations among LLU dental students, residents, and faculty

Jille Ann Regine Gonzales-Torreliza, Navjeet Singh Sandhu*, Jerny Gamboa Fernandez*, Priya Philip*, Anureet Kaur*, Priscilla Choi, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25042 DDS COM

Class III Malocclusion Prevalence in East Asian Americans vs. Native Population

Jonathan Ao, Yarezmin A.Che*, Marmar Moghareh Abed*, Rozhin Naghshizadian*, Mauricio Gonzalez-Balut*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25043 DDS COM

Applications of AI in Pediatric Dentistry: A Systematic Review and Meta-Analysis

Rata Rokhshad, Sadaf Taheri, Salar Motamedi Dehkordi, Jung-Wei Chen*
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25044 DDS COM

Comparative Efficacy of CariesFree Adjunctive Therapy in Scaling and Root Planing Procedures

Wonseok Kim, Sumin Rhee*, Eunyoung Kim*, Yoosang Ahn*, Yun Seok Lee, Nima Sarmast, Balsam Jekki, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

DDS SCIENTIFIC SECTION

Poster 25045 DDS SCIEN

Efficacy of Periodontal Instrument Sharpening Instructions Using Free-hand and Gleason Guide for New Dental Students

Alfred Mustafa, Scott Lee, Clyde Roggenkamp, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25046 DDS SCIEN

Efficiency and Precision of Dynamic Navigation System in Endodontic Access for Locating Calcified Canals

Carolyn Park, Calista Lai*, Chelsea Molato*, Brandon Park*, Sunee Limmeechokchai, Joseph Kan, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25047 DDS SCIEN

Prevalence of Migraine Headaches in Obstructive Sleep Apnea Patients in Faculty Practice

Chandler Phelps, Susan Roche, Adam Shafik, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25048 DDS SCIEN

The Impact of Psychosocial Stressors on Cancer Outcomes in Oral Squamous Cell Carcinoma

Lisa Tu Hoang, Phuong Minh Dong, Michelle Arambula, Gary Yu, Chi Viet*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25049 DDS SCIEN

Prevalence of Fused Molar Roots in a Loma Linda Population Utilizing Cone Beam Computed Tomography

Min Soo Kim, Benjamin Lau*, Jeremy Oh*, Jambi Suhair, Sunee Limmeechokchai, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25050 DDS SCIEN

Optimizing Aerosol Mitigation in Confined Spaces: In vitro Studies on Cost-effective Strategies

Salar Motamedi, Mohit Jagwani*, Ryan Sinclair, William Porter, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25051 DDS SCIEN

Effect of Spaceflight on Mouse Incisor Tooth Morphology by MicroCT Analysis

Mina Hanna, Jessica Ayoub*, Nadine Tawfik*, Gina Roque-Torres, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 25052 DDS SCIEN

Spaceflight Effects on Bone Microarchitecture by MicroCT Analysis

Jean Paul Klein, Gina Roque-Torres, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

**Poster Presenters*

POSTER ABSTRACTS

Poster 25001 GENERAL

The Student Research Program at Loma Linda University School of Dentistry

So Ran Kwon, Udochukwu Oyoyo, Mark Estey*

Loma Linda University School of Dentistry, Loma Linda, CA

Scientific research is a vital driving force for health professions education and practice that pave the way for evidence-based decision making. LLUSD has always been a frontier in creating an environment to foster student research opportunities thus aiming to meet our mission “To make man whole” by integrative teaching, service, and research. Dental and dental hygiene students who are interested in conducting research are encouraged to select a topic in the area of clinical, basic sciences, or community research.

As part of this program, we aim to,

- 1) Instill critical thinking through research experience;
- 2) Foster collaboration between students and faculty mentors that encourages students to become involved in the design, conduct, and reporting of research;
- 3) Encourage students to consider academic dentistry and research as future career options.

Keywords: Student Research Program

Poster 25002 GENERAL

A Collaborative Poster: Share your Thoughts on Research

Carmen Fernandez & So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: The goal of this project is to create a space where participants can share their thoughts on research.

Materials & Methods: Participants can write their comments in the designated space using the provided pen. There are three key questions: For students: What was the most significant insight gained from your research experience? For research mentors: What was the most significant insight gained from your research mentoring experience? For attendees: What was the most significant insight gained from attending the student research poster session?

Results: The collected responses will be compiled into descriptive data and presented during the 2026 Homecoming session, alongside historical data on student research at LLUSD.

Conclusions: This collaborative poster project fosters an interactive experience, allowing participants to share their perspectives on research.

Keywords: Collaboration, research, insights, participation

Poster 25003 GENERAL

Clinical Outcomes of Dental Implants in Oligodontia Patients: A Retrospective Study

S. Kerner^{1}, P. Monneyron², A. Svestonof², R. Felizardo², M.C. Carra³, B. PJ Fournier²*

¹Department of Periodontics, Loma Linda University School of Dentistry, Loma Linda, CA, ²Paris Cite University, Paris, France,

³University of Ferrara, Ferrara, Italy

Objectives: Oligodontia is a rare condition characterized by the absence of six or more teeth.

Few data are available on the outcomes of implant therapy for this specific population. The aim of this study was to assess implant survival and success rates and Oral Health-Related Quality of Life (OHRQoL) outcome.

Material & Methods: Clinical and radiographic records of oligodontia patients treated between 02/2013 and 12/2023 (Oral Rare Disease Center Paris, France) were reviewed. Implant survival and success rates were analyzed using Kaplan-Meier curves. The OHIP-14 questionnaire was used to assess OHRQoL.

Results: The 5-year cumulative survival rate of 267 dental implants (58 patients) was 96.67%. Based on 160 implants (27 patients) the 5-year cumulative success rate was 83.75%. Peri-implant mucositis and peri-implantitis rates were 37.67% and 5.47%, respectively. Patients demonstrated OHIP-14 scores of 5 ± 4.15 .

Conclusions: Implant therapy for oligodontia patients provides a reliable solution and good OHRQoL.

Keywords: Dental implants, Oligodontia, success rate, survival rate, OHRQoL

Poster 25004 DH CLIN

Effectiveness of Nutritional Counseling in Reducing the Amount and Frequency of Sugar Intake

Aylene Rios, Ashley Perdomo*, Caroline Grainger*, Cassidy Negrete*, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To assess the efficacy of nutrition counseling on the effect of snacking behavior.

Materials & Methods: This randomized, single-center, two-group clinical study assessed the impact of Stephan's Curve-based nutritional counseling on snacking frequency and added sugar consumption over two weeks. One hundred adult participants were randomized into an intervention group receiving personalized nutritional counseling using the Stephan's Curve and a sugar intake tracking app, or a control group receiving no counseling. Participants logged their snacking frequency and sugar consumption daily. Statistical analysis compared pre- and post-intervention data using t-tests and Random Forest modeling.

Results: The intervention group significantly reduced snacking frequency by 26.1% ($p=0.006$) and sugar intake by 50.8% ($p=0.001$), while the control group showed non-significant reductions of 9.5% ($p=0.09$) and 5.2% ($p=0.67$), respectively.

Conclusion: Stephan's Curve-based nutritional counseling effectively reduced sugar intake and, to a lesser extent, snacking frequency. These findings support incorporating dietary education into routine dental care.

Keywords: Diet, dental caries, nutrition counseling, Stephan's Curve

Poster 25005 DH CLIN

Scrub Color Affects Perceived Professionalism of Dental Hygienists

Connor Hendry, Vania Aranda*, Nouf Maayta*, Lourd Nafea*, Udochukwu Oyoyo, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To assess the impact of dental hygienists' scrub colors on patient perceptions.

Materials & Methods: The survey included 16 questions, with two assessing demographic information and 14 evaluating perceptions on scrubs color. Participants viewed images of male and female dental hygienists wearing scrubs in five colors: pink, burgundy, teal, navy, and black. They were asked to select the most and least knowledgeable, skilled, and caring based on scrub color and indicate their preferred provider.

