The Canadian National Active Transportation Survey, 2021: Protocol

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Both active transport (i.e., moving oneself from place to place by walking, cycling, or other active means) and public transport are recognized as sustainable and inclusive forms of transportation (United Nations, n.d.).

Infrastructure Minister, Catherine McKenna, recently announced the development of a National Active Transportation Strategy. This process, no doubt, should be informed by the most recent data. The last comprehensive national transportation survey was conducted in 2004 by the Canadian Fitness and Lifestyle Research Institute (CFLRI; 2006). It included topics such as prevalence of utilitarian walking and cycling, recreational walking and cycling, distance to locations, benefits of walking and cycling, barriers, and perceptions of opportunities and infrastructure supports. Since then, the CFLRI has included active transport questions on many of its physical activity surveys but not to the same depth. Similarly, general information on transportation choices is collected through the federal census. For instance, in 2011, 12% of Canadian adult commuters used public transport for the longest part of their trip, 5.7% walked to work, and 1.3% cycled (Turcotte, 2013). In the eight largest metropolitan areas, the proportion using public and/or active transport within the urban core is much higher. Between 1996 and 2016 those who used active transport increased from 19% to 47% in Toronto, from 16% to 38% in Montréal, from 15% to 38% in Calgary, from 17% to 39% in Vancouver and from 22% to 42% in Ottawa-Gatineau (Savage, 2019). However, none of these more recent sources provide insight on motivational determinants for transportation choices and are devoid of information related to the COVID-19 pandemic. A baseline is required now for informing the development of the National Active Transportation Strategy and in providing a basis for evaluating future implementation of the strategy.

However, the Coronavirus Disease (COVID-19) outbreak, and the associated restrictions, present some unique challenges for how people can and will choose to move around their communities (Spence et al., 2021; Moore et al., 2021).

Overall goal and specific objectives

The goal of this project was to establish a knowledge base on the transportation choices, and correlates of those choices, of Canadian adults during the threat of repeated pandemics. The specific objectives were threefold: (1) conduct a national transportation survey; (2) provide evidence to inform the development of a national active transportation strategy; and (3) lay the groundwork for future research and initiatives addressing the impact of pandemics on the physical activity, recreation, and transportation habits of Canadians.

The project was led by a partnership team involving the Canadian Parks and Recreation Association (CPRA) and researchers from the University of Alberta (Spence), University of British Columbia (Faulkner), and the CFLRI (Cameron). CPRA has a vested interest in advocating for supportive environments to facilitate sustainable forms of transportation among Canadians.

This document describes the protocol for the Canadian National Active Transportation Survey, 2021.

Method

Participants

Potential participants were recruited from the Leger Opinion (LEO) panel comprised of more than 400,000 Canadians. This panel is designed to provide representative data of the Canadian population, random recruitment, and probability sampling. The panel is recruited by telephone through random digit dialing in a sampling frame combining landlines and cell phone. Once in the panel, respondents are contacted for a more detailed interview including questions about demographic factors that are used in the sampling process to ensure that bias is minimized or if certain profiles of groups are desired. From this panel, a random sample is drawn, and respondents are contacted by email and invited to participate in the study. Interviews are conducted in either English or French. As part of their membership in the LEO Panel, participants collect credits for awards or prizes for each study/survey completed.

This survey included 2,868 Canadian adults, 18 years and older. It was administered between November 26, 2021, and December 7, 2021. Once informed about the specifics of the study and their rights via an information letter, the participants provided consent by actively choosing to complete the survey. In terms of reliability, were this a probability sample, we could expect a margin of error of ±1.83% 19 times out of 20 (95% confidence).

Ethical approval was received from a Research Ethics Board at the University of Alberta (reference Pro00110489).

Measures

See Appendix A for a copy of the questionnaire.

Demographics. Based on other surveys conducted by CFLRI, the following demographic information was collected, including: gender (response options: man; woman; non-binary, genderqueer, agender, or similar identity; two-spirit; prefer to self-describe as…; prefer not to answer), sex (response options: male; female; intersex; prefer to self-describe as…; prefer not to answer), age (response options: 18-24 years; 25-44 years; 45-64 years; 65 years or older), highest level of education attained (response options: no schooling; elementary school; some or completed high school; some or completed community college or technical school (CEGEP); some or completed University [Bachelors, Masters, Doctorate, Professional Degree]), current household income (response options: less than $30,000; $30,000 to $59,999; $60,000 to $79,999; $80,000 to $99,999; $100,000 to $120,000; more than $120,000; don't know), employment status (response options: working on a full-time basis in a workplace setting away from the home; working on a full-

