



2024 RAA

Dr. Thimanthi Withana, Nova Southeastern University

1) Short biography

Dr. Thimanthi Withana grew up in Sri Lanka and later relocated to the US. She earned her Bachelor of Science in Health Sciences with a minor in Sociology from Chapman University in Orange, CA. Following this, Dr. Withana obtained her DMD from Case Western Reserve University (CWRU) in Cleveland, OH, where she was honored with the Hanau, Quintessence and Omicron Kappa Upsilon Research awards. Currently Dr. Withana is pursuing a certificate in Orthodontics and Dentofacial Orthopedics, as well a Master of Science in Dentistry at Nova Southeastern University in Fort Lauderdale, FL. Her research interest areas primarily revolve around the safety and efficacy of clear aligner therapy. Beyond her professional endeavors, she finds joy in spending time with her loved ones, exploring different cultures and traveling.

1) Brief description of the project

As the use of clear aligner therapy increases, limited literature exists on the biocompatibility of aligner materials. Reports on adverse effects of aligners have been published on the U.S. Food and Drug Administration's database, Manufacturer and User Facility Device Experience (MAUDE). The aim of this study is to determine whether exposure to Invisalign elute, in-vitro after 1 week and 4 weeks, will generate an imbalanced release of pro-inflammatory and anti-inflammatory mediators in monocyte cell line (THP-1) and oral epithelial cell line (OBA-9). The presence of inflammatory mediators may suggest that the Invisalign material contains properties that may trigger allergic reactions. These findings will be beneficial to clinicians, in evaluating the hypersensitivity reactions in the early stages, before it potentially advances to more severe complications.

2) Statement of how orthodontic education will benefit from your award

The AAOF Research Aid award provides us with the resources needed to investigate inflammatory mediators and collect essential data on hypersensitivity reactions. These insights will enrich orthodontic education by offering clinicians with a deeper understanding of evaluating and diagnosing hypersensitivity reactions caused by clear aligner therapy.

3) Why the Foundation is important to your project

The American Association of Orthodontics Foundation (AAOF) plays a pivotal role in our project. The foundation's financial backing enables us to expand our study beyond our initial scope. In particular, with the support of the AAOF, we can assess two cell lines and evaluate a wider range of inflammatory mediators. Dr. Withana is appreciative of the support and

mentorship provided by the AAOF and is eager to contribute to the understanding of the biocompatibility of clear aligner therapy.

4) How the Foundation funding is expected to or has benefitted your career

The funding provided by the foundation is invaluable to my career progression. In particular, the financial backing enables me to delve deeper into my research study. Moreover, considering the AAOF's esteemed position in the orthodontic community as a cornerstone of research and education, this award fuels my dedication to stay engaged in research and contribute to the field of orthodontic long-term.