Results: Findings revealed that scrub color significantly influenced patient perceptions. Navy was the most preferred for both male (39.7%) and female (38.1%) dental hygienists, followed by teal and black. Navy was associated with knowledge and skill, while pink was linked to caring traits but perceived as less competent. Black scrubs were rated least caring.

Conclusion: The preference for navy scrubs suggests that color plays a crucial role in establishing trust and perceived competence in dental settings.

Keywords: Dental hygienist, Scrubs color, Knowledge, Skill, Caring

Poster 25006 DH COM

Assessment of Current Dental Hygiene Career Landscape

Grace Chan, Abigail Chin*, Haley Kang*, Maya Miranda*, Udochukwu Oyoyo, Danielle Ellington, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To evaluate the current dental hygiene career landscape by assessing career longevity and alternative career paths.

Materials & Methods: Anonymous Qualtrics surveys were distributed via email or via QR code to three different cohorts: 1) Current Dental Hygiene Students, 2) Current Practicing RDHs, and 3) Retired/Alternative Practice RDHs. Survey data were collected and analyzed employing Kruskal-Wallis and Chi-square tests.

Results: From a sample size of 206 participants, the average expected and observed years of clinical practice were 21 years and 19 years, respectively. Both statistical analyses resulted in $p > 0.05$, indicating no significant relationships. The most common alternative career interests were education, public health, and research. Main reasons for leaving the field included physical health concerns and financial reasons.

Conclusions: There is no correlation between expected years of practice and age of dental hygiene students. There is no correlation between current alternative profession and career satisfaction.

Keywords: Dental Hygiene, Career Longevity, Career Landscape

Poster 25007 DH COM

Under Pressure: Identifying Stressors and Health Promoting Lifestyle in Dental Hygiene Students

Heather Heacock, Elsie Pak*, Heidi Arnott*, Julien Park*, Larysa Baydala, Udochukwu Oyoyo, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: This study aimed to assess the relationship between stress levels and health-promoting behaviors among students at LLUSD.

Materials & Methods: A survey comprising demographics, the Dental Environment Stress (DES) questionnaire, and the Health-Promoting Lifestyle Profile II (HPLP II) was distributed to 39 participants.

Results: Results showed that while students reported moderate stress, primarily due to exams, coursework, and financial obligations, there was no statistically significant correlation between DES and HPLP II scores ($p=0.736$). However, exploratory analysis suggested potential associations between age, health behaviors, and ethnicity.

Conclusion: These findings highlight the need for targeted interventions in three key areas to enhance student well-being. Future research with a larger sample size is recommended to further explore stress management strategies and their role in supporting academic and clinical success.

Keywords: Dental Environment Stress, Stress, Health-Promoting Lifestyle Profile

Poster 25008 DDS OKU

Clinical Case of Anterior Esthetics

Blake Unsell, Hung-Chi Liao, John B. Won*

Loma Linda University School of Dentistry, Loma Linda, CA

Literature Review: Esthetic dentistry plays a vital role in enhancing not only the appearance of an individual but also their confidence. A person's smile and the look of one's teeth significantly influences their self-image. With that in mind, approaching esthetic dentistry with the upmost care is very important.

Case: A 58-year-old woman presents to the dental school with the chief complaints of broken crown on #10. After removal of the crown, it is determined that the tooth is restorable. The crown prep is refined, and shade selection takes place. Upon review of the dental student and the patient, it is determined that the shade C2 (Vita shade guide) is the closest match. The new lithium disilicate crown was cemented onto the crown prep using Rely-X-Luting cement. **Conclusions:** Achieving good esthetics in the anterior region requires careful planning and communication with the patient.

Keywords: Anterior crown, esthetics, lithium disilicate.

Poster 25009 DDS OKU

Minimally Invasive Management of Anterior Spacing in Patient with Cleft Lip and Palate History

Jingwei Cai, Sasiya Bhumpattarachai, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Literature review: Interdisciplinary approach of the correction of cleft lip and palate commonly starts with the surgical closure of the cleft and typically follows orthodontic treatment. In non-carious teeth with malformation, minimal tooth preparation techniques are suggested as the most appropriate for patient who needs aesthetic tooth modification.

Case: A 18 year old patient presented with anterior spacing on the upper arch. The patient had a dental history of 4 rounds of surgery and 7 years of orthodontic treatment. Upon completion of surgeries and orthodontic treatment, patient presented at LLUSD main clinic for management of anterior spacing. Patient had peg lateral on #7, lingual talon cusp on #8, and missing tooth #10. Minimal invasive treatment was provided to create a natural smile with six anterior direct resin composite veneers. The pull through and polychromatic layering technique were used to create contacts and restorations that achieving a more natural aesthetic appearance.

Keywords: Cleft lip and Palate, Anterior Spacing, Minimal invasive, Direct resin composite veneers, Pull through technique, Polychromatic layering technique.

Poster 25010 DDS OKU

Management of Anterior Fractured Veneer Case

Nadine Tawfik, Hung-Chi Liao, John Won*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: For this case report, patient is a female, 55 years old Caucasian. Patient health history includes smoking history, controlled type II diabetes, bipolar disorder and depression. Patient periodontal history is Stage IV periodontitis with grade C. Patient had treatment of Scaling and Root Planning for one to three teeth per quadrant. Then patient followed with periodontal maintenance program. Patient's chief complaint was the size of her small anterior teeth with diastema. Treatment that was started for patient lithium disilicate crowns on teeth #5, #6, #11 and #12. In addition, porcelain veneers on #7, #8, #9, and #10. After delivery of initial veneers, patient's chief complaint was Veneer fractures. Veneers were removed and will be replaced with full crowns instead. Teeth are currently covered with lab made Polymethyl methacrylate acrylic temporary crowns to observe shape and size outcome and function.

Keywords: Veneer fracture anterior restoration

Poster 25011 DDS OKU

Optimizing Anterior Esthetic Outcome by Utilizing Angulated Screw Channel

James Akkidas, Hung-Chi Liao, Sasiya Bhumpattarachai*
Loma Linda University School of Dentistry, Loma Linda, CA

Literature Review: Angulated Screw Channels make it possible to shift the screw access hole to the lingual side of anterior teeth or the occlusal surface of posterior teeth, while also managing material thickness effectively.

Case: A 73-year-old healthy female required a fixed prosthesis to replace missing teeth #23–26. Two NobelReplace Conical Connection TiUltra NP 3.5 x 10 mm implants were placed. A screw-retained prosthesis with Angulated Screw Channel (ASC) was selected to enhance both esthetics and function. By utilizing ASC abutments and Omnigrip™ technology, we successfully redirected screw access holes to lingual position, with a 20-degree correction improving esthetics and eliminated the risks of cement-induced peri-implantitis with a screw-retained approach. This implant supported screw retained prosthesis using ASC system can be an effective restorative option in complex anterior restorations, providing a predictable, retrievable, and esthetically superior solution. Further studies are required on this approach.

Keywords: Angulated Screw Channel, Implant crown, anterior fixed dental prosthesis

Poster 24012 DDS OKU

Pre-Treatment Dental Considerations for Patients with Sickle Cell Anemia

Radhika Narra, Gabrielle R. Dennis, Dwight D. Rice, Anupama Grandhi*
Loma Linda University School of Dentistry, Loma Linda, CA

Case: Sickle cell anemia (SCA) is a severe form of sickle cell disease (SCD), an inherited blood disorder caused by a mutation in the *HBB* gene, leading to abnormal hemoglobin (HbS). SCA results in sickle-shaped red blood cells, which cause vascular occlusion, organ damage, and an increased risk of infection. Patients with SCA often present with dental abnormalities, including pulp calcifications, altered tooth morphology, and reduced trabecular bone density. This case report describes a 40-year-old female with SCA who required dental clearance before undergoing gene therapy. Clinical and radiographic examination revealed extensive external root resorption, hypo mineralization, hypercementosis, and multiple non-restorable teeth. A comprehensive treatment plan, including extractions, periodontal therapy, and direct restorations, was implemented to optimize oral health before gene therapy. In conclusion, it is important to understand the effects of SCA on oral health and the benefit of providing essential dental care to patients before treatment.