time basis but at your home; working on a part-time basis in a workplace setting away from the home; working on a part-time basis but at your home; a student participating in classes at an educational facility away from the home; a student participating in virtual classes at home; retired; unemployed, on leave, on disability; a homemaker [care for home or for dependents]), change in employment status since the pandemic (response options: yes; no); occupation in an essential service (response options: no; yes; not sure); community size (response options: under 1,000; 1,000 to 4,999; 5,000 to 9,999; 10,000 to 29,999; 30,000 to 49,999; 50,000 to 99,999; 100,000 to 249,999; 250,000 to 499,999; 500,000 or greater), location of residence (response options: city; town; village; hamlet; other), distance from home to place of work or study (response options: less than 2 kms; 2.0 kms to 4.99 kms; 5.0 kms to 9.9 kms; 10.0 to 19.99 kms; more than 20 kms; NA (e.g., I work at home, I am retired); number of people living in household (open response); number of adults (open response), number of children (open response); marital status (response options: single, that is never married and never registered in a civil partnership; married and living with husband/wife; separated, but still legally married; divorced; widowed; in a registered civil partnership; separated, but still legally in a civil partnership; formerly in a civil partnership which is now legally dissolved; surviving partner from a civil partnership), landed immigrant status (response options: yes, 1-5 years; yes, 5-10 years; yes, 10-15 years; yes, more than 15 years; no), ethnic or cultural background (response options [asked to select all that apply]: North American Aboriginal origins [e.g., First Nations, Inuit, Métis]; Other North American origins [e.g., Acadian, American, Canadian]; European origins [e.g., British Isles, French, Eastern, West European]; Caribbean origins [e.g., Antiguan, Bahamian, Cuban, Dominican]; Latin, Central and South American origins [e.g., Argentinian]; African origins [e.g., Central and West African, Northern African]; Asian origins [e.g., Western Central Asian, and Middle Eastern]; Oceania origins [e.g., Australian, New Zealander, Pacific Island]; don't know; refuse), and province/territory. Additionally, participants were asked to report the 6-digit postal code of their household residence, the number of cars or vans owned, or available to household (response options: 0, 1, 2, 3, 4 or more), and whether they owned a dog, bicycle, scooter, E-bike, E-scooter, or step counter (e.g., pedometer, FitBit) (response options: yes, no).

Perceived neighbourhood environment. Two questions were asked about perceived safety while walking/wheeling alone within the respondent's neighbourhood during the day and at night (response options: very unsafe; fairly safe; a bit unsafe; very unsafe; never walk alone during the day/at night because I feel unsafe; never walk outside alone during the day/at night, other reasons, don't know). Finally, a 4-item scale assessed reasons why a household might choose to live in a neighbourhood or region (e.g., "…because it is a convenient location to walk or cycle to work", "we have chosen to live in this neighbourhood/region because it is a convenient location with respect to our household's non-work activities, such as shopping, exercise, parks, etc.") (response options: 1 [agree] to 7 [disagree]).

Self-rated health and level of disability. Similar to the Canadian Community Health Survey (2020), one question asked about general health (response options: poor; somewhat poor; fair; good; very good]). For disability, participants were asked "Do you have a disability that limits your ability to

engage in physical activity and/or active transportation?" (response options: yes; yes, but only some of the time; no).

Subjective well-being. The ONS4 was used to examine subjective well-being (Office of National Statistics, 2018). The instrument consists of four indicators of subjective well-being including life satisfaction, feeling that the things done in life are worthwhile, happiness, and anxiety. Specifically, participants were asked: "Overall, how satisfied are you with your life nowadays?", "Overall, to what extent do you feel that the things you do in your life are worthwhile?", "Overall, how happy did you feel yesterday?", "Overall, how anxious did you feel yesterday?". Response options ranged from 0 (not at all) to 10 (completely) for life satisfaction, worthwhileness, and happiness, and response options for anxiety ranged from 0 (not at all anxious) to 10 (completely anxious). The four indicators reflect different dimensions of subjective well-being, including an evaluative component (question one), a hedonic or experiential component (questions 2 and 3), and a eudemonic component (question 4). Indicators represent conceptually distinct elements of well-being and are generally reported separately (ONS, 2018; VanderWeele et al., 2020).

Boredom. Proneness to boredom was assessed using the Short Boredom Proneness Scale (SBPS) (Struk et al., 2017). Construct validity and reliability of the short form scale are comparable to the original (Struk et al., 2017). Following the stem "how do the following items describe you?", participants responded on a 7-point Likert scale to items such as "I often find myself at "loose ends," not knowing what to do" and "in most situations, it is hard for me to find something to do or see to keep me interested." (response options: 0 [strongly disagree] to 6 [strongly agree]). The average across items is used for the purpose of analysis, with a higher score on the scale indicating a greater tendency to experience boredom. Internal consistency of the SBPS was excellent (Cronbach's alpha= 0.91) in a similar study of UK adults (McCurdy et al., 2022).

