### **Supplementary Material**

***Supplementary Material Table 1: Core Questionnaire Domains***

|  |
| --- |
| Sociodemographic Date of birth, sex, marital status, biological siblings, adoption status, education level, ethnicity, country of birth, residence, languages, working status, income  Health Status General health  Healthcare Utilization Medical appointments, screening tests  Men’s Health Screening tests, reproduction  Women’s Health Menstruation, oral contraceptives, reproduction, breastfeeding, fertility treatment, menopause, hormone replacement therapy, hysterectomy, oophorectomy, screening tests  Personal Health History Hypertension, heart attack (myocardial infarction), stroke, asthma, chronic obstructive pulmonary disease, major depression, diabetes, liver cirrhosis, chronic hepatitis, Crohn’s disease, ulcerative colitis, irritable bowel disease, eczema, lupus, psoriasis, multiple sclerosis, osteoporosis, arthritis, cancer (bladder, brain, breast, cervix, colon, esophagus, kidney, larynx, leukemia, liver, lung and bronchus, non-Hodgkin lymphoma, lymphoma, ovary, pancreas, prostate, rectum, skin, stomach, thyroid, trachea, uterus, and other), cancer treatment, and any other long-term health conditions  Family Health History Health history of biological relatives including heart attack, stroke, diabetes, chronic obstructive pulmonary disease, high blood pressure, asthma, major depression, liver cirrhosis, chronic hepatitis, Crohn’s disease, ulcerative colitis, irritable bowel disease, eczema, lupus, psoriasis, multiple sclerosis, osteoporosis, arthritis, and cancer (bladder, brain, breast, cervix, colon, esophagus, kidney, larynx, leukemia, liver, lung and bronchus, non-Hodgkin lymphoma, lymphoma, ovary, pancreas, prostate, rectum, skin, stomach, thyroid, trachea, uterus, and other)  Medications Prescription medication  Lifestyle/Behaviours Sleep, UV exposure, diet, alcohol consumption, tobacco use, environmental tobacco smoke exposure, physical activity  Anthropometric Measurements Handedness, ability to stand, height, weight, waist and hip measurements |

***Supplementary Material Table 2: Supplementary Questionnaire Domains*****(Questions Unique to the Atlantic Provinces)**

|  |
| --- |
| Home Type of stove, source of tap water, water treatment  Allergies Animals, foods, insect bites/stings, latex, medications, metal/jewellery, mold/dust, and pollen/plants/grasses/trees  Lifestyle/Behaviours Diet, exercise  Mental Status Perception of health, depression, anxiety  Misc. Partner’s employment status, full-term births, if Jewish (Sephardic or Ashkenazi)  Residential History All residential addresses since birth, rent or own, primary source of drinking water, types of home heating  Occupational and Environmental History Occupational history, environmental exposures (asbestos, arsenic salts, chromium salts, cadmium salts, coal tar/soot/pitch/creosote/ asphalt, mineral, cutting or lubricating oil, benzidine, benzene, isopropyl oil, dyestuffs, vinyl chloride, pesticides, ionizing radiation, welding, wood dust, whole body vibration, noise, and engine exhaust |

***Supplementary Material Table 3: Components of the Healthy Eating Index***

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** | **Score** | **Criteria for perfect score** | **Criteria for minimum score** |
| **Vegetables and fruit (serving/d)** | 0 to 10a | Age ≤ 50 yr: females ≥ 7 servings; males ≥ 8 servings  Age > 50 yr: females ≥ 7 servings; males ≥ 7 servings | 0 serving |
| **Grain products** **(serving/d)** | 0 to 10a | Age ≤ 50 yr: females ≥ 6 servings; males ≥ 8 servings  Age > 50 yr: females ≥ 6 servings; males ≥ 7 servings | 0 serving |
| **Milk and dairy products (serving/d)** | 0 to 10a | Age ≤ 50 yr: females ≥ 2 servings; males ≥ 2 servings  Age > 50 yr: females ≥ 3 servings; males ≥ 3 servings | 0 serving |
| **Meat and alternatives (serving/d)** | 0 to 10a | Age ≤ 50 yr: females ≥ 2 servings; males ≥ 3 servings  Age > 50 yr: females ≥ 2 servings; males ≥ 3 servings | 0 serving |
| **Snack, dessert, and non-diet soft drink (serving/d)** | 0 to 10a | < 0.5 serving/d | ≥ 2 servings/d |
| **Eat at least one servings of dark green vegetables each day** | 0 or 1 | At least 1 servings of dark green vegetables per day | 0 serving |
| **Have vegetables and fruit servings more than juice** | 0 or 1 | Vegetables and fruit servings greater than juice servings | Vegetables and fruit servings less than or equal to juice servings |
| **Make at least half of grain products whole grain each day** | 0 or 1 | Ratio of whole grain products to total grain intakes ≥ 0.5 | Ratio of whole grain products to total grain intakes < 0.5 |
| **Do not eat bread with oil products** | 0 or 1 | Do not eat bread with butter, margarine, oil, or oil spray | Eat bread with any oil products |
| **Drink lower fat milk or milk alternatives** | 0 or 1 | Drink skim, 1%, or 2% milk or milk alternatives | Drink whole milk |
| **Have meat alternatives such as beans, lentils, and tofu** | 0 or 1 | Eat at least 1 serving/d of tofu, bean curd, beans, or other legumes | 0 serving |
| **Eat fish** | 0 or 1 | Eat at least 1 serving of fish per day | 0 serving |
| **Do not eat saturated fat or its products** | 0 or 1 | Do not eat any saturated fat or its products | Eat butter, lard or bacon fat, or Ghee |
| **Season food with soy sauce or fish sauce at the table** | 0 or 1 | Never or rarely | Sometimes or always |
| **Add salt to food at the table** | 0 or 1 | Never or rarely | Sometimes or always |
| **Total score (range)** | **0 to 60** |  |  |

a Intermediate intakes were scored proportionately between 0 and 10. Adopted from Yu et al.(11)

***Supplementary Material Table 4: Analysis of Toenail Samples***

A comprehensive trace element profile was constructed of Atlantic PATH participants by analyzing 27 metals in 2352 random toenail samples. Toenails were prepared according to the methods of Ryabukhin(1) and then digested by adapting the method of Gault et al.(2) The digested toenails were analyzed using a PerkinElmer Elan DRC-*e* ICP-MS equipped with an SC4 DX autosampler (ESI). The mass spectrometry data were further analyzed for correlations between different bio-accumulating metals. The data was first normalized by transforming measurements values into natural logarithms, followed by two-tailed Pearson’s correlation analysis. The correlations between metals are detailed in the table below.



**References**

1. Ryabukhin YS. Nuclear-based methods for the analysis of trace element pollutants in human hair. J Radioanal Nucl Chem 1980; 60(1):7–30.

2. Gault AG, Rowland HA, Charnock JM et al. Arsenic in hair and nails of individuals exposed to arsenic-rich groundwaters in Kandal province, Cambodia. Sci Total Enviro 2008; 393(1):168–76.