Keywords: Sickle cell anemia, dental, gene therapy, oral, root resorption

Poster 25013 DDS OKU

Long Term Dental Consideration in Patients Receiving Chemotherapy and Radiation Therapy During Childhood

Humaira Samreen, Sihwan Sung, Gabrielle R. Dennis, Dwight Rice, Anupama Grandhi*
Loma Linda University School of Dentistry, Loma Linda, CA

Literature Review: The long-term dental effects of childhood cancer treatments, such as chemotherapy and radiation, have been extensively documented. Although these therapies are lifesaving, they can lead to significant oral health complications that persist into adulthood. Holttä et al. (2002) and Effinger et al. (2014) emphasize the severe dental anomalies resulting from such treatments.

Case: This case report presents a 23-year-old male who was treated for neuroblastoma at age four with chemotherapy and radiation. He presented with enamel hypoplasia, microdontia, and root stunting, resulting in functional impairments.

Conclusion: This report highlights the importance of recognizing the long-term effects of cancer treatments, enabling dental professionals to provide specialized care and ultimately enhance patients' quality of life. Comprehensive oral care is essential for effectively managing these complications.

Keywords: Childhood cancer, Chemotherapy, Radiation therapy, Neuroblastoma, Dental anomalies.

Poster 25014 DDS OKU

Esthetic Smile Rehabilitation: Diagnosis and Treatment Planning, Crown Lengthening and Reverse Smile

Martina Basta, Hung-Chi Liao, Steven Powell, John Won*
Loma Linda University School of Dentistry, Loma Linda, CA

Case: To achieve comprehensive esthetic rehabilitation by correcting gingival contour and reverse smile line. Crown lengthening was performed for optimal gingival contour. Lithium disilicate crowns and resin-based restorations were used, with digital smile design predicting outcomes. Gingival contour, reverse smile-line, and occlusion were evaluated at T1 (pre-treatment), T2 (post-

provisionalization), and T3 (post-restoration). A multidisciplinary periodontal and restorative approach successfully corrected the reverse smile line, ensuring esthetic and functional success. Crown lengthening combined with restorative techniques and enameloplasty effectively enhances function, esthetics, and occlusal harmony, ensuring long-term stability.

Keywords: Esthetic rehabilitation, Crown lengthening, Reverse smile line.

Poster 25015 ADV EDUC

Evaluation of Placement of Apical Plug Using MTA Utilizing Auger and Ultrasonic Condensation Techniques

Shawn Liu & Sean Choi*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: Large apical openings often result from pulp necrosis in immature teeth, apical resorption, or over-enlargement of the apical foramen. Research has shown that when the apical size exceeds the equivalent of a size 60 K-file, the combination of gutta-percha and sealer becomes prone to significant leakage issues. Mineral trioxide aggregate (MTA) has emerged as the material of choice for its superior sealing ability and its capacity to create a reliable apical stop. However, achieving consistent placement of MTA at the apex has posed technical challenges, leading many clinicians to avoid its use due to unpredictability in application. This case series highlights a novel technique employing rotary files, endodontic pluggers, and ultrasonic instruments to predictably deliver MTA to the apex, ensuring a dense and effective fill.

Keywords: Apical Plug, Auger and Ultrasonic Condensation Techniques

Poster 25016 ADV EDUC

Retrieval of fractured implant screw: A dental technique

Sara Alzamel, Stephen F. Rosenstiel, Mathew T. Kattadiyil*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: Removing a fractured implant screw, though a relatively rare occurrence, presents a significant challenge for clinicians. Protecting the internal surface of the implant from damage during the retrieval of the fractured fragment is critical to avoid additional complications. A novel, cost-effective, and conservative technique for retrieving fractured implant screws using a small-diameter dental prophylactic brush is described.

Keywords: Fracture, implant screw, retrieval

Poster 25017 ADV EDUC

Orthodontic Extrusion: A Smarter Path to Tooth Preservation

Charlie Kim & Max Feinberg*

Loma Linda University School of Dentistry, Loma Linda, CA

Literature Review: Orthodontic extrusion offers a reliable solution for salvaging teeth in the aesthetic zone with complicated crown fractures, provided root length is adequate for bony support and post-and-core restoration. Compared to alternative treatments, this approach better preserves gingival architecture and periodontal health.

Case: To demonstrate the effective use of orthodontic extrusion in managing a complicated crown fracture. A 77-year-old male with a complicated crown fracture of tooth #10 at the gingival margin underwent orthodontic extrusion followed by restoration with a prefabricated post, core, and crown. This multidisciplinary approach achieved functional and aesthetic success. Orthodontic extrusion is an effective method for restoring teeth with poor prognoses, enabling periodontal preservation and favorable outcomes. This technique highlights the potential for retaining natural teeth in complex cases.

Keywords: Complicated crown fracture, orthodontic extrusion, rapid ortho extrusion

Poster 25018 ADV EDUC

***Streptococcus Mutans* Inhibition by *Lactobacillus Rhamnosus* Probiotic-Supplemented Infant Formula**

Berenice Cheng, Zhe Zhong, Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: Probiotics demonstrate suppression of cariogens including *Streptococcus mutans* (SM). This study compared SM growth in plain bovine formula versus a *Lactobacillus rhamnosus* Gorbach Goldin (LGG) probiotic-supplemented alternative.

Materials & Methods: Two bovine-based infant formulas, Similac (formula non-probiotic, FNP) and Enfamil (formula with probiotic, FWP), were compared against positive (laboratory-sourced probiotic, LSP) and negative controls (NC). Formulas and

controls were reconstituted, serially diluted (0.1x, 0.5x, 1x, and 2x), inoculated with SM (n=8) on selective agar and incubated at 37°C for 96 hours. SM colony-forming units (CFU) were enumerated.

Results: SM grew less in undiluted (1.0x) FWP than NC and FNP (\bar{n} =2.22, 3.41, 5.85×10^4 CFU/mL). FNP counts exceeded FWP (ANOVA $P < .001$) at concentrations $> 0.1x$. FWP concentration was negatively correlated to SM growth (Spearman's Rho $P < .001$, $\rho = -0.893$), whereas FNP showed strong positive trends ($P < .001$, $\rho = 0.805$).

Conclusion: Commercial probiotic-enriched infant formula effectively suppresses SM growth in vitro, supporting this accessible infant dietary intervention.

Keywords: probiotics, infant, *S. mutans*, caries, inhibition

Poster 25019 ADV EDUC

Management of Non-Restorable Teeth in Patients with a History of Head and Neck Radiation

Jeff Buizastrow & Viviane Nguyen*

Loma Linda University School of Dentistry, Loma Linda, CA

Literature Review: Osteoradionecrosis (ORN) is a severe complication of radiation therapy, impairing bone healing due to hypovascularity and hypoxia. Patients undergoing head and neck radiation face an increased risk of ORN, particularly after dental extractions. Endodontic therapy offers a conservative alternative, minimizing this risk. Studies (Lilly et al., Seto et al.) support the success of root canal therapy in irradiated patients.

Case: A 62-year-old male with a history of left parotid gland cancer, treated with 60 Gys of radiation, presented with non-restorable tooth #14 and apical periodontitis. Nonsurgical root canal therapy and coronectomy were performed to reduce ORN risk. At six months, clinical and radiograph examination confirmed treatment success. This case highlights the critical role of endodontists in preserving dentition in medically compromised patients through advanced restorative techniques and imaging.

Keywords: Osteoradionecrosis, Endodontic Therapy, Head and Neck Radiation, Coronectomy, Conservative Dentistry.

Poster 25020 ADV EDUC

Oral Manifestations of Cherubism: A Case Report

Ellen Chun & Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: Cherubism is a non-neoplastic hereditary bone disorder characterized by a bilateral painless swelling of the jaws. The condition becomes evident at a young age (2-5 years old), and, depending on its severity, can result in detrimental changes to facial features. Patients with cherubism experience clinically visible changes in facial structures that progress until puberty; at puberty, the changes stabilize and slowly regress. This case presentation describes a 7 year-old girl diagnosed with cherubism, highlighting her clinical and radiographic features involved with the disorder, as well as summarizing other dental manifestations. Understanding the clinical implications of cherubism is important to develop an individualized dental treatment plan that includes a multidisciplinary approach for a growing pediatric patient, with the ultimate goal to improve their quality of life.