Transportation choices. Respondents were asked to "think about a typical week in the past 3 months" and report the frequency and total time per week that they spent in each of walking/wheeling, cycling, other forms of active transport (e.g., skateboarding), use of public transport, and private vehicles to get to work or school (response options for frequency: number of days per week or NA [e.g. retired]) (response options for total time: none; less than 1 h; from 1 to 5 h; from 6 to 10 h; from 11 to 20 h; more than 20 h; not applicable [e.g., I'm retired, I work on my property]).

In addition, for various modes of transport (i.e., active transport, public transport, private vehicles, and ride hailing [e.g., taxi, Uber]), participants were asked to "think about a typical week in the past three months (i.e., August 2021 to October 2021). For each of the following destinations, how did your use of transportation compare to the same period prior to the COVID-19 pandemic (i.e., August to October 2019)?" (response options: much less, somewhat less, the same amount, somewhat more, much more). Respondents reported changes in each mode for different destinations including for work, for school, and for community activities (e.g., visiting friends, shopping, picking up children from school).

Finally, one general question that was not specific to context or mode of transport, asked participants, "how often do you use active transportation during the year?" (response options: every day; a few times a week; about once a week; a few times a month; once a month; less than once a month; never).

Barriers to active transportation. Respondents were asked to select up to three among a list of 10 possible barriers that prevented them from walking/wheeling or cycling for transportation "more often than you do". Response options included: The weather (e.g., rain) or climate (e.g., harsh winter conditions); Distance from potential destinations (e.g., rural area); Health (e.g., disability, medical condition); Environment (e.g., hilly terrain, lack of sidewalks); Lack of motivation or interest; Inconvenient or impractical (e.g., need to drop children off at school); Lack of time; Safety (e.g., concerned about motor vehicles, personal security); Lack of equipment or gear (e.g., walking shoes, bicycle); Other.

Transportation beliefs. Perceived capability, opportunity, and motivation for transportation choices (COM-B beliefs) were measured with a 6-item scale (Keyworth et al., 2020). Questions asked about perceived physical opportunity, social opportunity, reflective motivation, automatic motivation, physical capability, and psychological capability in different contexts; specifically, for 1) transport to work/school and 2) community activities (e.g., visiting friends, picking up children from school, shopping) (response options: 0 [strongly disagree] to 10 [strongly agree]). Examples from this measure include 'I had the physical opportunity (e.g., sufficient time, equipment, opportunity) to engage in active transport for community activities (e.g., visiting friends, picking up children from school, shopping)' [opportunity] and 'I was physically able (e.g., I had sufficient physical stamina, I could overcome disability, I had sufficient physical skills) to engage in active transportation for transport to work/school' [physical capability].

Support for active transportation-related policies. Participants were asked to rate their support for active transportation-related policies on a 7-point Likert scale (response options: 1 = strongly oppose; 2 = moderately oppose; 3 = somewhat oppose; 4 = neutral; 5 = somewhat support; 6 = moderately support; 7 = strongly support). Items were developed based on previous surveys examining support for obesity and physical activity related policies as reported by Raine et al. (2014) and Yun et al. (2018). Three items were used verbatim from the surveys and an additional five were adapted or devised to reflect policy approaches specific to active transportation.

Collisions and injuries experienced during or from active transportation. Participants were asked if they had ever been involved in a collision while walking/wheeling, cycling, or engaging in another form of active transportation with either a motor vehicle, a cyclist, a person using another form of active transport (e.g., roller blading, skateboarding), or a pedestrian (not including bumping into other people while walking or wheeling). If yes, then the participant is asked about the number of collisions, number of injuries, and most severe injury if any for each type of collision. These questions were asked for two time periods: in the past 3 months and over the person's lifetime.

Physical activity. Current physical activity was assessed with a single item, i.e., "In the past week, on how many days have you done a total of 30 min or more of physical activity, which was enough to raise your breathing rate? This may include sport, exercise and brisk walking or cycling (including using a wheel chair) for recreation or to get to and from places" (Milton et al., 2012). The scale has demonstrated test-retest reliability (r = 0.72) and good validity in comparison to accelerometers (r = 0.46 to 0.57).

