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Phonetic spelling of your (full) name

Roo-vah-rah-sheh Mah-chee-veh-nyee-kah

Presenting Author Category

Non-Trainee

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Research Category

Clinical

Abstract Title

Microbes, Teeth, and Caries Protection: Partnering with First Nations and Métis Communities in Manitoba to discover Caries Resistance Mechanisms in Children

Authors

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Will they participate in the poster presentation at CHRD?

No

Background

Early childhood caries (ECC) is defined as tooth decay in children under the age of 6. It's the most common chronic disease in children worldwide and is highly prevalent in rural and remote regions especially among Indigenous populations in Canada

Objective

By exploring interactions between the oral microbiome and tooth properties, this study aims to identify and uncover natural caries-protective mechanisms in high-risk First Nations and Métis children under 6 years of age

Methods

Participant's enrollment includes an oral health assessment to determine caries status, collection of saliva and plaque samples and completion of an interview-led questionnaire to assess a child's health, oral hygiene practices and nutrition. Participants are classified as ECC-affected or caries free (CF). Saliva and dental plaque in Phosphate Buffered Saline (PBS) with 15% glycerol are kept at -80°C until they are shipped to ADA Forsyth Institute, for microbiological analysis. Clinical data are stored in the Research Electronic Data Capture (REDCap). Preliminary descriptive statistics on participant's sociodemographic characteristics were obtained on REDCap.

Results

To date, 242 participants have been enrolled with 176 being First Nations and 66 Métis. Of the 176, 113 have ECC and 63 are CF and in the Métis cohort, 25 have ECC and 41 are CF. The average age of participants enrolled in the study is 46.20 ± 15.92 months. Preliminary analyses indicate that CF children exhibited either less microbial acid production or beneficial microbial interactions that may reduce decay risk.

Conclusion

These findings support the hypothesis that Indigenous children's oral environments possess unique natural defenses. Identifying protective microbiome and enamel traits could lead to the development of culturally sensitive, preventative strategies for ECC. These insights can inspire future treatments that promote healthier smiles, reduce oral health disparities, and improve oral health outcomes among Indigenous children.