Keywords: Cherubism, quality of life

Poster 25021 ADV EDUC

Post-Trauma Prosthetic Rehabilitation Using Autogenous Teeth: A Case Report

Farin Ezzati, Jung-Wei Chen, Samah Omar*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: Dental avulsion is a severe traumatic injury requiring prompt management for optimal outcomes. This case report describes the prosthetic rehabilitation of an 8-year-old male who experienced avulsion of the maxillary central incisors (#8, #9) and intrusion of the lateral incisors (#7, #10) following a bicycle accident. The avulsed teeth were stored in water, and delayed treatment rendered replantation unfeasible due to periodontal ligament necrosis. Immediate management involved an Essix retainer with acrylic teeth for temporary aesthetics and function. A Groper's appliance incorporating the patient's avulsed teeth was later fabricated as a definitive prosthesis, preserving space and delaying implant placement until skeletal maturity. Long-term follow-up included alveolar ridge monitoring and potential orthodontic intervention. This case highlights the importance of early replantation within 30 minutes, proper storage media like milk or Hank's solution, and prosthetic solutions for pediatric patients when replantation is not viable.

Keywords: Dental avulsion, pediatric prosthesis, Groper's appliance, traumatic injury, space maintenance

Poster 25022 ADV EDUC

Management of Root Fracture in Immature Permanent Dentition

Esther Lee, Samah Omar, Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: Traumatic dental injuries in permanent teeth occur frequently in children and young adults. Root fractures are defined as those involving the dentin, cementum and pulp. They are relatively uncommon, ranging from 1.2-7.0% in permanent dentition. The mechanism of action consists of a frontal horizontal impact that displaces the tooth palatally, resulting in root fracture and possible displacement of the coronal fragment. This case report highlights the clinical management of root fracture in an immature maxillary central incisor on an eight-year-old female. Evaluating the patient comprehensively with radiographic findings, clinical presentation and pre-/post-injury factors influencing healing will guide the dental provider in delivering the appropriate management of the injury. This leads to improved communication and education with patients and parents regarding the prognosis and possible sequelae of the tooth. Ultimately, it is encouraged to monitor for healing of root fractures with long-term follow ups prior to providing definitive treatment.

Keywords: Root fracture, Horizontal root fracture, Immature permanent dentition, Trauma prevention

Poster 25023 ADV EDUC

Interdisciplinary Approach to Optimize Esthetics and Function in Management of Anomalies of Lateral Incisors

*Saud Alajmi*¹, Hibah Aljutayli², Mohammed Alshaharani²*

¹Loma Linda University School of Dentistry, Loma Linda, CA, ²Prince Sultan Military Medical City, Saudi Arabia.

Nowadays, patients have become increasingly concerned about esthetics, and hypodontia or microdontia will typically create anterior teeth spacing which mostly affect the smile of the patient. An Interdisciplinary approach for the treatment of different developmental anomalies of permanent lateral incisors has to be considered and executed.

Case #1 of A 16-year-old female healthy patient presented with generalized spacing in the upper arch associated with congenitally missing lateral incisors bilaterally. The interdisciplinary treatment combining orthodontic alignment, narrow diameter implant (NDI) placement and implant supported crowns was provided.

Case #2 of A 24-year-old female healthy patient, clinical examination revealed a disharmonious smile caused by abnormal tooth shape and size of the upper anterior teeth including bilateral peg-shaped lateral incisors that were restored with composite restoration to close the anterior spaces after orthodontic alignment. A treatment plan to restore esthetic through laminate veneers was selected.

Keywords: Congenitally missing lateral incisors, Peg shaped lateral incisors

Poster 25024 ADV EDUC

Selecting the Optimal Restorative Approach for Enamel Hypoplasia in Patients with DiGeorge Syndrome

Valerie Penarubia & Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: DiGeorge syndrome (22q11.2 deletion syndrome) is a genetic disorder that affects multiple organ systems, including oral health. Patients often present with enamel hypoplasia, hypocalcification, and high caries risk due to hypoparathyroidism-induced hypocalcemia and craniofacial anomalies such as cleft palate. This case report details the dental management of a 14-year-old patient with complete DiGeorge syndrome, emphasizing prevention and restorative care. While silver diamine fluoride (SDF) was initially applied to arrest caries, stainless steel crowns (SSCs) were ultimately required to provide full-coverage protection for structurally compromised molars. SSCs serve as an interim solution, with more definitive restorations considered upon skeletal maturity. Due to the patient's complex medical needs, treatment was completed under general anesthesia. This case highlights the challenges of managing enamel hypoplasia in medically complex patients and underscores the importance of individualized, preventive, and restorative strategies.

Keywords: DiGeorge Syndrome, Enamel Hypoplasia

Poster 25025 ADV EDUC

Dental Considerations in a Child with Marfan Syndrome: A Case Report

Pooja Katira, Jung-Wei Chen, Samah Omar*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: Marfan syndrome is an autosomal-dominant connective tissue disorder characterized by skeletal, cardiovascular, and ocular manifestations. Diagnosis is based on genetic history and clinical criteria, including both major and minor systemic findings. This case presentation describes a 12-year-old girl diagnosed with Marfan syndrome, highlighting her clinical features and the challenges

associated with her oral health management. Given the connective tissue involvement, affected individuals may present with high-arched palate, crowding, temporomandibular joint disorders, and an increased risk of infective endocarditis. Understanding the etiopathogenesis and clinical implications of Marfan syndrome is crucial for developing an individualized dental treatment plan that ensures both functional and esthetic rehabilitation while minimizing potential complications. This report underscores the importance of a multidisciplinary approach in managing patients with Marfan syndrome, ultimately aiming to improve their overall quality of life.

Keywords: Marfan Syndrome

Poster 25026 ADV EDUC

Palliative Management of Oral Pemphigus Vulgaris with Herbal Oral Rinse: 3-Years Follow-up

Nabat Davrani, Nima Sarmast, Thaer Alqadoumi, Yoon Jeong Kim*

Loma Linda University School of Dentistry, Loma Linda, CA

Case: The aim of this case report is to demonstrate palliative management of patient diagnosed with pemphigus vulgaris using StellaLife mouth rinse prior and in addition to non-surgical periodontal therapy. 47-year-old female presented with painful extensive erosive ulcerative lesions with plaque build-up affecting proper implementation of oral hygiene. The patient was placed on daily use of StellaLife recovery Kit for 1 month before any non-surgical periodontal therapy, then SRP was done with strict three months maintenance recall and daily use of StellaLife mouth rinse. A full-mouth exam including periodontal charting was collected at baseline and at every recall appointment as well as patient reported outcome. Improvement was observed in several periodontal parameters as well as patient reported reduced discomfort with no more burning sensation, easier patient implementation of homecare. This case report demonstrates a successful management route for periodontally compromised patients with pemphigus vulgaris oral lesions where steroid medication is not an option.

Keywords: Pemphigus Vulgaris, StellaLife, Palliative Treatment

Poster 25027 ADV EDUC

New Bone Formation After Sinus Augmentation Using DFDBA Fibers Mixed with Xenograft/FDBA

Ashley Choi & Yoon Jeong Kim*

Loma Linda University School of Dentistry, Loma Linda, CA

Literature Review: In sinus augmentation, xenografts are widely studied due to osteoconduction. Similarly, FDBA is osteoconductive acting as scaffolds for capillary proliferation and osteoprogenitor cell migration. However, both xenograft and FDBA lack osteoinduction. Ideal bone grafts for sinus augmentation should provide osteoconduction and osteoinduction. To date, there is limited data regarding new bone formation utilizing osteoinductive DFDBA fibers combined with xenograft or FDBA.

Case: Two patient cases were treated using DFDBA fibers, combined with xenograft or FDBA. A mixture of 50% DFDBA fibers with 50% xenograft or FDBA was used to graft the sinus cavity. Post operatively, CBCT was taken, and the analysis was done. After 4/6 months, there was a linear vertical bone gain of 12.71 mm in case 1 and 14.82 mm in case 2 and bone density indicates new bone formation. DFDBA fibers may achieve significant amount of new bone formation when mixed with mineralized bone graft following lateral sinus augmentation.