A set of relative questions were then asked to compare usual physical activity and sedentary behaviour to the year prior. Following the stem, "In comparison to your usual/typical level of physical activity prior to the COVID-19 outbreak and the government-ordered lockdown (i.e., mid-March, 2020)…" participants rated their current level of five behaviours: physical activity, sitting or reclining while awake, screen-based devices (e.g., TV, computer, tablet) for leisure, screen-based devices (e.g., computer, tablet) for work or studies, the amount of time you spent outdoors (response options: much less, somewhat less, about the same, somewhat more, much more).

Lifetime walking and running. Two questions were asked about the longest distance ever walked, i.e. "Which of the following distances have you ever walker or wheeled (i.e., use a wheelchair) to get from one place to another at one time? 1.0 kms (approx. 10 mins), 2.0 kms (approx. 20 mins), 3.0 kms (approx. 30 mins), 5.0 kms (approx. 60 mins), 10 kms (approx. 120 mins), more than 10 kms" (response options: no, yes, not sure, NA); and run, "Which of the following distances have you ever run at one time? 1.5 kms, 5.0 kms, 10 kms, 42 kms (e.g., a marathon), more than 42 kms" (response options: no, yes, not sure, NA).

Motives for physical activity. An abridged version of The Recreational Exercise Motivation Measure (REMM; Rogers & Morris, 2003; Aaltonen, et al., 2014) was used to assess motives for physical activity. Following an opening stem "I participate in physical activity to", participants responded to 9 items including "improve my skills and/or get better at an activity", "be physically fit", and "get from place to place" (response options: 1 [strongly disagree] to 5 [strongly agree]). An additional four items broadened the scale: "save money (it's cheaper than driving)", "address climate change", "put food on the table (it's very necessary for my job)", "I'm not interested in physical activity".

Identity. Based on an adapted measure from Murtagh and colleagues (Murtagh Gatersleben, & Uzzell, 2012a; 2012b), participants were asked "How important to you are the following in defining who you are?" They then rated importance for each of: Motorist, pedestrian, community member, parent, cyclist, environmentalist, public transit user, and worker (response options: 1 [not at all important] to 7 [very important]).

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Appendix A

The Canadian National Active Transportation Survey, 2021: Questionnaire

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The following questions ask about your travel behaviour in and around your community.

Active transportation

Active Transportation refers to any form of human-powered transportation (e.g., walking, cycling, using a wheelchair, in-line skating, skateboarding, running) to **get from place to place**.

1. How often do you use active transportation during the year?
   a. Every day
   b. A few times a week
   c. About once a week
   d. A few times a month
   e. Once a month
   f. Less than once a month
   g. Never

Think about **a typical week in the past 3 months (i.e., August 2021 to October 2021)**.

2. On how many days did you walk or wheel (i.e., use a wheelchair) to work or to school per week? This could include walking or wheeling to a train station or bus stop on the way to work or school.
   # of days: :_____ (NA: Not applicable)

3. How many hours did you usually spend walking or wheeling (i.e., use a wheelchair) to work or to school per week? This could include walking or wheeling to a train station or bus stop on the way to work or school.
   a. None
   b. Less than 1 h
   c. From 1 to 5 h
   d. From 6 to 10 h
   e. From 11 to 20 h
   f. More than 20 h
   g. Not applicable (e.g., I'm retired, I work on my property)

4. On how many days did you cycle to work or to school per week? This could include cycling to a train station or bus stop on the way to work or school.
   # of days: :_____ (NA: Not applicable)

5. How many hours did you usually spend cycling to work or to school per week? This could include cycling to a train station or bus stop on the way to work or school.
   a. None
   b. Less than 1 h
   c. From 1 to 5 h
   d. From 6 to 10 h
   e. From 11 to 20 h
   f. More than 20 h

g. Not applicable (e.g., I'm retired, I work on my property)

6. On how many days did you use other forms of active transportation (e.g., in-line skating, skateboarding, running) to get to work or to school per week? This could include transporting to a train station or bus stop on the way to work or school.
  # of days: :_____ (NA: Not applicable)

7. How many hours did you usually spend using other forms of active transportation (e.g., in-line skating, skateboarding, running) to get to work or to school per week? This could include transporting to a train station or bus stop on the way to work or school.
a. None
b. Less than 1 h
c. From 1 to 5 h
d. From 6 to 10 h
e. From 11 to 20 h
f. More than 20 h
g. Not applicable (e.g., I'm retired, I work on my property)

8. On how many days did you take public transit (e.g., train, bus, subway) to work or to school per week?
  # of days: :_____ (NA: Not applicable)

9. How many hours did you usually spend using public transit (e.g., train, bus, subway) to go to work or to school per week?
a. None
b. Less than 1 h
c. From 1 to 5 h
d. From 6 to 10 h
e. From 11 to 20 h
f. More than 20 h
g. Not applicable (e.g., I'm retired, I work on my property)

