

Biomedical Research Award

Dr. Chung How Kau, *The University of Alabama at Birmingham*

PI: Dr Chung How Kau is a faculty member in the Department of Orthodontics, School of Dentistry. He has served in the Department for 11.5 years. Previously he was a faculty member at the University of Texas Health Science at Houston and also Cardiff University.



Significance: There is little understanding of the Orthodontic management of TMJ arthritis in children in the United States and certainly less consensus on a global scale. Most Orthodontists receive referrals from Rheumatologists and Oral and Maxillofacial Surgeons informing them of the condition, but the exact prescribed Orthodontic treatment varies significantly across the country. The goal of this pilot study through the AAOF biomedical research award, is to provide baseline data for children who present with JIA and to understand the functional effects that a patient might present as compared to a normative group of patients within an Orthodontic Clinical setting.

Title: A study to understand TMJ function in children with JIA.

Relevance to Orthodontics: The clinical data provided provides novel data that has not been collected.

Clinical Orofacial Examination: A recent consensus article identified 20 clinical outcome variables for the assessment of patient symptoms and 12 clinical outcome variables for assessment of TMJ arthritis-related signs. The primary goal of this assessment was to monitor patients with existing TMJ arthritis, and to identify outcome variables within these domains to test response of TMJ arthritis to therapy

Aims: The aim of the study is to understand if there are functional differences in children with JIA who have TMJ arthritis versus those who do not.

Materials and Methods: Subjects for the study will be recruited from 2 centers in Birmingham Alabama, USA – The Division of Pediatric Rheumatology, Children’s Hospital (PRCH) and the Craniofacial Orthodontia Disorders Clinic, Department of Orthodontics, UAB (CODC). PRCH currently manages 600+ active patients who present with JIA. TMJ involvement is diagnosed from contrast MRI and is the definitive diagnosis for patients with JIA with TMJ arthritis. UAB Orthodontics currently has 1400+ active Orthodontic patients with the majority of these (70%) in the age range between 8-16 years. CODC manages 100+ cleft patients and over 70+ Orthognathic Surgical Patients.

Results: The results in this study will provide an insight to the function of the jaw. Dissemination in Rheumatology and Journal of Dental Research.

AAOF Benefit: I hope the study will add to the Orthodontic literature and help the mission of the AAOF.