Keywords: osteoinduction, FDBA, DFDBA, xenograft

Poster 25028 ADV EDUC

Withdrawn

Poster 25029 DDS CLIN

Impact of Scan Body Bevel Orientation on Digital Impression Accuracy in Full-Arch Implant Scanning

Austin Kim, Kenton Bosch*, Sasiya Bhumpattarachai, Sunee Limmeechokchai, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: This study examines influence of scan body bevel orientation on the accuracy of digital impressions in All-On-Four implant prostheses.

Materials & Methods: A master cast featuring four implants was scanned using Trios intraoral scanner. Various scan body orientations: buccal, lingual, mesial, distal, and random were employed. The data were analyzed with Geomagic software.

Results: The findings revealed buccal and lingual orientations exhibited greater XYZ deviations, indicating increased inaccuracy compared to the control. Although ANOVA indicated no significant differences in linear measurements across orientations, significant trueness discrepancies were noted between Buccal-Distal ($p = .004$), Buccal-Mesial ($p = .001$), Buccal-Random ($p < .001$), and Lingual-Random ($p = .036$). No significant differences in inter-scan body linear measurements were observed ($p > .05$).

Conclusion: The orientation of scan body bevels significantly affects digital impression accuracy, with buccal and lingual orientations showing heightened deviations. Future research should investigate how inter-implant distances may further influence scanning precision.

Keywords: implant, implant-supported prostheses, accuracy, scan body, digital impression

Poster 25030 DDS CLIN

Application of Artificial Intelligence to Determine Working Length for Root Canal Treatment

Cameron Carlson, Jonathan Oatis*, Samuel Altman*, Sofia Rodriguez Fitzpatrick, Richard J. Gray*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: Accurate determination of canal working length is crucial for root canal treatment. Traditional methods, such as radiographs and apex locators, are prone to human error and inefficiency. This study evaluates artificial intelligence (AI) in determining working length compared to manual methods.

Materials & Methods: Fifty radiographic images of extracted teeth were analyzed using an AI model (ChatGPT), with manual boley gauge measurements as the gold standard. AI accuracy was assessed using Bland-Altman analysis and intra-class correlation (ICC).

Results: AI exhibited high accuracy, with a slight underestimation of working length, likely due to reference circle placement. Bland-Altman analysis showed minimal bias, and ICC was 0.905, indicating excellent agreement with manual methods. AI also demonstrated efficiency improvements.

Conclusion: AI offers a reliable, accurate alternative for root canal length determination, reducing human error and enhancing efficiency in endodontic practice. Further research could optimize AI integration into clinical workflows.

Keywords: AI, working length

Poster 25031 DDS CLIN

Pilot study: A Comparison of AI-Generated and CAD/CAM IPS e.max ZirCAD Crowns

Daniel Krall, Sunghyo Oh*, Ariella Kerendian*, Shivani Karre, Amelia David, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To compare proximal contacts, occlusal contacts, anatomical accuracy, and fabrication time of AI-designed vs. CAD/CAM-designed IPS e.max ZirCAD crowns.

Materials & Methods: A laboratory-based comparison of 38 crowns (19 AI-designed, 19 CAD/CAM-designed) using 3Shape Automate (AI) and 3Shape Dental Manager (CAD/CAM).

Results: CAD/CAM crowns had more refined occlusal anatomy and occlusion ($p < .001$), while proximal contacts ($p = .311$) and marginal adaptation showed no significant differences. AI design was 4.25× faster than CAD/CAM ($p < .001$).

Conclusions: 3Shape Automate excelled in time efficiency, but 3Shape Dental Manager, guided by a lab technician, produced superior anatomical accuracy.

Keywords: CAD/CAM, ZirCAD, Artificial Intelligence, Fixed Prosthodontics

Poster 25032 DDS CLIN

Applications of Artificial Intelligence in RPD Design: A Revolutionary Learning Tool

Elianna Srikureja, Rachel Chung*, Marina Luna, Sofia Rodriguez-Fitzpatrick, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To compare Faculty-approved Removable Partial Denture (RPD) designs with Artificial Intelligence (AiDental) generated RPD designs.

Material & Methods: AxiUm data for Kennedy Class I and II RPD Designs were collected and recorded on Excel sheets for 302 patients. Data collected included: missing teeth, abutment teeth and number and location of rest seats, indirect retainers, and clasps. Using the recorded missing teeth, RPD designs were generated through AiDental with the McCracken philosophy. The same data was collected from AI-generated RPD designs and compared to faculty-approved designs using Bland-Altman and interrater reliability tests.

Results: There is a statistically significant similarity between abutment teeth and clasps with a slightly lower agreement between rest seats and indirect retainer ($p\text{-value} < 0.01$ for all variables).

Conclusion: These results demonstrate moderate to strong reliability with faculty-approved clasp placement and abutment teeth but shows moderate reliability for rest seats, and lower reliability for indirect retainers.

Keywords: Removable Partial Dentures, Artificial Intelligence, Learning Tool, Prosthodontics

Poster 25033 DDS CLIN

Impact of Implant Depth on Digital Impression Accuracy in Implant-Supported Fixed Partial Dentures

*Claudia Aguero**, *Guiliane Djoumekoum**, *Hanee Patel**, *Maria Parra Colmener**,
Sasiya Bhumpattarachai, *Marina Luna*, *Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: This study evaluated the effect of implant depth on digital impression accuracy for implant-supported restorations.

Materials & Methods: A gypsum master model was fabricated, simulating three implant depths: 0 mm (Group A), 3 mm (Group B), and 6 mm (Group C). Reference scans were obtained using a desktop scanner, and test scans were captured with a Trios intraoral scanner. Deviations (DX, DY, DZ) were analyzed using 3D metrology software and statistical tests (ANOVA, Kruskal-Wallis).

Results: Implant depth significantly affected scanning accuracy ($p < 0.001$). Group A had the lowest deviations, while Group C exhibited the highest, particularly in the bucco-lingual and corono-apical planes. Distal deviations were more pronounced than mesial ones.

Conclusions: Deeper implants negatively impact digital impression accuracy, which may compromise prosthetic fit. Optimized scanning techniques and improved technology are essential for deeper implant sites. Future research should focus on enhancing intraoral scanning accuracy to improve clinical outcomes.

Keywords: Digital impression

Poster 25034 DDS CLIN

Postprocedural Analgesic Use and Adherence to 2024 ADA Guidelines in Dental Patients

*Jeff Price**, *Caleb Smeraldi**, *Stephen Patterson**, *James Semple**, *Alireza Hayatshahi*, *Soh Yeun Eileen Kim*, *Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: Effective postprocedural pain management is essential for recovery and patient satisfaction. The 2024 American Dental Association (ADA) guidelines prioritize non-opioid therapies and recommend opioids only for severe pain. Adherence to these guidelines is critical for improving prescribing practices. This study assesses analgesic prescribing patterns and adherence to the 2024 ADA guidelines.

Materials & Methods: A retrospective review of patient records from Loma Linda University School of Dentistry (April 2024–January 2025) analyzed prescribed analgesics for post-procedural pain. Data included analgesic type, prescribing trends, and adherence rates.

Results: Of 633 charts, 28% included opioids, while 71% were non-opioid prescriptions. Overall, 85% adhered to ADA guidelines, with 66% of non-adherence cases involving opioid overprescription.

Conclusions: High adherence to ADA guidelines was observed, though opioid overprescription remains a concern. Enhanced education and audits are needed to improve compliance and reduce risks.

Keywords: postprocedural pain, analgesics, ADA guidelines, dental practice, pain management

Poster 25035 DDS CLIN

Influence of graduation requirements on periodontal maintenance productivity

*Manal Usmani**, *Navuen Alamawi**, *Kausar Khan**, *Houda Tebcherany*, *Udochukwu Oyoyo*, *Ahmed Khocht*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: For LLU-SD class 2024 periodontal maintenance graduation requirements were revised. Study objectives were to assess periodontal maintenance productivity and periodontal health outcomes before and after changes in graduation requirements.