10. On how many days did you ride or drive in a privately-owned motor vehicle to work or to school per week?
  # of days: :_____ (NA: Not applicable)

11. How many hours did you usually spend riding or driving in a privately-owned motor vehicle to go to work or to school per week?
a. None
b. Less than 1 h
c. From 1 to 5 h
d. From 6 to 10 h
e. From 11 to 20 h
f. More than 20 h
g. Not applicable (e.g., I'm retired, I work on my property)

12. Have you ever used an e-bike or e-scooter for transportation? (yes, no, NA)

13. If yes, have you used an e-bike or e-scooter for transportation in the past three months (i.e., August 2021 to October 2021)? (yes, no, NA)

<u>Barriers to active transportation</u>

14. Apart from COVID-related restrictions or concerns, what are the main things preventing you from walking or wheeling (i.e., using a wheelchair) for transportation more often than you do (<u>select up to 3 reasons</u>)?

   a. The weather (e.g., rain) or climate (e.g., harsh winter conditions)
   b. Distance from potential destinations (e.g., rural area)
   c. Health (e.g., disability, medical condition)
   d. Environment (e.g., hilly terrain, lack of sidewalks)
   e. Lack of motivation or interest
   f. Inconvenient or impractical (e.g., need to drop children off at school)
   g. Lack of time
   h. Safety (e.g., concerned about motor vehicles, personal security)
   i. Lack of equipment or gear (e.g., walking shoes)
   j. Other

15. Apart from COVID-related restrictions or concerns, what are the main things preventing you from cycling for transportation more often than you do (<u>select up to 3 reasons</u>)?

   a. The weather (e.g., rain) or climate (e.g., harsh winter conditions)
   b. Distance from potential destinations (e.g., rural area)
   c. Health (e.g., disability, medical condition)
   d. Environment (e.g., hilly terrain, lack of bike lanes)
   e. Lack of motivation or interest
   f. Inconvenient or impractical (e.g., need to drop children off at school)
   g. Lack of time
   h. Safety (e.g., concerned about motor vehicles, personal security)
   i. Lack of equipment (e.g., bicycle) or gear
   j. Other

COVID context for transportation

16. Think about **a typical week in the past three months (i.e., August 2021 to October 2021)**. For each of the following destinations, how did your use of transportation **compare to the same period prior to the COVID-19 pandemic** (i.e., August to October 2019)?

1 = much less, 2 = somewhat less, 3 = the same amount, 4 = somewhat more, 5 = much more

Destination	1_Private vehicle	2_Active transportation	3_Public transport	4_Ride hailing (e.g., taxi, Uber)	5_Not applicable (e.g., retired)
16a. Work					
16b. School					
16c. Community activities (e.g., visiting friends, shopping, picking up children from school)					

Questions 17 – 22. On a scale from 0 (strongly disagree) to 10 (strongly agree), please rate your ability and willingness to engage in active transportation in various contexts **during the COVID-19 pandemic** (i.e., since mid-March, 2020).

	0	1	2	3	4	5	6	7	8	9	10
17. I had the PHYSICAL opportunity (e.g., sufficient time, equipment, opportunity) to engage in active transport….											
17a. For transport to work/school											
17b. For community activities (e.g., visiting friends, picking up children from school, shopping)											

	0	1	2	3	4	5	6	7	8	9	10
18. I had the SOCIAL opportunity (e.g., support from friends and family) to engage in active transportation…											
18a. For transport to work/school											
18b. For community activities (e.g., visiting friends, picking up children from school, shopping)											

	0	1	2	3	4	5	6	7	8	9	10
19. I was MOTIVATED (e.g., I had the desire to, I felt the need to) to engage in active transportation…											
19a. For transport to work/school											
19b. For community activities (e.g., visiting friends, picking up children from school, shopping)											

	0	1	2	3	4	5	6	7	8	9	10

20. Engaging in active transportation was something that I could do AUTOMATICALLY (e.g., is something I did before I realised I was doing it)…											
20a. For transport to work/school											
20b. For community activities (e.g., visiting friends, picking up children from school, shopping)											

	0	1	2	3	4	5	6	7	8	9	10
21. I was PHYSICALLY able (e.g., I had sufficient physical stamina, I could overcome disability, I had sufficient physical skills) to engage in active transportation…											
21a. For transport to work/school											
21b. For community activities (e.g., visiting friends, picking up children from school), shopping											

	0	1	2	3	4	5	6	7	8	9	10
22. I was PSYCHOLOGICALLY able (e.g., had the ability to engage in appropriate memory, attention and decision making processes, knowledge) to engage in active transportation…											
22a. For transport to work/school											
22b. For community activities (e.g., visiting friends, picking up children from school, shopping)											

Collisions and injuries experienced during from active transportation

The following questions ask about collisions and injuries while engaged in active transport.

