Graduate Diploma in Health Research PROGRAM – 2018

SUPERVISOR & PROJECT INFORMATION FORM

Please complete and return via email only (gdip.hres@utoronto.ca) by September 4, 2018
(forms received after this date will not be posted).

Supervisor Information

Name: John L. Sievenpiper    Email: john.sievenpiper@utoronto.ca

Degree(s): MD, PhD, FRCPC    SGS Department: Nutritional Sciences

Academic Rank: Associate Professor    Field of Research: Clinical nutrition

Research Institution Affiliation (if applicable):
University of Toronto
St Michael's Hospital

Allocation of student contact time: 2h/week
(number of hours per week YOU are available to the student for any concerns or to review progress)
Project Information (for posting on GDipHR website)

Title: Sub-study of the STOP SUGARS NOW trial: The effect of replacing sugar-sweetened beverages with non-nutritive sweetened beverages or water on ectopic fat

Original trial
A randomized controlled trial of the effect of replacing sugar-sweetened beverages with non-nutritive sweetened beverages or water on gut microbiome and metabolic outcomes: Strategies To OPpose SUGARS with Non-nutritive sweeteners Or Water trial (STOP SUGARS NOW)

Description (max 500 words):
International health agencies and chronic disease associations have called for reductions in free/added sugars to ≤5-10% of energy to address the growing epidemics of obesity and diabetes with a special focus on the reduction of the major source of free sugars, sugar sweetened beverages (SSBs). Dietary Guidelines for Americans Committee report and the recent American Heart Association (AHA) advisory, as an alternative to SSBs, recommend against the use of non-nutritive sweetened beverages (NSBs) and encourage water, with a concern that NSBs may contribute to an increased risk of obesity and diabetes possibly via gut microbiome induced glucose intolerance. There is an urgent need to address the ongoing concerns related to NNSs. Health Canada, in particular, has indicated that studies of sugar reduction strategies that use NNSs and target microbiome are an important research priority. We are currently conducting a CIHR-funded 3-arm randomized controlled cross-over trial that assesses the effect of a 'real world' strategy to reduce SSBs using non-nutritive sweetened beverages (NSBs) or water on gut microbiome, glucose tolerance, and cardiometabolic risk factors in overweight or obese participants. These findings will be important in guiding future evidence-based dietary recommendations and public policy in relation to NSBs.

In this trial we are also measuring ectopic liver fat using 1-H MRS as a sub-study. The aim is to assess if replacing SSBs with NSBs or water has an effect on ectopic fat (intrahepatic and intramuscular fat) over 4-weeks in overweight or obese participants. The candidates will provide clinical support in the on-going trial and conduct an analysis of this sub-study with an aim to publish a high-impact paper.

If human subjects are involved, have the appropriate Research Ethics Board approvals been obtained?
X YES ☐ NO ☐ Application Submitted ☐ N/A
Do you expect this work will be published within the 20 months?
X YES ☐ NO ☐ Uncertain

**Student's roles and responsibilities (please be as specific as possible):**

1. Become an integral part of the STOP SUGARS NOW trial team.
2. Provide clinical support in the on-going trial.
3. Learn clinical trial methodology, understand trial design and approach to analysis.
4. Learn to analyze a randomized controlled trial using STATA/SAS or R software.
5. Use repeated measures mixed effect models to assess changes in exploratory outcomes.
6. Conduct pairwise comparisons between interventions using Tukey-Kramer adjustment or other appropriate statistics. Explore effect modification by sex.
7. Conduct an a-priori sub-group analysis age, sex, ethnicity, baseline BMI, baseline WC, baseline FPG, baseline 2hPG (OGTT), baseline iAUC, medication use, sweetener blend (intervention), beverage type (intervention), and background sweetener use.
8. Report the trial results the Consolidated Standards of Reporting Trials (CONSORT) guidelines for randomized controlled trials.
9. Publish the results of the study in a high-impact journal.
10. Disseminate the results of the trial at local, national, and international meetings and promote the results among scientific, clinical, political, and industrial opinion leaders in nutrition.
11. Use the results to inform future nutrition guidelines development with respect NSB intake and determine the direction for future research.

Please indicate who will serve as the student's direct report for daily oversight (PI, PhD student, technician, etc...):

Post-doctoral fellow.