Materials & Methods: Patient records were scanned for information on periodontal treatments by student providers for classes 2023 and 2024. Patients placed on periodontal maintenance were included. Patient demographics and oral health measures were acquired.

Results: A total of 1692 records were included. Number of maintenance visits was significantly higher in class of 2024 than 2023 ($p=0.0006$). Multivariate analysis adjusting for available patient pool negated the effect of student class. Thus, increased maintenance productivity in class of 2024 is attributed to increased patient availability rather than increased student motivation. Periodontal health outcomes were comparable between the student class groups ($p>0.05$).

Conclusion: Modifying graduation requirement for periodontal maintenance failed to improve either frequency of maintenance visits or periodontal health outcomes among LLU-SD patients.

Keywords: graduation requirements

Poster 25036 DDS CLIN

Retrospective Analysis of the Prevalence of Alveolar Osteitis Following Surgical Extraction of Mandibular Third Molars

*Patrick Angelo Lim**, *Alexey Gurin**, *Mahmoud Mahdavian**, *Adeyemi Falegan**, *Carlos Moretta*, *So Ran Kwon*, *Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To investigate the incidence of alveolar osteitis (AO) of lower third molar surgeries.

Materials & Methods: A retrospective study analyzed patient records, assessing risk factors such as pericoronitis, hypertension, diabetes mellitus, smoking, and oral contraceptive use. Patients were categorized by eruption type: complete bony impaction (CBIT), partial bony impaction (PBIT), soft tissue impaction (STIT), and erupted mandibular third molars (EMT). Analysis included bimodal-logistic-regression and ANOVA with Tukey post-hoc-testing.

Results: Statistically significant associations: history of pericoronitis in PBIT and STIT with EMT as reference factor ($p < 0.01$), hypertension and diabetes in CBIT and PBIT ($p < 0.01$). No cases were formally diagnosed as AO (ICD-10 M27.3), with 58 cases documented as dry socket; food impaction in socket with persisted pain was recorded in most cases.

Conclusions: Given the association between hypertension, diabetes, and alveolar osteitis, proactive follow-ups are recommended for improved patient care. Documentation should include differential-diagnoses (dry socket, alveolar osteitis, delayed healing) and ICD-10 coding.

Keywords: Alveolar osteitis, dry socket, third molar, risk factors

Poster 25037 DDS COM

Building Faculty Pipeline Programs: The Impact of Peer Tutoring

Andrew Nguyen, Anthony Naranjo*, Valerie Cu*, Raphael Garcia*, Udochukwu Oyoyo, John Won, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: The purpose of the study was to evaluate the impact of a peer tutoring program on student tutors' interest in considering academia and its effects on D1 students waxing skills in the tooth morphology class.

Materials & Methods: A pilot faculty pipeline program was established by recruiting student tutors to help in teaching the D1 class during the lab projects. A survey was distributed at the end of the session to the D1 students and the student tutors. Descriptive summary of survey responses was compiled. Kruskal-Wallis test to assess grade differences among classes. Generalized linear modeling on factors associated with considering academia.

Results: The generalized linear model indicated that a student's increased self-perception to help others was correlated with considering academia.

Conclusion: Willingness to help others is associated with interest in academia. Peer tutoring helped increase D1 waxing scores.

Keywords: Peer tutoring, academia,

Poster 25038 DDS COM

Caries Risk Assessment and Management by Dental Institution using BigMouth Data

Clara Kim, Julia Shin*, Sujin Sin*, Elizabeth Suh*, Seth Wiafe, Udochukwu Oyoyo, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To assess the distribution of caries risk categories and its relation to frequent snacking.

Materials & Methods: A retrospective review of data collected from the BigMouth Data Repository from over 3 million patients. Data analyses conducted through Pearson's Chi-Squared test and linear model ANOVA with a statistical significance of 0.05.

Results: There was a significance between the frequency of snacking and age ($p < 0.001$). Individuals with higher caries risk assessment were also more likely to experience an increase in snacking frequency ($p < 0.001$). Patients who were at high caries risk had a decrease in their frequency of snacking at their POE compared to their COE. Patients who snacked frequently also had higher non cavitated surface lesions ($p < 0.001$), visible plaque ($p < 0.001$), and greater recreational drug usage ($P < 0.001$).

Conclusion: Individuals that frequently snack are at a higher risk for caries; however, reducing their habits will lower their risk.

Keywords: Frequent snacking, BigMouth, Caries Risk Assessment

Poster 25039 DDS COM

Assessment of Severity of Stress of Dental Students and Recipes for Stress Management

Dima Ibnian, Axel Barba*, Sara Mojtahedi*, Debra Friesen, Udochukwu Oyoyo, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: This study investigates stress management strategies among dental students at Loma Linda University School of Dentistry (LLUSD). The primary goal of this research was to enhance the well-being of dental students, reduce burnout, and improve their academic and clinical performance, ultimately preparing them for successful and fulfilling careers in dentistry.

Materials & Methods: A cross-sectional study was conducted using an anonymous survey. The 32-item survey included three sections which was distributed to current dental students at LLUSD in hard copy format.

Results: The mean DES score was 55.5 and ranged from 24 to 120. Students used various techniques to manage stress, with an average of 3 coping strategies and techniques employed that were effective. The most commonly employed strategies included time management, deep breathing, and talking.

Conclusion: We conclude that effective time management and social support are crucial in maintaining lower stress levels among dental students.

Keywords: Dental students, stress management

Poster 25040 DDS COM

A Literature Review of Clear Aligner Allergies in Orthodontic Patients

Jessenia Maciel, Alexandria Stewart*, Mauricio Gonzalez Balut*

Loma Linda University School of Dentistry, Loma Linda, CA

Literature Review: Clear aligners are very popular due to their aesthetic, comfort, and marketing. However, the biocompatibility of clear aligners remains unaddressed, concerning allergic reactions and cytotoxicity from materials like thermoplastics and 3D-printed resins. Understanding the prevalence of allergies associated with clear aligners will provide valuable insights that could improve patient care standards. This study investigates the chemical composition of aligners and adverse events by evaluating previous studies. Previous articles examined aligner chemical properties, adverse events, cytotoxicity, manufacturers, and patient safety. It was found that most aligner brands are composed of plastic polymers and stabilizers that can cause allergies ranging from mild to severe. Residues from the manufacturing process can remain on the aligner surface and cause manifestations of dermic irritations in intra and extraoral tissues along with changes in saliva secretion. Overall, the biocompatibility of clear aligners is not well understood, creating a need for future research to enhance patient safety.

Keywords: clear aligners, adverse reactions, biocompatible, allergy

Poster 25041 DDS COM

Awareness of Registered Dental Assistant role limitations among LLU dental students, residents, and faculty

Jille Ann Regine Gonzales-Torreliza, Navjeet Singh Sandhu*, Jerry Gamboa Fernandez*, Priya Philip*, Anureet Kaur*, Priscilla Choi, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: This study aimed to assess the awareness and understanding of the roles, responsibilities, and limitations of Registered Dental Assistants (RDAs) among dental students, residents, and faculty at Loma Linda University School of Dentistry (LLUSD).

Materials & Methods: A cross-sectional survey was conducted with 188 participants, using a 20-question digital questionnaire based on the Dental Board of California's guidelines.

Results: D1 (34.25%) and D2-D4 (49.41%) had much lower knowledge than the 70% target ($p < 0.001$), showing a clear knowledge gap. IDP3-IDP4 (58.68%) and R-F (60.54%) were close to 70% ($p = 0.0748$ and $p = 0.1372$, respectively), meaning these groups had relatively higher knowledge levels.

Conclusion: Overall, these findings offer valuable insights for curriculum development at LLUSD and highlight the need for educational interventions to address knowledge gaps and improve teamwork and patient care in dental practice.