	1_# of collisions (if no collisions, insert 0)	2_# of injuries (if no injuries, insert 0)	3_Severity of most serious injury (1 = a scratch or bruise, 2 = sought medical attention, 3 = hospitalized, 4 = permanent disability)	4_Not applicable (e.g., unable to engage in active transport)
23. While walking or wheeling for active transportation, have you ever been involved in a collision with				
23a_…a motor vehicle				
23b_…a cyclist				
23c_…a person using another form of active transport (e.g., roller blading, skateboarding)				
23d_…a pedestrian (not including bumping into other people while walking or wheeling)				
24. While cycling for active transportation, have you ever been involved in a collision with				
24a_…a motor vehicle				
24b_…a cyclist				
24c_…a person using another form of active transport (e.g., roller blading, skateboarding)				
24d_…a pedestrian (not including bumping into other people while walking or wheeling)				
25. While engaged in other forms of active transportation (e.g., in-line skating, skateboarding), have you ever been involved in a collision with				
25a_…a motor vehicle				
25b_…a cyclist				
25c_…a person using another form of active transport (e.g., roller blading, skateboarding)				

25d_…a pedestrian (not including bumping into other people while walking or wheeling)			
26. While walking or wheeling for active transportation <u>in the past 3 months</u>, were you involved in a collision with			
26a_…a motor vehicle			
26b_…a cyclist			
26c_…a person using another form of active transport (e.g., roller blading, skateboarding)			
26d_…a pedestrian (not including bumping into other people while walking or wheeling)			
27. While cycling for active transportation <u>in the past 3 months</u>, were you involved in a collision with			
27a_…a motor vehicle			
27b_…a cyclist			
27c_…a person using another form of active transport (e.g., roller blading, skateboarding)			
27d_…a pedestrian (not including bumping into other people while walking or wheeling)			
28. While engaged in other forms of active transportation (e.g., in-line skating, skateboarding) <u>in the past 3 months</u>, were you involved in a collision with			
28a_…a motor vehicle			
28b_…a cyclist			
28c_…a person using another form of active transport (e.g., roller blading, skateboarding)			
28d_…a pedestrian (not including bumping into other people while walking or wheeling)			

Government support for active transportation

29. The next set of questions ask about government investments, spending, and policy in relation to facilitate active transportation.

What is your level of support for the following?

1 = Strongly oppose; 2 = Moderately oppose; 3 = Somewhat oppose; 4 = Neutral; 5 = Somewhat support; 6 = Moderately support; 7 = Strongly support

	1 Strongly oppose	2	3	4	5	6	7 Strongly support
29a. Implementing transportation policies designed to promote physical activity through safe routes, cycle facilities, adequate lighting, etc.							
29b. Spending government money on more dedicated bicycle paths in my community to make streets safer for cyclists, cars, and pedestrians							
29c. Banning all traffic in high-use pedestrian areas during peak hours to support active (e.g., walking, cycling) or public transportation							
29d. Changing the design of neighbourhoods and communities to encourage informal physical activity in daily life							
29e. Charging a tax on all motor vehicles to support investments in infrastructure for active transportation							
29f. Offering tax credits for public transit passes							
29g. Offering tax credits for bicycles and other equipment for active transportation							
29h. Charging higher rates for parking so as to subsidize costs for active transportation infrastructure (e.g., bike lanes, walking paths)							

Current physical activity

30. In the past week, on how many days have you done a total of 30 min or more of physical activity, which was enough to raise your breathing rate? This may include sport, exercise and brisk walking, wheeling (i.e., using a wheel chair), or cycling for recreation or to get to and from places.
# of days:

In comparison to your usual/typical level of physical activity prior to the COVID-19 outbreak and the government-ordered lockdown (i.e., mid-March, 2020)…

31. How would you rate your **current level of physical activity** (i.e., activity that is enough to raise your breathing rate)?
Much less
Somewhat less
About the same
Somewhat more
Much more

32. How would you rate your current level of sitting or reclining while awake?
Much less
Somewhat less
About the same
Somewhat more
Much more

33. How would you rate your current level of using screen-based devices (e.g., TV, computer, tablet) for leisure?
Much less
Somewhat less
About the same
Somewhat more
Much more

34. How would you rate your current level of using screen-based devices (e.g., computer, tablet) for work or studies?
Much less
Somewhat less
About the same
Somewhat more
Much more

