

## RESEARCH PROJECT FOR DMD STUDENTS

**Professor's name:** Dr. Julia Cohen-Levy

**Co-Principal Investigator:** Dr Zovinar der Khatchadourian

### **The proposed project will be in:**

Basic science

Clinical research

Public health

**Project length:** started in November 2024 - December 2026

**Project Location:** Faculty of Dental Medicine and Oral Sciences, Orthodontic Clinic

**Project title:** Evaluation of objective occlusal contacts during 6 months of conservative, non-irreversible treatments, in patients experiencing acute bite changes: a pilot comparative study

### **Project Description:**

The project focuses on understanding acute malocclusion, which is a sudden change in the way the upper and lower teeth fit together, often associated with disorders like TMJ effusion, muscular imbalance, or condylar degeneration. The hypothesis is that some individuals might experience temporary improvements in occlusion following conservative treatments. **Research Protocol Overview:** This study aims to provide insights into the effectiveness of non-invasive treatments in managing acute malocclusion and possibly contribute to less invasive approaches in dental practice. **Participants** will be Adult healthy volunteers experiencing recent bite changes, with or without pain. The cause of these changes, either muscular or joint-related, will be assessed by an orofacial pain specialist (Dr. Zovinar.) **Intervention.** We will propose conservative treatments like myofunctional exercises, dietary and behavioral changes, and possibly oral splints to asymptomatic participants. Importantly, no irreversible dental treatments (like orthodontics or restorative dentistry) or occlusal adjustments will be made during the study period (and in the 6 previous months). **Control Group:** Adult healthy volunteers without symptoms of temporomandibular disorders (TMD) or complaints about bite changes, having a stable occlusion. The comparison group might include dental students, matched by age and gender with the intervention group. **Outcome measure:** Dental contacts will be assessed using the Tscan Novus, a computerized system to evaluate aspects like symmetry, occlusion time, and the position of the center of force (COF). These assessments will be conducted at baseline (T0), 1 month (T1), 3 months (T3), and 6 months (T6) by a trained orthodontist, Dr. JCL, who will be blinded to whether participants are symptomatic or controls.

### **Student Responsibilities:**

Assistance in the finalization of protocol submission to Institutional Review Board;

Assistance in participant enrollment, communication with participants/ obtaining consent, data entry;

Assistance in clinical examination;

Data analysis, participation in article or poster (McGill's Research Day)

## **RESEARCH PROJECT FOR DMD STUDENTS**

**Professor's name:** Dr. Julia Cohen-Levy

**The proposed project will be in:**

- Basic science
- Clinical research
- Public health

**Project length:** started in November 2023 - to go until December 2025

We are in the second year.

**Project Location:** Faculty of Dental Medicine and Oral Sciences, Orthodontic Clinic

**Project title:** Effect of Passive Oral Myofunctional Reeduction in pediatric obstructive sleep apnea: A randomized controlled trial.

**Project Description:**

Paediatric Obstructive Sleep Apnea (OSA) is a multifactorial condition, associated with significant comorbidities, affecting cardiovascular health, cognitive development and quality of life. Its main cause is adenotonsillar hypertrophy, but some co-factors such as obesity, orofacial dysfunctions and craniofacial abnormalities contribute to the severity of symptoms or their persistence after adenotonsillectomy.

**Aim:** Oral Myofunctional Reeduction (OMR) has been shown to reduce the Apnea-Hyponea index (AHI) of children and can serve as an adjunct to other therapies. Our aim is to evaluate a method of Passive Oral Myofunctional Reeduction (POMR), which is potentially less demanding in terms of parental time and active involvement of the child. POMR involves the use of a prefabricated soft oral appliance, which is designed to help position the tongue, lips, and jaw in a way that promotes optimal muscle function.

**Methods:** The design of the study is a randomized Controlled Trial, enrolling 60 children with significant obstructive sleep apnea and scheduled for adenotonsillectomy, taking place in two pediatric hospitals (Hospital St Justine and McGill's pediatric ENT department). We would enroll 30 participants, who would be examined at our Faculty of Dental Medicine. Symptomatic Children will be randomized into 2 groups: Group 1 (experimental group) would receive a flexible oral appliance, to be worn during quiet activities and sleep, after nasal hygiene measures and Group 2 would be using nasal hygiene alone (control group). The objective assessment of sleep parameters will be performed at home using an ambulatory device, measuring AHI, desaturation index, minimal oxygen saturation, flow limitation, and snoring), before and after therapy, at baseline and after a 3-month interval. An orthodontic and craniofacial assessment, the examination of orofacial functions as well as the quality of life (questionnaire OSA-18) will also be evaluated on participants, before and after therapy.