Keywords: Registered Dental Assistants, limitations

Poster 25042 DDS COM

Class III Malocclusion Prevalence in East Asian Americans vs. Native Population

Jonathan Ao, Yarezmin A. Che*, Marmar Moghareh Abed*, Rozhin Naghshizadian*, Mauricio Gonzalez-Balut*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: Class III malocclusion is strongly influenced by genetics, with a sibling recurrence risk of 55.7% and a sibling recurrence risk ratio of 18.8—much higher than rheumatoid arthritis (6) and diabetes mellitus (15) (Kudo et al., 2005). However, environmental influences remain unclear. This study examines whether environmental factors in the U.S., particularly California, affect Class III malocclusion prevalence by comparing East Asian Americans with native East Asians.

Materials & Methods: A total of 3,958 patients from the LLU graduate orthodontic clinic were surveyed, including 71 East Asians (18 Japanese).

Results: The prevalence in East Asian Americans was 32.39% and 22.22% in Japanese Americans, exceeding previously reported rates in their native countries (East Asians: 17.99%, Japanese: 14%).

Conclusions: These findings suggest genetic factors play a dominant role, with California's environment having minimal influence on prevalence. Further genetic studies are needed to explore risk alleles and gene-environment interactions to improve understanding and treatment strategies.

Keywords: Class III malocclusion, Prevalence study, Genetic predisposition, Environmental factors, East Asian Americans

Poster 25043 DDS COM

Applications of AI in Pediatric Dentistry: A Systematic Review and Meta-Analysis

Objectives: To evaluate AI applications in pediatric dentistry for diagnosis and treatment planning.

Materials & Methods: A systematic review of PubMed®, EMBASE®, Scopus, Web of Science™, IEEE, medRxiv, arXiv, and Google Scholar was conducted. The QUADAS-2 checklist assessed bias risk.

Results: Out of 3,542 studies, 33 met inclusion criteria, with 11 showing low bias risk. AI applications focused on early childhood caries (ECC) prediction, tooth identification, oral health evaluation, and supernumerary tooth detection. AI accuracy ranged from 60%–99%, sensitivity from 20%–100%, specificity from 49%–100%, F1-score from 60%–97%, and AUC from 87%–100%.

Conclusion: AI demonstrates promising accuracy for pediatric dental diagnostics, particularly in ECC prediction and radiographic analysis. Future studies should compare AI with standard care and establish standardized metrics for better cross-study comparisons.

Keywords: Artificial intelligence, caries detection, deep learning, pediatric dentistry

Poster 25044 DDS COM

Comparative Efficacy of CariesFree Adjunctive Therapy in Scaling and Root Planing Procedures

Wonseok Kim, Sumin Rhee*, Eunyoung Kim*, Yoosang Ahn*, Yun Seok Lee, Nima Sarmast, Balsam Jekki, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: This study evaluated CariesFree as an adjunct to Scaling and Root Planing (SRP) for improving pocket depth (PPD), bleeding on probing (BOP), and the number of periodontal pockets greater than 3 mm.

Materials & Methods: A total of 197 patients were enrolled, with one group receiving CariesFree in addition to SRP, and the other receiving SRP alone.

Results: Our findings indicate that CariesFree significantly reduced PPD, suggesting a potential benefit in improving pocket depth. However, it did not significantly impact BOP or the number of pockets greater than 3 mm.

Conclusions: These results suggest that CariesFree may be beneficial in enhancing pocket depth reduction when used as an adjunct to SRP, though it does not appear to influence BOP or the number of deep pockets.

Keywords: CariesFree, Scaling and Root Planing, Periodontitis, Adjunctive Therapy, Clinical Outcomes

Poster 25045 DDS SCIEN

Efficacy of Periodontal Instrument Sharpening Instructions Using Free-hand and Gleason Guide for New Dental Students

Alfred Mustafa, Scott Lee, Clyde Roggenkamp, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To determine the efficacy of periodontal instrument sharpening comparing the two methods with third year dental students.

Materials & Methods: A digital scale housing an aluminum wire was used to determine the force needed to cut through it. Dental students were shown instructions on how to sharpen their sickle scaler with the Gleason Guide and how to sharpen with the free hand method. Prior to sharpening, each scaler was dulled uniformly. After sharpening, the new sharpness was measured.

Results: The average decrease in force required for the Gleason Guide was 46.3 g of force whereas the free-hand method using a sharpening stone decreased the required force by 240.8 g of force reflecting a sharper scaler on average. A p-value of 0.242 was obtained.

Conclusions: There was no significant difference between the two methods. More experiments might be conducted to determine if there is a significant difference between the two methods.

Keywords: Instrument Sharpening, Periodontal Instruments, Gleason Guide

Poster 25046 DDS SCIEN

Efficiency and Precision of Dynamic Navigation System in Endodontic Access for Locating Calcified Canals

Carolyn Park, Calista Lat*, Chelsea Molato*, Brandon Park*, Sunee Limmeechockchai, Joseph Kan, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: Accessing canal orifices within calcified canals presents a considerable challenge. The Dynamic Navigation System (DNS) (X-Guide) assists dentists in accurately identifying these canals during endodontic access preparation.

Materials & Methods: A total of 128 3D printed teeth (64 premolars, 64 central incisors) were randomly accessed using freehand (FH) methods and the DNS by dental students and an endodontist. Evaluations included volumetric substance loss, access accuracy, procedure duration, and operator experience.

Results: DNS significantly reduces substance loss compared to FH. FH results in more optimal access preparation. No significant difference was found in canal location success ($p=0.111$) or perforation rate ($p=0.858$). Procedural time differences were statistically significant ($p=0.00045$) between students and endodontist in both FH and DNS.

Conclusion: Although DNS reduces substance loss and procedural time for students, it does not enhance access preparation, canal location success, or perforation avoidance for endodontists compared to FH methods.

Keywords: Dynamic Navigation System, Endodontic Access, Calcified Canals, Volumetric Substance Loss, Freehand vs. X-Guide

Poster 25047 DDS SCIEN

Prevalence of Migraine Headaches in Obstructive Sleep Apnea Patients in Faculty Practice

Chandler Phelps, Susan Roche, Adam Shafik, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To evaluate the prevalence of migraine headaches in patients diagnosed with OSA in the Loma Linda University Center for Dentistry and Orthodontics Orofacial Pain Faculty Practice.

Materials & Methods: A 10-year retrospective review of 454 patients diagnosed with OSA and migraine headaches (with or without aura) was conducted using Axium software. Data was analyzed using chi-square tests, t-tests, and regression analyses.

Results: Of 454 patients diagnosed with OSA, 16.5% also had migraine headaches. While female patients had a migraine prevalence similar to the general U.S. population, male patients had a 4% higher prevalence. Migraine with aura was the most prevalent subtype.

Conclusions: These findings support the hypothesis that migraine headaches are more prevalent in OSA patients. The association between OSA and migraine with aura is likely related to complex neurological dysfunction, hypoxia, and sleep disturbance. Based on our findings, we recommend all patients be screened for both conditions.

Keywords: obstructive sleep apnea (OSA), migraine headache

Poster 25048 DDS SCIEN

The Impact of Psychosocial Stressors on Cancer Outcomes in Oral Squamous Cell Carcinoma

Lisa Tu Hoang, Phuong Minh Dong, Michelle Arambula, Gary Yu, Chi Viet*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To assess the impact of psychosocial stressors in patients with OSCC on cancer outcomes and survival.

Materials & Methods: 173 OSCC patients were enrolled to quantify psychosocial stressors using the Adverse Childhood Experience (ACE) and Life Events Checklist (LEC-5), and characterize levels of cancer pain, quality of life impact, and symptom burden using the UCSF Oral Pain Questionnaire (UCSF-OPQ), modified Brief Pain Inventory (BPI), EORTC-QLQ30 and H&N35. Data were analyzed using Pearson's correlation, one-way ANOVA and Kaplan Meier log-rank test.

Results: Patients with more psychosocial stressors (ACE or LEC-5) had worse cancer symptom burden. Patients with financial difficulties had worse clinical pain, independent of their cancer stage ($p<0.001$). Patients with high pain scores and higher cancer symptom burden had higher mortality independent of cancer stage ($p<0.05$).

Conclusions: Our results demonstrate that psychosocial stressors worsen cancer survival. Clinical management of psychosocial stressors should be considered in the cancer treatment pathway.