35. How would you rate the amount of time you spent outdoors?
Much less
Somewhat less
About the same

Somewhat more
Much more

Lifetime walking and running

36. Which of the following distances have you ever walked or wheeled (i.e., use a wheelchair) to get from one place to another at one time? Options: yes, no, not sure, NA
36a. 1 km (approx. 10 mins)
36b. 2 kms (approx. 20 mins)
36c. 3 kms (approx. 30 mins)
36d. 5 kms (approx. 60 mins)
36e. 10 kms (approx. 120 mins)
36f. More than 10 kms

37. Which of the following distances have you ever run at one time? Options: yes, no, not sure, NA
37a. 1.5 kms
37b. 5.0 kms
37c. 10 kms
37d. 42 kms (e.g., a marathon)
37e. More than 42 kms

Motives for physical activity

38. On a scale from 1 (strongly disagree) to 5 (strongly agree)

I participate in physical activity to:	1	2	3	4	5
38a. improve my skills and/or get better at an activity					
38b. be physically fit					
38c. be with friends and/or do activity with others					
38d. improve psychological health					
38e. maintain/improve appearance and body shape					
38f. conform to others' expectations					
38g. have a good time and I enjoy exercising					
38h. be fitter and/or look better than others					
38i. get from place to place					
38j. save money (it's cheaper than driving)					
38k. address climate change					
38l. put food on the table (it's very necessary for my job)					
38m. I'm not interested in physical activity					

Subjective Well-being

The next set of questions ask about your feelings on aspects of your life. There are no right or wrong answers.

39. On a scale of 0 to 10, where 0 is 'not at all' and 10 is 'completely'

	0	1	2	3	4	5	6	7	8	9	10
39a. Overall, how satisfied are you with your life nowadays?											
39b. Overall, to what extent do you feel that the things you do in your life are worthwhile?											
39c. Overall, how happy did you feel yesterday?											
39d. Overall, how anxious did you feel yesterday?											

Boredom Proneness

39. On a scale from 0 (strongly disagree) to 6 (strongly agree), how do the following items describe you?

	0	1	2	3	4	5	6
40a. I often find myself at "a loose end," not knowing what to do							
40b. I find it hard to entertain myself							
40c. Many things I have to do are repetitive and monotonous							
40d. It takes more stimulation to get me going than most people							
40e. I don't feel motivated by most things that I do							
40f. In most situations, it is hard for me to find something to do or see to keep me interested							
40g. Much of the time, I just sit around doing nothing							
40h. Unless I am doing something exciting, even dangerous, I feel half-dead and dull							

Identity (Murtagh et al., 2012a; 2012b)

41. How important to you are the following in defining who you are?

1 = ''Not at all important'', 4 = ''Neither important nor unimportant'' and 7 ''Very important''

	1 Not at all important	2	3	4	5	6	7 Very important
41a. Motorist							
41b. Pedestrian							
41c. Community member							
41d. Parent							
41e. Cyclist							
41f. Environmentalist							
41g. Public transit user							
41h. Worker							

Perception of neighbourhood

42. How safe do you feel generally in your local neighbourhood when you are walking/wheeling outside on your own during the daytime?
a. Very safe
b. Fairly safe
c. A bit unsafe
d. Very unsafe
e. Never walk outside alone during the day because I feel unsafe
f. Never walk outside alone during the day, other reasons
g. Don't Know

43. And how safe do you feel walking/wheeling outside in your local neighbourhood alone after dark?
a. Very safe
b. Fairly safe
c. A bit unsafe
d. Very unsafe
e. Never walk outside alone after dark because I feel unsafe
f. Never walk outside alone after dark, other reasons
g. Don't Know

44. The followings statements describe some common reasons why a household might choose to live in a neighbourhood or region (e.g., rural or remote area). Please tell us which ones applied to your household location choice.

1 = you agree completely; 7 = you completely disagree; 4 = you are not sure

Questions	Response						
	Agree			Not sure			Disagree
	1	2	3	4	5	6	7
44a. I/We have chosen to live in this neighbourhood/region because it is easy for our child(ren) to walk or cycle to school							
44b. I/We have chosen to live in this neighbourhood/region because it is a convenient location to walk or cycle to work							
44c. I/We have chosen to live in this neighbourhood/region because it is a convenient location with respect to our household's non-work activities, such as shopping, exercise, parks, etc.							
44d. I/We have chosen to live in this neighbourhood/region because there are shops and restaurants you can walk or cycle to							

Demographics

The following questions are about you and where you live.

