

Research Aid Award

Dr. Nathaly Lemoine, *Texas A&M College of Dentistry*

I am a second-year orthodontic resident at Texas A&M College of Dentistry. For my master's thesis, I am interested in addressing the prevalent issue of white spot lesions in orthodontic patients by determining the effectiveness of a novel Ca-F O-ring in decreasing the occurrence of white spots in-vitro.

Despite white spot lesions being a common esthetic and oral health problem for our patients, there are currently no ideal strategies to prevent them during fixed orthodontic treatment. Previous strategies either relied on patient compliance or exhibited a "burst" amount of fluoride due to the high solubility of their fluoride source and therefore were ineffective for use in between orthodontic appointments. In previous studies, we have developed a method to load calcium fluoride, a low solubility compound, onto O-rings to provide a therapeutic, sustained release of fluoride in orthodontic patients between visits without necessitating patient compliance. To continue studying these newly developed Ca-F O-rings, we plan to evaluate how effective they are at preventing white-spots on extracted human premolar teeth to further determine their viability as a preventive clinical tool.

Our study is significant to orthodontics because it will provide clinicians a simple yet effective way to decrease the risk of white spot lesions in their high-risk patients without disturbing practice flow since O-rings are already a ubiquitous product for most. White spot lesions are not only unesthetic to the patient but are difficult to resolve and result in premature debondings to avoid further damaging the enamel. With the support of the Foundation, we hope to shed more light on how successful Ca-F O-rings are in re-mineralizing enamel subjected to pH so that we can prevent white spot lesions and their related problems.

As a resident, I appreciate that the AAOF has provided me a great opportunity and platform to conduct this research study on white spot prevention and broaden my knowledge in the field. I believe that the generosity of the Foundation will help jumpstart and pave my career as a clinical scientist.