Keywords: oral squamous cell carcinoma, psychosocial stressors, cancer symptom burdens, cancer outcomes

Poster 25049 DDS SCIEN

Prevalence of Fused Molar Roots in a Loma Linda Population Utilizing Cone Beam Computed Tomography

Min Soo Kim, Benjamin Lau*, Jeremy Oh*, Jambi Suhair, Sunee Limmeechokchai, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To determine the prevalence of fused molar roots in a Loma Linda patient population using Cone Beam Computed Tomography (CBCT) and to analyze correlations with age and gender.

Materials & Methods: CBCT scans from 144 patients (ages 18–85) were evaluated, including 408 molars (201 maxillary, 207 mandibular). Root fusion was classified using Yang et al. (1988) for maxillary molars and Hou and Tsai (1994) for mandibular molars. Statistical analyses included t-tests, chi-squared tests, and McNemar tests.

Results: Root fusion was found in 66 maxillary and 15 mandibular molars. The maxillary second molar had the highest bilateral fusion prevalence (32.6%), though not statistically significant. Age was significantly associated with root fusion ($p < 0.05$), while gender showed no correlation.

Conclusion: Root fusion is more common in older individuals. CBCT imaging is essential for identifying these variations. A larger sample is needed to enhance statistical significance and clinical applicability.

Keywords: Root fusion, molar morphology, CBCT, dental anatomy

Poster 25050 DDS SCIEN

Optimizing Aerosol Mitigation in Confined Spaces: In vitro Studies on Cost-effective Strategies

Salar Motamedi, Mohit Jagwani*, Ryan Sinclair, William Porter, So Ran Kwon*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: The study investigated the effectiveness of aerosol mitigation strategies, including the Corsi-Rosenthal Fan (CRF), saliva ejector (SE), and high-velocity evacuation (HVE), in reducing aerosol dispersion during dental procedures.

Materials & Methods: A controlled experiment was conducted with aerosol simulation via 1% lactic acid solution (pH = 2.5), and dispersion was assessed using pH-indicator-paper and air quality sensors measuring PM1, PM2.5, and PM10. A cavity preparation was performed under each intervention, and contamination levels were quantified using ImageJ software.

Results: CRF demonstrated an 85% reduction in aerosol contamination at all levels. Statistical analysis (ANOVA, Kruskal-Wallis, and Wilcoxon-tests) confirmed significant differences in aerosol dispersion among intervention groups ($p < 0.001$). While CRF significantly reduced particulate matter levels and aerosol floating time, no significant difference was found in contamination between assistant and doctor positions.

Conclusion: CRF significantly reduces aerosol contamination, making it a viable and cost-effective addition to standard infection control protocols in dental environments.

Keywords: Aerosol contamination, Corsi-Rosenthal Fan, Confined spaces

Poster 25051 DDS SCIEN

Effect of Spaceflight on Mouse Incisor Tooth Morphology by MicroCT Analysis

Mina Hanna, Jessica Ayoub*, Nadine Tawfik*, Gina Roque-Torres, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: As space exploration advances, understanding the impact of microgravity and space radiation on oral health is essential. Dentin and enamel are critical for tooth structure and function, yet the effects of spaceflight on these tissues remain underexplored. Enamel, the hardest tissue in the body, protects teeth from wear, while dentin provides support and sensory transmission. Long-term residence in outer space alters physiological processes, but its specific influence on dental tissues is not well understood. This retrospective study aims to address this gap by analyzing the effects of spaceflight on dentin and enamel density in mouse incisors using micro-computed tomography (microCT).

Materials & Methods: Key objectives include assessing changes in enamel and dentin density, evaluating total incisor volume, and examining regional variations within the tooth. Findings from this study will enhance our understanding of spaceflight-induced dental changes, contributing to broader research on the effects of space radiation.

Keywords: space flight, mouse, incisor

Poster 25052 DDS SCIEN

Spaceflight Effects on Bone Microarchitecture by MicroCT Analysis

Jean Paul Klein, Gina Roque-Torres, Udochukwu Oyoyo*
Loma Linda University School of Dentistry, Loma Linda, CA

Objectives: To analyze how rodent trabecular and cortical morphologies in mandibles alter after spaceflight.

Materials & Methods: 40x mice were divided into four groups (baseline, flight group (FG), flight control (FCG) and ground control (GC)). FG and FCG were sent aboard the International Space Station for 35 days. Upon returning to Loma Linda University, CA, the mice were inspected for health and survivability, euthanized, and their mandibles dissected. The hemimandibles were scanned, reconstructed, realigned, and analyzed using computer software.

Results: After analyzing 31 different parameters post-Spaceflight, the following cortical bone parameters: Eu.N, Conn, Conn.Dn and BMD-TMD revealed statistically significant outcomes, whereas the following trabecular bone parameters: TV, Crd.Z, Tb.Th, Tb.N, Po, Conn.Dn, and BMD-TMD showed statistically significant results.

Conclusion: Trabecular bone revealed greater variable losses than cortical bone. Cortical bone generally loses a greater number of connected structures (ie: Conn, Conn. Dn, Eu.N), whereas trabecular bone generally loses structural integrity.

Keywords: microgravity-induced bone loss, mandibular bone microarchitecture, trabecular and cortical bone, MicroCT analysis

POSTER COMPETITION JUDGE FORM: ORIGINAL RESEARCH



2025 HOMECOMING CONVENTION

Poster Judging Form February 28, 2025

Poster 250XX Original Research

CLINICAL/SCIENTIFIC VALUE OF SUBJECT MATTER

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Important, timely, pertinent	1	3	5	7
2. Applicable to clinical practice	1	3	5	7
3. Organized, logical, well-sequenced	1	3	5	7
4. Scientifically sound and supported	1	3	5	7
5. Original, creative or new approach	1	3	5	7
6. Used appropriate methods and/or materials	1	3	5	7

Total number points for this section: _____

VERBAL PRESENTATION

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Problem and/or purpose clearly stated	1	3	5	7
2. Objectives and conclusion related	1	3	5	7
3. Title is representative of project	1	3	5	7
4. Statistics and results explained	1	3	5	7
5. Presentation is dignified and professional	1	3	5	7
6. Presenters are able to answer questions	1	3	5	7

Total number points for this section: _____

VISUAL PRESENTATION

Maximum number points for this section = 16

	<u>Low</u>			<u>High</u>
1. Creative, attractive and professionally displayed	0	2		4
2. Visual aids represent overview of project	0	2		4
3. Abstract content is organized and complete	0	2		4
4. Handout available	0	2		4

Total number points for this section: _____

Questions and Comments _____

Judge _____
(Signature)

Total Points: _____

POSTER COMPETITION JUDGE FORM: CASE REPORT OR LITERATURE REVIEW



2025 HOMECOMING CONVENTION

Poster Judging Form February 28, 2025

Poster 250XX Case Report of Literature Review

CLINICAL/SCIENTIFIC VALUE OF SUBJECT MATTER

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Important, timely, pertinent	1	3	5	7
2. Applicable to clinical practice	1	3	5	7
3. Organized, logical, well-sequenced	1	3	5	7
4. Scientifically sound and supported	1	3	5	7
5. Original, creative or new approach	1	3	5	7
6. Used appropriate literature to support case	1	3	5	7

Total number points for this section: _____

VERBAL PRESENTATION

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Problem and/or purpose clearly stated	1	3	5	7
2. Objectives and conclusion related	1	3	5	7
3. Title is representative of project	1	3	5	7
4. References are explained	1	3	5	7
5. Presentation is dignified and professional	1	3	5	7
6. Presenters are able to answer questions	1	3	5	7

Total number points for this section: _____

VISUAL PRESENTATION

Maximum number points for this section = 16

	<u>Low</u>			<u>High</u>
1. Creative, attractive and professionally displayed	0	2	4	
2. Visual aids represent overview of project	0	2	4	
3. Abstract content is organized and complete	0	2	4	
4. Handout available	0	2	4	

Total number points for this section: _____

Questions and Comments _____

Judge _____
(Signature)

Total Points: _____