45. How would you rate your physical health?
a. Poor
b. Somewhat poor
c. Fair
d. Good
e. Very good

46. Do you have a disability that limits your ability to engage in physical activity and/or active transportation?
a. Yes
b. Yes, but only some of the time
c. No

47. What sex were you assigned at birth?
a. Male
b. Female
c. Intersex
d. Prefer to self-describe as …
e. Prefer not to answer

48. What best describes your gender?
a. Man
b. Woman
c. Non-binary, genderqueer, agender, or similar identify
d. Two-spirit
e. Prefer to self-describe as …
f. Prefer not to answer

49. What province do you live in?
a. Newfoundland and Labrador
b. Prince Edward Island
c. Nova Scotia
d. New Brunswick
e. Quebec
f. Ontario
g. Manitoba
h. Saskatchewan
i. Alberta
j. British Columbia
k. Yukon
l. Northwest Territories

m. Nunavut

50. What was your age at your last birthday?
a. 18-24 years
b. 25-44 years
c. 45-64 years
d. 65 years or older

51. What is your marital status?
a. Single, that is never married and never registered in a civil partnership,
b. Married and living with husband/wife
c. Separated, but still legally married
d. Divorced
e. Widowed
f. In a registered civil partnership
g. Separated, but still legally in a civil partnership
h. Formerly in a civil partnership which is now legally dissolved
i. Surviving partner from a civil partnership

52. What is the highest level of education you have completed?
a. No schooling
b. Elementary school
c. Some or completed high school
d. Some or completed community college or technical school (CEGEP)
e. Some or completed University (Bachelors, Masters, Doctorate, Professional Degree)

53. Although we do not need exact amounts, what category best represents your total household income in the year ending December 31, 2020 before taxes?
a. Less than $30,000
b. $30,000 to $59,999
c. $60,000 to $79,999
d. $80,000 to $99,999,
e. $100,000 to $120,000, or
f. More than $120,000
g. Don't Know

54. Are you now, or have you ever been a landed immigrant in Canada? Roughly how many years have you lived in Canada?
a. Yes, 1-5 years
b. Yes, 5-10 years
c. Yes, 10-15 years
d. Yes, More than 15 years
e. No

55. Which of the following options best describes your ethnic or cultural background? (Check all that apply)?
a. North American Aboriginal origins (e.g., First Nations, Inuit, Métis)
b. Other North American origins (e.g., Acadian, American, Canadian)
c. European origins (e.g., British Isles, French, Eastern, West European)
d. Caribbean origins (e.g., Antiguan, Bahamian, Cuban, Dominican)
e. Latin, Central and South American origins (e.g., Argentinian)
f. African origins (e.g., Central and West African, Northern African)
g. Asian origins (e.g., Western Central Asian, and Middle Eastern)
h. Oceania origins (e.g., Australian, New Zealander, Pacific Island)
i. Don't know
j. Refuse

56. What is your current employment status? Are you
a. Working on a full-time basis in a workplace setting away from the home?
b. Working on a full-time basis but at your home?
c. Working on a part-time basis in a workplace setting away from the home?
d. Working on a part-time basis but at your home?
e. A student participating in classes at an educational facility away from the home?
f. A student participating in virtual classes at home?
g. Retired?
h. Unemployed, on leave, on disability?
i. A homemaker (care for home or for dependents)?

57. Has your employment status changed since the start of the pandemic?
a. Yes
b. No

58. If employed, is your occupation considered an essential or key service?
a. No
b. Yes
c. Not sure

59. Where do you live? In a:
a. City
b. Town
c. Village
d. Hamlet
e. Other

60. What is the size of the city or town in which you live?
a. Under 1,000
b. 1,000 to 4,999
c. 5,000 to 9,999
d. 10,000 to 29,999

e. 30,000 to 49,999
f. 50,000 to 99,999
g. 100,000 to 249,999
h. 250,000 to 499,999
i. 500,000 or greater

61. What is the distance from your home to your place of work or study?
Less than 2 kms
2.0 kms to 4.99 kms
5.0 kms to 9.99 kms
10.0 kms to 19.99 kms
More than 20 kms
NA (e.g., I work at home, I am retired)

62. Including yourself, how many people live in your household?
in household:

63. How many adults?
# of adults:

64. How many children (18 years and under)?
# of children:

65. How many cars or vans are owned, or available to the household? Include company cars (if available for private use).
a. 0
b. 1
c. 2
d. 3
e. 4 or more

66. Which of the follow do you own (yes, no):
66a. Bicycle (conventional pedal bike)
66b. Scooter
66c. E-bike
66d. E-scooter
66e. Step counter (e.g., pedometer, FitBit)
66f. Dog

To allow for us to link air quality information from your local area to your transportation choices, we need to know your 6-digit postal code.

67. What is your 6-digit postal code? _____

This is your last opportunity to withdraw from the survey.

68. Do you wish to withdraw from the survey?

a. No
b. Yes

Thanks for your participation!!!