**Student Responsibilities:**

Assistance in participant enrollment, communication with participants/parents, obtaining consent, data entry, assistance in clinical examination.

Clinical examinations are likely to take place on Tuesdays or Wednesdays afternoons.

Data analysis, participation in article or poster (McGill's Research Day).

## **RESEARCH PROJECT FOR DMD STUDENTS**

**Professor's name:** Nabil OUATIK, DMD, MSc, FRCD(C)

**The proposed project will be in:**

Basic science

Clinical research

Public health

**Project length:** 6 months

**Project location:** Montreal metropolitan area

**Project title:** Knowledge, attitudes, and practices among Québec orthodontists toward tooth autotransplantation

### **Project Description:**

Tooth autotransplantation (AT) is the removal and transplantation of a tooth to an extracted-tooth socket or a surgically prepared. It is a predictable treatment for children and teenagers with missing teeth, but seldom practiced in Québec and Canada. Experience from other countries has shown that orthodontists play a key role in elaborating treatment plans for missing, hopeless or lost permanent teeth. Their input is essential in the decision to incorporate AT in the patients' treatment plans. This study will attempt to understand orthodontists current knowledge, attitudes and practices of AT. We will carry out a survey among orthodontists in the Montréal Metropolitan Area. Reporting will be based on univariate statistics. Our study aims at providing valuable insights to increase the availability of AT in clinical practice.

**Student Responsibilities:** Performing a literature review on the topic of tooth autotransplantation in orthodontics. Participating in the creation of a questionnaire to survey orthodontists. Collecting data for the survey. Analyzing survey data.

## **RESEARCH PROJECT FOR DMD STUDENTS**

**Professor's name:** Nabil OUATIK, DMD, MSc, FRCD(C)

**The proposed project will be in:**

Basic science

Clinical research

Public health

**Project length:** 6 months

**Project location:** Montreal metropolitan area

**Project title:** Project Securi-dent: pilot project to train schoolteachers to prevent and manage dental trauma in schools

### **Project Description:**

This pilot project aims to raise awareness among primary school teachers in Québec and Morocco about the prevention and management of dental trauma such as dental avulsion (accidental loss of a tooth) at school. Through a 30-minute standardized interactive online training, teachers in Québec and Morocco will acquire knowledge and practical skills in the field of dental trauma prevention and management. The focus will be on basic care to provide to the child (reimplanting the tooth or placing it in milk), the recognition of dental trauma and the implementation of preventive measures, thus promoting safer school environments. At the same time, primary school children in both countries will eventually benefit from best practices in dental trauma, potentially reducing the incidence and impact of dental trauma.

**Student Responsibilities:** Performing a literature review on the topic of management of dental trauma in the school setting. Creating the content for the standardized online training. Creating the questionnaire to evaluate learning by participants.

## **RESEARCH PROJECT FOR DMD STUDENTS**

**Professor's name:** Svetlana Tikhonova

**The proposed project will be in:**

- Basic science
- Clinical research
- Public health

**Project length:** 6-9 months

**Project location:** Faculty of Dental Medicine and Oral Health Sciences, McGill U.; pediatric dental clinic, Montreal

**Project title:** 'Initial Implementation of a person-centered caries prevention program for young children in a disadvantaged Montreal community'

**Project Description:**

**The project aim** is to evaluate the feasibility and initial implementation of the person-centered caries prevention program (PCCPP) among children from disadvantaged community in Montreal.

**Objectives:**

1. To assess the appropriateness of the PCCPP (the fit and relevance of the program) for dental health care providers and the administration of a pediatric dental clinic.
2. To assess the acceptability of the PCCPP by the dental health care providers, administration and patients (the content, way of delivery, etc.).
3. To assess the needs for the PCCPP implementation within the study setting (resources, training, materials, time and cost).
4. To explore perceptions of the dental health care providers (dental hygienists, dentists, dental clinic administration) about the potential barriers and facilitators of the PCCPP implementation.
5. To organise training for dental health care providers (dentists, dental hygienists) for the PCCPP implementation (caries lesions diagnosis, caries risk assessment, behaviors modification approach).

**Student Responsibilities:**

- Writing the study background section, including the literature review and rationale
- Involvement in developing and writing of other parts of the research protocol
- Preparing the protocol document for the Ethical board (IRB) submission
- Preparing the educational materials needed for the dental care providers' training
- If time allows participation in the project implementation