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A novel metabolic approach to study modifiable risk factors for cancer

We will study 120 men and women without cancer from the BC Generations Project. Between 2009 and 2014 height, weight, waist circumference and bioelectrical impedance (an accurate measure of body fat) were assessed. The number of servings of fruits and vegetables, amount of alcohol consumed and participation in physical activity in an average day were self-reported. We will measure 233 metabolites in stored plasma samples using advanced technology (nuclear magnetic resonance, NMR). Metabolites will be compared between participants according to the presence or absence of preventive behaviours. We hypothesize that there will be distinct metabolic profiles associated with preventive behaviours and these metabolites will be involved in pathways involved with cancer protective processes. The study findings will help identify how preventive behaviours impact biology using multiple measures of lifestyle and advanced technology to discover biomarkers of preventive behaviours. The identification of biomarkers related to cancer risk and preventive response could enhance the development of targets for future interventions to reduce cancer risk.