

Biomedical Research Award

Dr. Carlos Flores-Mir, *University of Alberta, Canada*

Carlos Flores-Mir, DDS, DSc, FRCD(C)

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Employment:	Tenured Professor at the University of Alberta Extramural Private Practice as an Associate Orthodontist in Edmonton, Canada	
Current Position:	Director, School of Dentistry Graduate Studies, University of Alberta (since March 20) Orthodontic Program Director, University of Alberta (since July 10) Visiting Professor, Universidad Peruana de Ciencias Aplicadas (since Dec 22) Part-time Professor, Universidad Peruana Cayetano Heredia (since Sep 02) Assistant Editor, The Angle Orthodontist (Since April 12) Associate Editor, Dental Press Journal of Orthodontics (Since January 15) Associate Editor, Journal of World Federation of Orthodontics (Since April 17) Associate Editor, Orthodontics and Craniofacial Research (Since May 20)	
Education:	DDS (Universidad Peruana Cayetano Heredia – Peru - 1994) Certificate in Orthodontics (Universidad Peruana Cayetano Heredia – Peru - 1998) BSc in Stomatology (Universidad Peruana Cayetano Heredia – Peru - 1994) MSc in Stomatology (Universidad Peruana Cayetano Heredia – Peru - 1999) DSc in Stomatology (Universidad Peruana Cayetano Heredia – Peru - 2002) Postdoctoral Fellowship in Orthodontics (University of Alberta- Canada - 2005)	
Presentations:	More than 175 international presentations around the topics of Clinical Orthodontics, Evidence-based Dentistry and Evidence-based Orthodontics (Argentina, Australia, Austria, Bolivia, Belgium, Brazil, Canada, Colombia, Chile, Costa Rica, Germany, Iceland, Israel, Italy, Mexico, Netherlands, Panama, Paraguay, Peru, Poland, Portugal, Romania, Uruguay, USA, Scotland, Switzerland, and Spain)	

Publications: 9 book chapters related to Evidence-based Dentistry
387 peer-reviewed articles and 43 commentaries published
H-Index: 48 Scopus – 48 Web of Science

Brief description of the project:

Droplet aerosolization during specific orthodontic procedures has been a prime concern in the orthodontic community since the start of the COVID-19 pandemic. Large oral and nasal spray blooms are generated, which puts the orthodontic personnel at risk of contracting microbial infections carried out by related aerosols. This fact generated a strong interest in better understanding the nature of bioaerosol exposure in an orthodontic practice.

Since aerosols remain in circulation for a significant amount of time after the termination of the orthodontic procedure, other patients and the dental staff can be at risk of developing various illnesses based on the biological content of the circulating aerosols. While oral biomass dispersion is reduced through saliva ejectors, high-volume suctions, and mouthwashes, remaining circulating aerosols still contain significant microbial content from the nose, currently understood to be more COVID-19 infectious than salivary particles.

This proposal aims to test the nasal bioaerosols produced during specific orthodontic aerosol-generating procedures. We hypothesize that some orthodontic visits generate bioaerosol sprays (droplets and aerosols) from the nose and the saliva, which could be mitigated by antimicrobial nasal sprays and extra-oral aerosol capture devices.

Overall orthodontic benefit from the award:

An improved understanding of the physical characteristics of the generated spray, their biological origin, how far they travel, and how to best mitigate them to assess if additional infection control procedures are needed when providing orthodontic aerosol-generating procedures.

AAOF importance:

Research funding for orthodontic projects is scarce at national and international levels. The AAOF support is invaluable for orthodontically meaningful research projects that benefit our members and communities.

I have been so lucky to receive seven AAOF-funded awards during my academic career. What I have accomplished has undoubtedly been supported by the AAOF.